



# **Disaster Risk Reduction Education for Children: A Study in Bangladesh Engaging Children as Co-Researchers**

by

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Thesis

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## DECLARATION

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Signed: ..... *Mayeda Rashid* .....

Date: ..... 18/07/2020 .....

## **ABSTRACT**

In the last decade, a number of studies have been conducted on different types of disaster education programs for children. These studies suggest that such programs enable children to be more resilient, not only in terms of increased knowledge on disaster risk reduction (DRR) but also increased preparedness and confidence. However, despite the positive findings, significant challenges still remain. In spite of generating effective DRR outcomes, the area of program development and evaluation lacks a guiding model. This includes one that speaks to both effectiveness and sustainable implementation. Disaster education programs for children are mostly designed and implemented by non-formal educators such as development and humanitarian agencies. As a result, the literature is primarily based on the evaluation of programs (such as those of Non-Government Organisations or NGOs). Many of these have been identified as having significant methodological limitations. Studies to date also typically rely on DRR knowledge indicators and do not identify the explicit elements of the programs responsible for generating specific positive outcomes. None of the studies has sought direct opinion from children regarding the process, efficacy and outcomes of such programs.

Thus, this study aims to conduct rigorously designed research on DRR education for children in Bangladesh by involving children's active input and participation. In so doing, it aims to identify the specific elements of the DRR education programs for children that produce positive outcomes. Another aim is to examine implementation factors, including those structural and process factors that facilitate rather than impede sustainable implementation and child-participation.

Considering the role of active child participation in this research, this study sought to empower the children by engaging them as co-researchers. Since the power inequalities between child

participants and adult researchers are inevitable for obvious reasons such as age gap, lack of experience of children in the field of research and, above all, the accountability mechanism in academia, child-participation literature recommends the intriguing idea of seeking children's assistance in understanding their perspectives, instead of merely regarding them as research objects. This study therefore fostered children as co-researchers by involving them in various research activities, ranging from data collection to analysis, and importantly, in documenting the findings. To more effectively minimise the power differential, the study incorporated child-friendly methods and techniques that are built on children's competencies and interests and ensured that the children had support from each other.

This study makes a significant contribution to our theoretical understanding of DRR education for children by exploring its related challenges and achievements. It provides evidence for improvements in relevant policy and practice. The recommendations made by the child co-researchers can be used as guiding principles in the design and implementation of child-centred DRR education programs in Bangladesh. Most importantly, by bringing children on board as co-researchers, this study provides a framework for engaging children in research on disasters. It therefore encourages future researchers to empower children as co-researchers and foster their genuine participation in research.

*He is made one with Nature: there is heard  
His voice in all her music, from the moan  
Of thunder, to the song of night's sweet bird;  
He is a presence to be felt and known  
In darkness and in light, from herb and stone,  
Spreading itself where'er that Power may move  
Which has withdrawn his being to its own;  
Which wields the world with never-wearied love,  
Sustains it from beneath, and kindles it above.*

~Percy Bysshe Shelley (1921), *Adonais*

For the late **Professor Kevin Ronan**, my principal supervisor, my friend who taught me to be kinder, to be more humane, and not to compromise with research rigour.

This thesis is also dedicated to my cousin, **Bitto** (Syed Nayeem Ahmed).

I cannot remember the last time he received anything nice in his life. While suffering from schizophrenia since childhood, his whole life is subjected to lockup in a small room. In my memory, he is still that happy little kid with the brightest eyes who could win a thousand hearts with a smile. He was, and he still is very dear to me. My baby brother, I love you to the moon and back; I wish you all the healing vives while dedicating this thesis to you. At the same time, I hope that not a single person with schizophrenia receives such a discrimination in their life. I wish each of them gets access to proper treatment and support, and leads a normal life.

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## CHAPTER 1

### INTRODUCTION

*Your children are not your children.  
They are the sons and daughters of Life's longing for itself.  
They come through you but not from you,  
And though they are with you, yet they belong not to you.*

*You may give them your love but not your thoughts,  
For they have their own thoughts.  
You may house their bodies but not their souls,  
For their souls dwell in the house of tomorrow,  
Which you cannot visit, not even in your dreams.  
You may strive to be like them, but seek not to make them like you,  
For life goes not backward nor tarries with yesterday.*

*~ Kahlil Gibran (1923), The Prophet*

#### **1.1. Overview**

This chapter introduces the research context. After providing a concise background, it states the research gaps and aims of the study. This is followed by a short description of the research methodology, the stages of the research and the contribution of this study. It closes with an overview of the thesis structure which includes brief statement about the rest of the chapters.

#### **1.2. Background and Rationale**

Disasters cause loss of human lives and property and typically leave economic damage in their wake. The evidence suggests that the frequency and impacts of disasters is increasing (CRED, 2018; Guha-Sapir, Vos, Below & Ponserre, 2011, 2012; Guha-Sapir, Hoyois & Below, 2013, 2014, 2015, 2016; Guha-Sapir, Hoyois, Wallemacq & Below, 2017; Mizutori & Guha-Sapir, 2018). Over the last ten years, two billion people have been affected by disasters: in 2017 alone a total of 335 reported large disasters (excluding biological disasters, e.g., epidemics, insect infestation and animal stampedes) have affected over 95.6 million people, causing more than

9,697 deaths, and a record amount of AUD 472 billion in damages (International Federation of Red Cross and Red Crescent Societies, 2018).

Children have been identified as one of the most vulnerable demographic groups in disasters (Anderson, 2000, 2005; Delica, 1998; Fothergill & Peek, 2015; Luna, 2007; Peek, 2008, 2010; Peek & Fothergill, 2006; Rivers, 1982; Ronan, 2015; Ronan & Johnston, 2001, 2003, 2005; Ronan, Petal, Johnson, Alisic et al., 2014a; Tanner, 2010; Tanner & Seballos, 2012; Wisner, 2006). The World Health Organization (WHO) estimates that children account for 30 to 50 percent of global disaster fatalities (WHO, 2008; WHO & partners, 2011). They also experience the most severe psychosocial reactions due to disasters (Aptekar & Boore, 1990; Black, 1982; Newman, 1976; Norris, Friedman, Watson, Byrne, Diaz & Kaniasty, 2002; Fothergill & Peek 2015; Peek, 2008; Ronan & Johnston, 2005; Sugar, 1989). ‘Children’ here are defined as persons who are under the age of 18, as declared by the United Nations Convention on the Rights of the Child (UNCRC) (United Nations, 1989). Toward the end of the twentieth century, disasters were affecting approximately 66.5 million children per year (Penrose & Takaki 2006). With a rapidly increasing trend every year, throughout the second decade of the twenty-first century it is anticipated that this number will reach up to a three-times higher figure (Save the Children UK, 2007). Thus now, every year, around 175 million children are being affected by disasters (Save the Children UK, 2007, Save the Children, 2008).

Besides counted in the massive death toll from disasters, children also suffer from malnutrition, malaria, diarrhoea, vector-borne diseases, respiratory illness, etc., during and in the aftermath of disasters (Bartlett, 2008; Peek, 2008). This happens due to the developing nature of their physical and immune system, and cases are usually higher and even more severe in lower-income countries, e.g., Bangladesh (Bartlett, 2008; Bairagi, 1980; 1986; Chowdhury, Bhuyia,

Choudhury & Sen, 1993; Razzaque, Alam, Wai & Foster, 1990). Many children also experience separation from families, violence and abuse during and after disasters, including physical, emotional and sexual violence, and human trafficking (Peek, 2008). Moreover, because of the uniqueness of children's physiology, psychology and developmental attributes, they typically experience more psychosocial reactions compared to adults when disasters occur, including where they live or where they play and learn, i.e., home, schools and community setting (Bloch, Silber & Perry, 1956; Burke, Borus, Burns, Millstein & Beasley, 1982; Burke, Moccia, Borus & Burns, 1986; Lonigan, Shannon, Finch Jr., Daugherty & Taylor, 1991; Peek, 2008). Therefore, building children's resilience and reducing their vulnerability to disasters are essential. This is also under children's right to survival and protection as provided for by the United Nations Convention on the Rights of the Child (UNCRC) (United Nations, 1989). However, one of the best ways for doing so is building a "culture of risk reduction" for and among children and communities (Morris & Edwards, 2008). The principal way to build this risk reduction culture is to create opportunities for children to learn and gain skills in disaster risk reduction (DRR) (Ronan, 2015, Selby & Kagawa, 2012). While children may be more vulnerable to the impacts of disasters and require the protection of adults, they also have their unique resilience strategies and capacities for DRR (Delica, 1998; Gordon & Wraith, 1993; Fothergill & Peek 2015; Lahey, 2015; Masten, Best & Garmezy, 1990; Peek, 2018; Rashid, Ronan & Towers, 2016; Ronan, 2015).

Although some children can develop disaster-related fears (Muris, Merckelbach & Collaris, 1997), most have questions and concerns about hazards and disasters, particularly when these are subject to mass media coverage during and after an event (Rashid, Ronan & Towers, 2016). Research in both psychology and education supports that avoiding the topic does not serve the best interests of children: avoidance tends to maintain or increase children's fears, whereas

approaching the issue directly can help reduce them (Ronan & Johnston, 1999, 2005). Children's DRR education through age-appropriate activities is thus worthwhile, particularly when learning activities support children to "engage in" approach versus "avoidance-coping" strategies (Rashid, Ronan & Towers, 2016). When children have access to adequate support and guidance, they can develop knowledge, skills, and confidence for dealing with adverse situations and disaster risks (Masten, Best & Garmezy, 1990; Ronan & Towers, 2014; Towers, 2015). Research also suggests that children are highly motivated to share their knowledge with others, and this can, in turn, increase their resilience at the household and community level (Izadkhah & Hosseini, 2005; Petal & Crocetti, 2018; Petal, Ronan, Ovington & Tofa, 2020; Plan UK, 2010; Johnson, Johnston, Ronan & Peace, 2014a). Children should therefore no longer be perceived as "passive victims" with no role in DRR; rather, they should be considered as active agents who can take action to reduce their own risk as well as contribute to DRR within their schools, families and communities (Haynes, Lassa & Towers, 2010a; Haynes, Lim-Mangada, Akhmady & Roquino, 2010b; Mitchell, Haynes, Choong, Hall & Oven, 2008; Mitchell, Tanner & Haynes, 2009; Petal et al., 2020; Tanner, Garcia, Lazcano et al., 2009). The core goal of DRR education is, thus, to help reduce risk (e.g., saving lives, reducing psychosocial consequences) while enhancing children's intra- and inter-personal resilience. This way, DRR education also entails learning that helps children begin to think of themselves as global citizens with a sense of agency, compassion, and empathy (Hart, 1997).

Besides children's unique capacities for DRR, they also have a right to active participation in disaster risk reduction education. Recognising every child as a rightful citizen, the United Nations Convention on the Rights of the Child (UNCRC) provided them with the right to participation in activities which have direct and indirect influence in their life (United Nations, 1989). Thus, based on the dual principles of child protection and participation (United Nations,

1989, UNCRC Articles 4 and 12), there is a sound rationale for involving children in DRR activities, including those which build their knowledge and skills. Moreover, understanding the needs of children and actively including them in the school and community-based DRR activities have become an integral part of international frameworks for DRR (Ronan, Petal, Johnson et al., 2014) e.g., the Sendai Framework for Disaster Risk Reduction (United Nations, 2015). Placing children at the very centre of DRR efforts, the United Nations International Strategy for Disaster Reduction (UNISDR) advocates for children's participation in DRR education:

In particular children and youth have been singled out as having specific needs in terms of school safety, child-centred risk assessments and risk communication. But, more importantly, if appropriately educated and motivated on disaster risk reduction, they will lead and become the drivers of change. (UNISDR, 2013, p. 7)

In addition, many local and international non-government organisations (NGOs) have also come forward to provide DRR education to children with a more community-engaging approach that is widely known as Child-Centred Disaster Risk Reduction (CC-DRR) (Selby & Kagwa, 2012; Wisner, 2006). This approach actively engages children in DRR education programs along with their school, families and communities (Petal & Crocetti, 2018; Petal et al., 2020; Towers, Haynes, Sewell, Bailie & Cross, 2014; Save the Children UK, 2007; Plan International 2010; Plan UK, 2010).

Preliminary research to date shows that, by participating in such DRR education programs, children tend to become more resilient: this includes increased knowledge, reduced anxieties and fears, and increased preparedness at both the individual and household levels (Luna, 2012; Martin, 2010; Ronan & Johnston, 2001; Ronan, Alisic, Towers, Johnson & Johnston, 2015;

Ronan et al., 2016; Selby & Kagawa, 2012; Tanner & Seballos, 2012; Wisner, 2006). Over the last decade, a growing number of studies have been conducted on different types of DRR education programs for children (e.g., school-based education programs; community-based DRR, including climate change adaptation programs) that indicate positive outcomes. These studies suggest that such programs enable children to be more resilient, not only in terms of increased DRR knowledge and skills, but also of increased preparedness and confidence (Manyena, Fordham & Collins, 2008; Mitchell, et al., 2008; Mudavanhu, 2016, Mudavanhu, Manyena & Collins, 2015; Mudavanhu, Manyena & Collins et al., 2016; Ronan & Johnston, 2005).

### **1.3. The Void**

Research suggests that, with proper DRR knowledge received, children can not only keep themselves safe, but also can act as change agents for DRR in their households and communities (Delica, 1998; Kagawa & Selby, 2014; Peek, 2008; Petal & Crocetti, 2018; Ronan, 2015; Ronan, Haynes, Towers et al., 2016; Selby & Kagawa, 2012; Tanner & Seballos, 2012; Winograd, 2016; Wisner, 2006). Over the last decade, a number of studies have been conducted on different types of DRR education programs for children (e.g., community- and school-based). Each of the studies indicates positive outcomes in regard to increased knowledge and building resilience (Johnson, Ronan, Johnston & Peace, 2014b; Ronan, 2015; Ronan et al., 2016). Despite the positive findings, significant challenges still remain. Recently published systematic reviews focusing on DRR education programs for children to date indicate some serious limitations (Johnson et al., 2014b; Ronan et al., 2015). Reviewing 35 studies, Johnson et al. (2014b) recommended improved design and methodological rigour in future research, which a number of current studies lacked. With a view to exploring the effect of DRR education programs on children's knowledge about hazards and risk reduction, risk perceptions,

motivation and behaviour, Ronan et al. (2015) extended this systematic review, including a critique of these and additional studies. This includes a growing database on the general effectiveness of DRR education programs. By contrast, studies to date largely have not identified “which specific ingredients [i.e., elements of a DRR program] are responsible for producing which benefits” (Ronan et al., 2015). Thus, based on studies to date, further rigorously designed research is needed to identify specific elements of these programs and how such elements may generate optimal outcomes regarding DRR benefits for children and the broader community.

Despite, too, a rich array of DRR education programs undertaken internationally, studies have identified serious shortcomings in them. Despite generating effective outcomes through increased knowledge and skills, the area of development and evaluation lacks a guiding model. This includes one that speaks to both the effectiveness and implementation of programs. That is, the lack of scaled, sustainable implementation generally, but also of programs known to be effective, is a major problem (Lopez, Hayden, Cologon & Hadley, 2012; Mitchell, Tanner & Haynes, 2009; Ronan et al., 2015).

Following initial research in New Zealand (Johnson, Ronan, Johnston & Peace., 2014c), a recent study conducted in Jakarta using a multi-informant (child participants, school personnel and non-governmental organisations) and mixed methods approach by Amri et al. (2016) identified a number of obstacles in the delivery and sustainable implementation of DRR programs for children. These include one-off program delivery reflecting a pilot and ‘project’ mentality (*versus* a scaled implementation mentality), funding and curriculum limitations, and teachers’ lack of capacity owing to a lack of training hindering their view of these programs as desirable and useful for children. It is therefore evident that, to obtain the best results from

DRR education programs for children, programs need a) to be effective in reducing children's vulnerability, and in enhancing capacities for reducing risk for children, their schools, households and communities, and, at the same time, b) to be able to be scaled up and sustainable. However, this requires building capacity within schools so that schools themselves, and their teachers, can overcome obstacles to implementing and delivering programs effectively (Ronan et al., 2016). But for this, further rigorously designed research is required.

Of the studies that indicate positive outcomes of CC-DRR on a broader scale (40 studies in Ronan et al. 2015), none sought children's views directly on what particular elements of CC-DRR they like or dislike, and what they would want in their program and what not. The recent evaluation of CC-DRR programming in Bangladesh and the Solomon Islands indicates serious issues regarding the lack of child participation (Hayes, 2016). Hayes reports "tokenistic" attendance of children because "children are involved but their views and opinions are not taken into account by adults" (2015, p. 19). Hart (1997) places children's "right to participation" in parallel to their "right to freedom of thought." Although Hart originally advocated this idea in the context of environmental education for children, this can be equally applicable to any educational program for children, including DRR. According to Hart, participation of children is not empowered and meaningful unless they have freedom of participation. That is, they should have the freedom to plan, design, develop and execute their program. In so doing, children may often come up with fruitless outcomes, but Hart argues that this way they will get to experience "ideal democracy" which in the long run will help them in better learning and becoming more confident citizens:

Such projects are of much greater value to the democratization of children than those that pretend... Children need to see the failures of the process and the limited influence

of planners, as well as themselves, in determining what happens to their environment.

The main goal of children's participation projects, then, is 'conscientization' – becoming aware through facing and articulating this difficulty. (1997, p. 28)

Hence further research is needed to explore ways for active child engagement at all levels of DRR education programs for children.

Thus, based on preliminary research and reviews to date, this study aims to conduct a rigorously designed research on DRR education for children, focusing on CC-DRR and School DRR by involving children's active input and participation. It has the aim, thereby, of identifying the specific elements of DRR education programs for children that produce positive outcomes in their schools, households and communities, including increased DRR knowledge and skills. The research will also shine a light on the extent of child participation in such programs. Another aim is to examine implementation factors, including those structural and process factors that facilitate as opposed to impede sustainable implementation of such programs in the school and community setting and active child participation at all levels (both at decision making and implementation).

#### **1.4. Scope of the research**

The primary aim of this study is to conduct rigorous research on "DRR education for children."

The goal is to explore the current practices of DRR education programs, including both school DRR and CC-DRR programs, for their processes of implementation and effectiveness. It thus aims to create the best opportunities for empowered child participation in the research process.

The secondary purpose is to suggest new approaches for developing effective and sustainable DRR education programs that are built on the findings from children's perspectives and lessons from previous research and theories.

### 1.4.1. Research Objectives

To achieve its aims the study has the following objectives:

- i. To understand the structures, components and process of implementation of the current DRR education programs, including School DRR and CC-DRR;
- ii. To identify component/element specific outcomes of the current DRR education programs from a holistic perspective, utilising both “top-down” (i.e., research and theory) and “bottom-up” (i.e., views of the stakeholders) approach;
- iii. To determine whether and to what extent DRR education programs foster children’s participation, including marginalised groups (e.g., gender diversity, disabilities, working children);
- iv. To identify the institutional mechanisms and processes which can facilitate *versus* impede sustainable implementation of DRR education for children; and
- v. To identify pathways for developing sustainable DRR education programs for and with children that are effective<sup>1</sup> in bringing about positive outcomes and, at the same time, ensuring maximum child participation at all levels of design and implementation.

### 1.4.2. Research Questions

To meet these objectives, the research seeks to answer the following questions:

1. What are the structures, components and implementation process of current CC-DRR and school DRR programs (Objective i)?
2. What are the explicit outcomes of different components of the current DRR education programs (Objective ii)?

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<sup>1</sup> Effectiveness refers to whether, as a result of the program, children are happy, empowered and are able to participate confidently in reducing disaster risk at their school, household and community setting.

3. To what extent do current DRR education programs foster children's (including marginalised children's) participation (Objective iii)?
4. What institutional mechanisms and processes facilitate *versus* impede the sustainable implementation of DRR education for children (Objective iv)?
5. What steps should be taken for developing sustainable DRR education programs that bring about positive outcomes and, at the same time, ensure maximum child participation at all levels of design and implementation (Objective v)?

### **1.5. Methodology**

The study took place in Bangladesh in Dhaka, Narayanganj and Brahmanbaria districts. The field-level research was conducted in three phases. The first phase included a multi-informant, qualitative approach, primarily involving participants from three distinct groups: government officials, NGO practitioners (those implementing CC-DRR programs) and children. Data collection methods utilised in this phase were qualitative interviews with government officials and NGO practitioners, focus groups discussions with the children and participant observation during NGO-driven CC-DRR programs. The second phase involved child-led workshops for data analysis. The third phase involved a follow up for a ten month period to learn how children's empowered involvement in this research contributed to DRR in their school, household and community.

Previous studies have captured the views of children (although not through active participation), government and NGO officials in the field of DRR education (e.g., Amri et al., 2016; Back, Cameron, & Tanner, 2009; Djalante & Thomalla, 2012; Tanner, 2010). But none of these combined the perspectives of all three stakeholder groups. In addition, to ensure empowered participation of children, the study involved them as co-researchers (Christensen

& James, 2008; Thomas & O’Kane, 1998). Children participated in various research activities through child-friendly methods which built on their competencies and interests. Most importantly, in recognition of children’s right “to be provided the opportunity to be heard” (UNICR, 1989) and co-researchers’ right to communication of research findings, a complete chapter has been written by the child co-researchers (which is also the largest chapter in this thesis). The children have also contributed another substantial section in the conclusion chapter. The findings aim to fill the void which currently exists within the literature and practice.

## **1.6. Contribution**

The thesis makes a contribution to our theoretical understanding of DRR education for children. While previous research investigated the benefits of DRR education based on the evaluations of adult researchers (with many studies having significant methodological limitations), this thesis involved rigorous research through the eyes of children. The dearth of literature on the obstacles and opportunities for child participation in DRR made this research unique. The thesis is the first of its kind to investigate the implementation process of DRR education for children from an activity theory perspective, focusing on four fundamental areas: a) design and development; b) training; c) delivery and facilitation; and d) monitoring and evaluation. It provides evidence to support improvements in policy and practice. The recommendations in the thesis made by the child co-researchers can be used as guiding principles in the design and implementation of CC-DRR-focused participatory education programs in Bangladesh. Thus, government organisations, NGOs, emergency management agencies, schools, communities and, in particular and ultimately, children will benefit as a consequence of this study.

Finally, and most importantly, the thesis provides a framework for empowering children's participation in disaster research. While the power inequalities between child researchers and adult researchers are inevitable for obvious reasons – the age differential, the lack of experience of children in research, and, above all, the existing accountability mechanism in academia including 'ethics clearance' bureaucracy – the thesis contributes to overcoming these challenges by bringing children on board as co-researchers. For that purpose, the thesis took the utmost care in constructing child-friendly methods which built on their competencies and interests. Thus the research also contributes in designing child participatory research methods. The thesis is also expected to encourage future researchers to empower children as co-researchers and foster their genuine participation in research.

### **1.7. Structure of the Thesis**

This thesis comprises nine chapters. The following chapters will go into more depth and specifics with a succinct literature review, clarifying the chosen research gap and identifying key studies followed by study design methodology, research findings, discussion, recommendations and conclusion. An outline of the remaining chapters is given below.

#### **Chapter 2: Children as Change Agents in Reducing Risks of Disasters.**

This chapter is a verbatim reproduction of the published book chapter: Rashid, Ronan and Towers (2016), in Winograd (Ed.), *Education in times of environmental crises: teaching children to be agents of change*, pp. 233-246. It provides an extended rationale for DRR education for children based on research and evidence. It also offers guidelines for teachers to facilitate DRR learning in more effective and participatory ways that are supported by research and theories. A published version of the chapter is available via the [Routledge link](#).

### **Chapter 3: Literature Review**

This chapter goes into more depth and specifics with a targeted review of the relevant literature identifying key studies and clarifying the chosen research gap. It presents a broad overview of DRR education for children. This includes school-based DRR education, community-based DRR learning and child-centered disaster risk reduction (CC-DRR). It links this research with the existing theories and frameworks in relation to the research enquiries, methodologies and communications of findings.

### **Chapter 4: Bangladesh: Vulnerabilities and Disaster Risk Reduction**

This chapter provides a succinct background on hazards, disasters, children and the school education system in Bangladesh. The goal is to introduce readers to the circumstances and environment of the study setting, so that they can relate to the findings of the research.

### **Chapter 5: Methodology**

This chapter outlines the epistemological framework of the study, followed by an elaborative description of research design and methods. It discusses how the empirical evidence is gathered by using multi-informant qualitative methods involving children as co-researchers in the process. The three phases of the field-level research are outlined with details pertaining to data collection, data analysis, and rationale. As the study has involved children as co-researchers, the process and activities relating to their participation are discussed in detail.

### **Chapter 6: Ode to Children**

This chapter celebrates the participation of children and their valuable contribution as co-researchers in the study. The core subject matter is the depiction of findings of the research through the eyes of children and in their own voice. This chapter has been written by the 24

child co-researchers from Bangladesh. It has been fashioned in the way that the children wanted it to be. They have spoken and written in Bengali; they also intermittently used some English phrases. The Bengali language has been translated in English by the researcher, keeping the English phrases as they were. The utmost care has been taken to ensure that the simplicity, authenticity and, most importantly, the originality of their expressions remains intact. Consequently, the reader can expect some unusual grammatical expressions, some spelling mistakes, and some use of capital letters in the middle of sentences. Similarities of the text colours have been retained. The children's voice has been represented in *italic* font. When there is a chance of confusion of meaning due to misspelling or expression, the correct word is provided by the adult researcher in black letters in non-italic text.

## **Chapter 7: Findings from the Perspective of the Adult Researcher**

This chapter presents the findings of the study from the view of the PhD researcher. The findings are portrayed within the Activity Theory framework. The chapter presents the findings on implementation and outcomes of DRR education for children in Bangladesh. It discusses the findings on implementation from four distinct areas identified through the data analysis: a) curriculum/program design and development; b) training of teachers/staff; c) curriculum/program delivery in the classroom and community setting; and d) monitoring and evaluation. It then presents the findings from these areas following the structure of the Activity Theory framework from the following perspectives: a) subjects and objects; b) rules and tools; and c) community and division of labour. It presents the findings on the outcomes of CC-DRR and DRR School DRR programs in Bangladesh.

## **Chapter 8: Synthesis and Discussion**

The most important findings are concisely summarized by bringing the voices of the child researchers and the adult researcher together. The discussion is logically ordered to show themes in the findings according to the Activity Theory framework. The results are discussed and interpreted in relation to the relevant literature and theory. The significance of the results is emphasised. The chapter points to the challenges as well as the scope and opportunities for sustainable DRR education for children in Bangladesh. Recommendations are made for further research and action.

## **Chapter 9: Recommendations and Conclusion**

This chapter begins with a statement outlining where the research presented in this thesis sits in relation to the research questions. It provides a “Teacher-Facilitated Child-Centred Disaster Resilience Education” program that has been designed and developed by the child co-researchers. The limitations of the research are acknowledged and evaluated. The theoretical and practical implications of the results are also stated. Finally, the opportunities for utilisation of the research are stated and suggestions for further research are made. This chapter also includes a substantial section written by the child co-researchers.

## CHAPTER 2

### CHILDREN AS CHANGE AGENTS IN REDUCING RISKS OF DISASTERS

This chapter is verbatim reproduction of a published book chapter and can be cited as Rashid, M., Ronan, K. R., & Towers, B. (2016). Children as change agents in reducing risks of disasters. In K. Winograd (Ed.), *Education in times of environmental crises: Teaching children to be agents of change*, pp. 233-246. New York: Routledge.

#### DECLARATION OF CO-AUTHORSHIP AND CO-CONTRIBUTION

**Title of Paper:** Children as change agents in reducing risks of disasters

**Full bibliographic reference:** Rashid, M., Ronan, K. & Towers, B. (2016). Children as change agents in reducing risks of disasters. In K. Winograd (Ed.), *Education in times of environmental crises: teaching children to be agents of change*, pp. 233-246. New York: Routledge.

**Status:** Published

#### **Nature of Candidate's Contribution, Including Percentage of Total**

In conducting the study, I was responsible for identifying and reviewing relevant literature, and management and analysis of electronic data. This publication was written by me. I formed the research questions, collated the literature, analysed the data and interpreted the results. 85%.

#### **Nature of Co-Authors' Contributions, Including Percentage of Total**

My co-authors, Professor Kevin Ronan and Dr Briony Towers critically reviewed the manuscript with questions, comments and criticism. They also provided guidance in editing and preparing the manuscript for submission. 15%

## CHILDREN AS CHANGE AGENTS IN REDUCING RISKS OF DISASTERS

*Mayeda Rashid, Kevin R. Ronan, and Briony Towers*

### ***Vignette One: The Miracle of Kamaishi***

On March 11, 2011, the Great East Japan Earthquake set off a tsunami so devastating that more than 15,800 people died and 2,660 people are still missing. But in Kamaishi, Iwate Prefecture, teachers' quick actions reportedly saved more than 3,000 students of Kamaishi elementary and junior high school. The series of events brought hope to the people in time of such a disastrous event and has been dubbed "The Miracle of Kamaishi."

Owing to the tsunami, more than 1,000 Kamaishi residents lost their lives, but only five of them were school children who were absent from school on that day. For several years before the tsunami, Toshitaka Katada, a professor of civil engineering at Gunma University, collaborated with the teachers of Kamaishi Prefecture to deliver school-based disaster preparedness education. The students practiced evacuation drills and were taught different methods for disaster preparedness, mitigation, and prevention. Consistent with data from the World Health Organisation, Katada believed that in times of disaster children are the most vulnerable, so educating children about their safety and helping them prepare for disaster through prevention and preparedness activities was one of his priorities.

When the earthquake struck, the teachers and students of Unosumai Elementary School gathered on the third floor of the school building, where they thought they would be safe. Then some of them noticed that at the nearby Kamaishi Higashi Middle School, students were evacuating the school grounds and running for higher ground

The Unosumai school children and staff had practiced this response with the middle school in the past and they decided to join them on the hillside. Together they could reach the safe location while behind them the mega-tsunami swallowed their schools and the town. (NHK World TV, 2012)

Research has shown that disaster-related fears are prominent among children (Muris, Merckelbach & Collaris, 1997). Most children do have questions and concerns about hazards and disasters, particularly when these are subject to media coverage during and after an event. Research in both psychology and education suggests that avoiding the topic does not serve the best interests of children: avoidance tends to maintain or increase children's fears whereas approaching the issue directly can help reduce them (Ronan & Johnston, 2005; Towers, 2015).

Teachers' efforts to initiate age-appropriate activities and facilitate children's learning about hazards in their local environment are thus worthwhile, particularly when learning activities support children to engage in approach- versus avoidance-coping strategies.

By teaching children knowledge and skills for 'disaster risk reduction' (DRR), teachers can help children manage fears and anxieties stemming from the anticipation of disasters. This includes helping them move from the idea that disasters, and other risks in life, are *insurmountable* threats to the idea that they are *challenges* and problems that have solutions (Ronan & Towers, 2014). The idea here is that children with DRR knowledge and skills – along with attendant “adaptive capacities” like approach (versus avoidance) coping, risk assessment, and problem-solving – are also more confident and capable problem-solvers in relation to hazards and disasters, both human-caused and natural (Ronan & Towers, 2014). The core goal of DRR education is to help reduce risk (e.g., saving lives, reducing psychosocial consequences) while enhancing students' intra- and inter-personal resilience<sup>2</sup>. DRR education also entails learning that helps children begin to think of themselves as global citizens with a sense of agency, compassion, and empathy.

School-based DRR education can translate into life-saving outcomes. As demonstrated in the documentary, “The Kamaishi Miracle” (NHK World TV, 2012), the school disaster education program in Kamaishi Higashi Junior High School was based on three simple “rules of survival”: don't make any assumptions; do your best; and go as quickly as you can. The education programme also included conducting joint evacuation drills with neighboring schools. In these drills, older students practiced evacuating and provided instruction to

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<sup>2</sup> The United Nations International Strategy for Disaster Resilience (UNISDR, 2009) defines resilience as “the ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner.”

elementary school students on how to do this effectively. As a result, at the time of the earthquake, students put their learning into action and evacuated to higher ground. Reports also indicated that some students who were not at school that day were able to apply their knowledge of earthquake response and convince their families to evacuate (NHK World TV, 2012).

While teachers may like the idea of including DRR in the curriculum, they are confronted by a range of obstacles which involve an overcrowded syllabus, difficulty in locating developmentally/age-appropriate learning activities, a lack of confidence in teaching children DRR, a lack of support from school leadership, and weak partnerships with local emergency management agencies. The fundamental question is how do we help teachers and schools (and larger entities like departments of education) effectively implement DRR education that reduces disaster risk and increases children's resilience.

### **DRR Education for Children: Background and Expanded Rationale**

According to the United Nations International Strategy for Disaster Reduction (UNISDR, 2009), disasters are defined as:

*A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources.*

The evidence suggests that the frequency and impacts of disasters is increasing. For example, in 2012, a total of 120 countries were hit by a total of 357 disasters (excluding biological disasters, e.g., epidemic, insect infestation, and animal stampede), affecting 122.9 million people, causing more than 9,655 deaths and producing \$157.3 billion in damages (Guha-Sapir

et al., 2013).

Children are one of the most vulnerable demographic groups in disasters. For example, the World Health Organization (WHO) estimated that children account for 30 to 50 percent of disaster fatalities (WHO, 2008; WHO & partners, 2011). Children are also highly vulnerable to severe psychosocial reactions (Norris et al., 2002; Ronan & Johnston, 2005). Importantly, while children may be more vulnerable to the impacts of disasters and require the protection of adults, they also have a right to participate in disaster risk reduction. This includes having the strategic knowledge for dealing with adverse circumstances and developing resilience. When children are provided with adequate support and guidance, they can develop knowledge, skills, and confidence for dealing with a range of disaster risks (Ronan & Towers, 2014; Towers, 2015). Research also suggests that children are highly motivated to share their knowledge with others which can, in turn, increase their resilience at the household and community level (Plan UK, 2010; Johnson et al., 2014c). Taking this participatory view, children are not seen as the passive victims with no role in DRR but, rather, as active agents who can take action to reduce their own risk as well as contribute to larger household and community mobilization efforts (Haynes et al., 2008; Mitchell et al., 2008; Tanner et al., 2009).

***Vignette Two: The Story of Tilly Smith***

In 2004, a ten-year-old British girl named Tilly Smith reportedly saved nearly a hundred people from a tsunami by warning them minutes before it reached the Maikhao beach in Thailand. Most of the beachgoers were foreign tourists unconcerned about tsunamis and unaware of early signs. Just two weeks before the incident, when Smith was in Danes Hills School, Oxshott, Surrey, her geography teacher Andrew Kearney taught the class about tsunamis, including early warning signs. When the earthquake in the Indian Ocean hit, Smith remembered this geography lesson. She immediately warned her parents when she noticed receding water from the shoreline and also bubbles on the sea surface. Her parents and she alerted nearby beachgoers and the hotel in which they were staying. Due to their warning, it was possible to evacuate the beach before the tsunami got to the shore and avoid casualties on that beach. (UNISDR, 2011, Aug 11)

Based on the dual principles of child protection and participation (United Nations, 1989, UNCRC Article 4 and 12), there is a sound rationale for teaching children DRR and resilience knowledge and skills. Understanding the needs of children and actively including them in household and community DRR has become a part of international frameworks for DRR (Ronan et al., 2014). For example, the recently published Synthesis Report on Consultations on the Post-2015 Framework on Disaster Risk Reduction (UNISDR, 2013) placed children at the very center of DRR efforts: “In particular children and youth have been singled out as having specific needs in terms of school safety, child-centred risk assessments and risk communication. But, more importantly, if appropriately educated and motivated on disaster risk reduction, they will lead and become the drivers of change” (p. 7).

### **DRR in the Elementary School Curriculum: Research**

A recent review of the research shows that children *can* learn how to cope with disasters and become more resilient as a result of DRR programs (Johnson et al., 2014a). This includes increased knowledge, reduced anxieties and fears, and increased preparedness at both the individual and household levels. For example, Ronan and Johnston (2001a) found that children in New Zealand who were involved in some hazards education programs were reported to have more realistic perceptions of risk, reduced disaster fears, and increased knowledge of protective behaviors compared to those not involved in such programs. Additionally, their parents also reported more home-based DRR activities (e.g., adding lips to shelves, having a smoke detector, storing emergency equipment, learning first aid, learning how to put out fires, doing home inspections) compared to parents of children not involved in a hazards education program. Children and youth have great potential as a trusted source of information in communicating disaster knowledge to friends and family members (see also Ronan et al., 2008;

Webb & Ronan, 2014).

A recent study conducted in a lower socioeconomic area with high bushfire risk in Canberra, Australia, showed that children and youth were very motivated to learn about disasters and risk reduction (Webb & Ronan, 2014). Half the students were identified as typically ‘unengaged’ in educational/vocational programs, but along with the other (typically ‘engaged’) students, they attended *every* session<sup>3</sup>. Moreover, benefits to children and youth participants included significantly increased knowledge and preparedness skills, increased confidence, and reduced fears. Parents also reported that their children and they had implemented an average of six more home-based DRR activities by the end of the programme.

***Vignette Three: Children Teach What They Are Taught***

In Indonesia, DRR awareness material were developed and integrated within the education system to teach children about common disasters and action plans. Schoolchildren were taught DRR skills including how to respond (e.g., safety behaviours, sheltering). Children learned what to do while facing an earthquake and were encouraged to share their knowledge with their parents. In May 2006, the Yogyakarta region of Indonesia suffered an earthquake of 6.3 magnitude. Five thousand deaths were reported, though the death toll could have been even higher. Apparently, the local DRR program is credited for helping save lives. During the earthquake, for example, those families of children trained in DRR used the safety measures, including finding shelter under stable objects (e.g., tables). (GTZ, 2006)

**DRR Curriculum**

At the elementary school level, DRR curriculum should help students learn the following: (a) disaster risks; and (b) knowledge, skills, and strategies for reducing risks and enhancing resilience. These two content domains should be viewed as interdependent. Without an understanding of how disaster risk is created, strategies for reducing risk might be misdirected

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<sup>3</sup> The program was carried out at a local youth centre.

or ineffective. Without an understanding of risk reduction, students may assume that disasters are inevitable or unavoidable which would likely increase disaster-related fears and anxieties.

### ***Understanding Risk***

In order to understand disaster risk, students need to understand several key concepts including hazard, exposure, vulnerability, and capacity, and how these concepts interact with disasters. It is especially important that DRR curriculum makes a clear distinction between hazards and disasters. Specifically, a hazard is a phenomenon, situation, or human activity in which there is a *potential* threat to life, health, environment, society, and property (UNISDR, 2009, p. 7). A disaster, by contrast, is an event that causes serious disruption to the normal ways of a community or society involving extensive human, infrastructural, economic, or environmental losses that the affected community or society cannot bear on its own (UNISDR, 2009, p. 9). On their own, floods, earthquakes, tsunamis, volcanic eruptions, bushfires, droughts, and landslides are hazards. It is only when the impacts of these hazards cause widespread destruction of human lives and property that disasters occur. Whether or not a hazard event causes widespread disruption is dependent upon the level of exposure, vulnerability and capacity in a given area.

The way in which hazard, vulnerability, capacity and exposure<sup>4</sup> interact to create disaster risk can be illustrated with a simple example taken from Gallopın (2006). First, when a flood occurs, homes with more flimsy construction are hit harder than the more solid constructions (vulnerability). Second, the poorest homes in many communities are located in the places most

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<sup>4</sup> According to UNISDR (2009) definitions of exposure, capacity, and vulnerability are: exposure: “people, property, systems, or other elements present in hazard zones that are thereby subject to potential losses”; capacity: “the combination of all the strengths, attributes and resources available within a community, society or organization that can be used to achieve agreed goals”; vulnerability: “the characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard.

susceptible to flooding (exposure). Third, the families with the greatest resources have a greater availability of means to evacuate to a safer location and repair water damage upon their return (capacity). Finally, the magnitude of the final impact will also depend on the velocity and depth of the floodwaters (attributes of the hazard event). By focusing on not just the hazard but exposure, vulnerability, and capacity, this increases students' opportunities for enhanced problem-solving and risk-reduction skills in their households, schools, and communities.

### ***Reducing Risk***

Students should understand the stages of disaster risk reduction. These stages include *prevention, mitigation, preparedness, and response (and recovery)*. The term *prevention* refers to “the complete avoidance of losses of hazards and related disasters through action taken in advance” (UNISDR, 2009, p. 22). An example of prevention is land-use regulations that do not permit any settlement in high-risk areas such as flood plains. However, it is rare that losses can be completely avoided, and mitigation is a more realistic option. The term *mitigation* refers to “the lessening or limitation of the adverse impacts of hazards and related disasters” (UNISDR, 2009, p. 19). Mitigation measures can be ‘structural’ (e.g., flood levees, fuel reduction burning, hazard-resistant construction) or non-structural (e.g., public awareness, warning systems, evacuation, other key safety-related behaviors). *Preparedness* refers to the “knowledge and capacities developed by governments, professional response and recovery organizations, communities and individuals to effectively anticipate, respond to, and recover from, the impacts of likely, imminent or current hazard events or conditions” (UNISDR, 2009, p. 21). It includes activities such as contingency stockpiling of equipment and supplies, the development of arrangements for evacuation, emergency drills and field exercises. The term *response* is used to refer to “the provision of emergency services and public assistance during or immediately after a disaster in order to save lives, reduce health impacts, ensure public safety

and meet the basic subsistence needs of the people affected” (UNISDR, 2009, p. 24). However, emergency services rarely have the capacity to support all of those affected and citizens are often required to be self-reliant. For example, in many cases, citizens need to arrange their own transport for evacuation or implement response strategies such as ‘duck, cover, hold’ or ‘shelter-in-place’.

Ideally, once students have learned about hazards, vulnerability, capacity, and exposure, they will be able, alongside adults, to assess disaster risk in a variety of settings including their schools, households, and communities. They can then set about learning DRR strategies across the spectrum of prevention, mitigation, preparedness, and response. Students can also learn about the DRR strategies that have been implemented in their particular community. They can learn about existing planning regulations and assess whether these are adequate (prevention) (Izadkhah & Hosseini, 2005; Ronan & Johnston, 2003). They can learn about existing warning systems and methods through which warnings are disseminated at the local level (mitigation) (UNESCO/UNICEF, 2013). They can learn about current local emergency management arrangements including plans for evacuation and sheltering-in-place (preparedness) (UNESCO/UNICEF, 2013). Children can also learn basic first aid and other skills that would increase their chances of survival during a disaster, including key safety messages and behaviors and associated emotional regulation strategies (response) (UNESCO/UNICEF, 2013). Research reviewed earlier also demonstrates that children can influence their families to develop household emergency management plans and prepare more effectively. However, it should also be recognized that in some family contexts, children may struggle to engage their parents in such activities. Thus, the curriculum should incorporate some straightforward DRR measures that children can implement independently, such as enacting key safety behaviors and other measures (e.g., packing an emergency kit containing essential items and

treasured possessions) (Towers, 2015).

### ***Student-Centred Learning***

It appears that DRR that employs student-centred teaching approaches result in better results than traditional teacher-centred and worksheet- and lecture-based approaches. Student-centred learning refers the idea that students should have choice and participate actively in decisions about what to study and how to study (O'Neill & McMahon, 2005). Lea et al. (2003, p. 322) synthesizes student-centred learning to include the followings tenets: reliance on active rather than passive learning; an emphasis on deep learning and understanding; increased responsibility and accountability on the part of the student; an increased sense of autonomy in the learner; an interdependence and mutual respect between teacher and learner; and a reflexive approach to the teaching and learning process on the part of both teacher and learner.

Selby and Kagawa identified a set of student-centred learning modalities identified in case studies taken in programmes in 30 countries that promote child- and youth-focused DRR curricula (UNESCO/UNICEF, 2012). These include the following:

- ***Interactive learning:*** brainstorming, group discussion, and interactive multimedia presentations on topics related to disaster risk/climate change
- ***Inquiry learning:*** individual and team case study research, Internet searching, interviewing, project work
- ***Affective learning:*** expression of feelings, hopes, and fears regarding hazards and disasters
- ***Surrogate experiential learning:*** fictional and documentary films, board games, role play, drama, and simulation on disasters and climate change

- ***Field experiential learning:*** field visits to disaster support services facilities, hazard mapping and vulnerability assessment of home, school, and community, community hazard surveys
- ***Action learning:*** poster campaigns, street theatre on disasters and climate change, student-led school assembly, risk-reduction campaigns and projects (such as tree planting)
- ***Imaginal learning:*** using imagination to visualize positive and negative scenarios of past and future hazard and disaster, thinking what to do in crisis situations, sharing stories with one another
- ***Somatic and expressive learning:*** employing different types of artistic expression, body sculptures and human tableaux

However, Selby and Kagawa (2012) also found an extensive reliance on textbook-based rote learning in most of these countries (see also examples in Ronan, 2015), an approach that is largely ineffective in teaching children disaster preparedness and mitigation knowledge and skills (UNESCO/UNICEF, 2012). For example, a study on a drills-based/rote approach showed that almost 100 percent of children in that DRR education and drills-based program knew the most important protective behaviour (duck, cover, hold under a stable object). However, these students also endorsed a number of other behaviors (e.g., running outside) *that would put them at increased risk* (Johnson et al., 2014a). In addition to knowing what to do (e.g., duck, cover, hold), children (and adults) also need to know why a particular DRR message is important as well as how to enact that set of behaviors under various conditions. In other words, children need to learn not only the “what” in relation to DRR (e.g., key safety and risk reduction behaviours), they also need to know the “why” and the “how” in relation to these activities (Ronan & Towers, 2014; Towers, 2015).

We recommend the following practices for carrying out DRR in schools, particularly in the elementary school setting (Johnson et al., 2014b, 2014c; Johnston et al., 2015; Ronan & Towers, 2014; UNESCO/UNICEF, 2012, 2013):

- ***Graduated Sequence of Learning***

Research supports the value of a sequence of courses instead of teaching DRR as a one-off teaching event (e.g., Ronan & Johnston, 2001a; see also Ronan, Crellin & Johnston, 2010). Continuous integration of preparedness education into school curricula, geared to the next developmental level, can help children understand preparedness and effective management of risk as a societal value, not some extemporized assignment (Gustafson, 2009). We would also add that it is possible to incorporate this graduated sequence of learning in a manner that doesn't impinge unduly on a crowded curriculum (e.g., through linking this curriculum to school drills).

- ***Integrated Curriculum***

Disaster preparedness education can be integrated across different subjects. For example, Bangladesh has introduced disaster and climate change-related themes like hazards, vulnerability, and preparedness across a range of subjects: in the teaching of Bengali and English language, students study poems, read stories, and write essays about disasters and DRR; in social studies, they learn about the influence of poverty on disaster vulnerability; and in science they learn about the physical characteristics of hazards (UNESCO/UNICEF, 2012).

- ***Encouraging Interaction between Parents and Children***

DRR programs can promote child-parent interaction, such as structured home-based

discussions (e.g., development of home emergency plans, specified home-based activities including practice and stockpiling emergency supplies) that can start with simple discussions and straightforward activities that progress to more complex other tasks over time. In Australia's *Families Preparing Together* curriculum, students create a family evacuation plan to be displayed around the classroom that, later, is taken home to be shared and discussed with family members (Australian Emergency Management Institute, 2015). Another example is the School Safety Initiative in India which engages children to conduct "hazard hunts" in and around their homes (United Nations, 2007). Importantly, the emotional response of parents has a direct and often powerful impact on children who are coping with hazards and the threat of disasters (Ronan & Johnston, 2005). Therefore, school education programmes should also help parents understand the value of managing their own emotional reactions before, during, and after disasters.

- ***Promoting Self-confidence by Presenting Realistic Information***

Presenting realistic information about risks combined with learning activities that children can practice with families enhances children's self-confidence. For example, as introduced earlier, research shows that preparedness programs can help children reduce their fears of hazards, including in situations where their risk perceptions increase (Ronan & Johnston, 2001a; Ronan and Johnston, 2005). However, programs should avoid giving stark or hopeless information that might influence children to emotionally withdraw or, worse, cause distress (Ronan & Johnston, 2005). Representing disasters as challenges and problems to be solved is preferable to framing them as insurmountable threats.

- ***Addressing Children's Particular Needs***

Special consideration must be given to children particular learning needs or cultural

background. For example, bilingual children can serve as a communication link between relief efforts and family members and surrounding community who may not fully understand English or the instructional language. During Hurricane Katrina in 2005, many children from non-English-speaking families helped FEMA in the evacuation by translating information to family members regarding shelters, supplies, food, and registration (Mitchell et al., 2008). Additional considerations (e.g., encouraging participation by promoting caring relationships, buddy systems among peers, and welcoming attitudes) are required for children with a range of disabilities to account for their needs in preparedness and response contexts (Boon et al., 2011; Mutch, 2014).

- ***Interactive Learning***

Teaching DRR through social interactive activities tends to increase children's learning, including child-led discussions and problem-solving in class (and in other contexts) (Ronan & Johnston, 2003; Webb & Ronan, 2014). Other interactive approaches include peer-to-peer learning and mentoring (e.g., older children helping to teach younger children, as was done in Kamaishi). In terms of instructional materials, board games, interactive multimedia tools, visual teaching aids, and workbooks on disaster education as well as school-wide and inter-school events dedicated to promoting disaster reduction are also reported to be effective (UNISDR, 2009).

- ***Engaging Local Emergency Management Agencies***

DRR education programs for children include not only school-based programs but also programs carried out in community settings. This can include initiatives that can then also involve children and youth who do not attend school (e.g. Webb & Ronan, 2014). For example, in Sri Lanka, one community participation project built a roof water catchment and storage

structure near a school to replace one destroyed by the Asian tsunami. This was not an improvement in the everyday school water supply; rather, it provided an emergency water source for future disasters (Wisner, 2006). In addition, preparedness education programs can be integrated with existing community-based initiatives through parent–teacher groups, community and neighborhood groups, and other more specific DRR community initiatives. Various educational programs or preparedness competitions can also be organized through partnerships, starting with a local emergency management agency, a known facilitator for promoting school-based implementation of DRR education programs in classrooms (Johnson et al., 2014a). For example, in Jamaica, collaboration between Jamaica’s disaster preparedness agency and schools in Jamaica underpins a Disaster Awareness Day and Disaster Preparedness Day in schools. This includes an innovative disaster-themed culinary competition during the annual Independence Festival where the students prepare recipes and meals with their own creativity using ingredients that would be available after a disaster – those with a long shelf life that do not require refrigeration (Wisner, 2006).

## **Conclusion**

DRR education can empower children not only to protect themselves, but also to become agents of change in promoting safer homes and communities. From the perspective of participatory DRR education programs, children, teachers, and schools are at the center of a culture of safety and risk reduction. Learning about risk reduction and resilience can help solve problems linked specifically to disasters but also can be generalized to other risk-related problems (Ronan & Towers, 2014). Teacher training and capacity building for school-based DRR education should be a focus in both teacher education and community–school collaborations. Despite the challenges of yet another program, a motivated teacher, school, or school district can begin to initiate DRR programming that is developmentally appropriate,

reflects community needs, and is integrated into the curriculum. In doing so, we are confident that children can, indeed, be more prepared for the inevitable disasters associated with environmental crises in the years ahead.

## References

- Australian Emergency Management Institute (2015). People, get ready: Families preparing together. Retrieved August 25, 2015, from [https://schools.aemi.edu.au/sites/default/files/Files/AEMI005\\_PGR%20FPT\\_230914.pdf](https://schools.aemi.edu.au/sites/default/files/Files/AEMI005_PGR%20FPT_230914.pdf).
- Boon, H. J., Brown, L. H., Tsey, K., Speare, R., Pagliano, P., Usher, K., & Clark, B. (2011). School disaster planning for children with disabilities: A critical review of the literature. *International Journal of Special Education*, 26(3), 223–237.
- Gallopín, G. C. (2006). Linkages between vulnerability, resilience, and adaptive capacity. *Global Environmental Change*, 16(3), 293–303.
- GTZ (2006). Disaster reduction: Knowledge, transfer, practice. *Proceedings of the 7th Forum and Disaster Reduction Day*.
- Guha-Sapir, D., Hoyois, P. & Below, R. (2013). *Annual disaster statistical review 2012: The numbers and trends*. Brussels, Belgium: Centre for Research on the Epidemiology of Disasters.
- Gustafson, T. S. (2009). Empowering children to lead change: incorporating preparedness curricula in the K–12 educational system (unpublished master’s thesis). Naval Postgraduate School, Monterey, California.
- Haynes, K., Barclay, J., & Pidgeon, N. F. (2008). The issue of trust and its influence on risk communication during a volcanic crisis. *Bulletin of Volcanology*, 70(5), 605–621.
- Izadkhan, Y. O., & Hosseini, M. (2005). Towards resilient communities in developing countries through education of children for disaster preparedness. *International Journal of Emergency Management*, 2(3), 138–148.
- Johnson, V. A., Johnston, D. M., Ronan, K. R., & Peace, R. (2014a). Evaluating children’s learning of adaptive response capacities from ShakeOut, an earthquake and tsunami drill in two Washington State school districts. *Journal of Homeland Security & Emergency Management*, 11(3), 347–373.
- Johnson, V. A., Peace, R., Ronan, K. R. & Johnston, D. M. (2015). Improving the impact and implementation of disaster education programs for children through theory-based evaluation. Manuscript under review.
- Johnson, V. A., Ronan, K. R., Johnston, D. M., & Peace, R. (2014b). Implementing disaster preparedness education in New Zealand primary schools. *Disaster Prevention and Management*, 23(4), 370–380.
- Johnson, V. A., Ronan, K. R., Johnston, D. M., & Peace, R. (2014c). Evaluations of disaster education programs for children: A methodological review. *International Journal of Disaster Risk Reduction*, 9, 107–123.
- Lea, S. J., Stephenson, D., & Troy, J. (2003). Higher education students’ attitudes to student-centred learning: Beyond ‘educational bulimia’? *Studies in Higher Education*, 28(3), 321–334.
- Mitchell, T., Haynes, K., Choong, W., Hall, N., & Oven, K. (2008). The role of children and youth in

- communicating disaster risk. *Children, Youth and Environments*, 18(1), 254–279.
- Muris, P., Merckelbach, H., & Collaris, R. (1997). Common childhood fears and their origins. *Behaviour Research and Therapy*, 35(10), 929–937.
- Mutch, C. (2014). The role of schools in disaster preparedness, response and recovery: What can we learn from the literature? *Pastoral Care in Education*, 32(1), 5–22.
- NHK World TV (2012). The Kamaishi Miracle [Video documentary]. Japan: NHK World TV. Retrieved on June 13, 2015, from [www.youtube.com/watch?v=5KiyKFEVJKM](http://www.youtube.com/watch?v=5KiyKFEVJKM).
- Norris, F.H., Friedman, M.J., Watson, P.J., Byrne, C.M., Diaz, E., & Kaniasty, K. (2002). 60,000 disaster victims speak: Part I. An empirical review of the empirical literature, 1981–2001. *Psychiatry*, 65, 207–239
- O’Neill, G., & McMahon, T. (2005). Student-centred learning: What does it mean for students and lecturers? *Emerging issues in the practice of university learning and teaching*, 1, 27–36. Retrieved September 3, 2015, from [www.aishe.org/readings/2005-1/oneill-mcmahon-Tues\\_19th\\_Oct\\_SCL.html](http://www.aishe.org/readings/2005-1/oneill-mcmahon-Tues_19th_Oct_SCL.html).
- Plan UK (2010). *Child-centred disaster risk reduction: Building resilience through participation*. London: Plan UK.
- Ronan, K.R. (2015). Advances and continuing challenges towards HFA2 and post-2015: *2015 Global Assessment Report on Disaster Risk Reduction*. UNESCO/UNICEF. Retrieved June 13, 2015, from [www.preventionweb.net/english/hyogo/gar/2015/en/bgdocs/UNICEF%20and%20UNESCO,%202014.pdf](http://www.preventionweb.net/english/hyogo/gar/2015/en/bgdocs/UNICEF%20and%20UNESCO,%202014.pdf).
- Ronan, K.R., & Johnston, D.M. (2001). Correlates of hazard education programs for youth. *Risk Analysis*, 21(6), 1055–1063.
- Ronan, K.R., & Johnston, D.M. (2003). Hazards education for youth: A quasi-experimental investigation. *Risk Analysis*, 23(5), 1009–1020.
- Ronan, K.R., & Johnston, D. M. (2005). *Promoting community resilience in disasters: The role for schools, youth, and families*. New York: Springer.
- Ronan, K.R., & Towers, B. (2014). Systems education for a sustainable planet: preparing children for natural disasters. *Systems*, 2, 1–23. doi: 10.3390/systems2010001.
- Ronan, K.R., Crellin, K., Johnston, D.M., Finnis, K., Paton, D., & Becker, J. (2008). Promoting child and family resilience to disasters: Effects, interventions, and prevention effectiveness. *Children, Youth and Environments*, 18(1), 332–353.
- Ronan, K.R., Crellin, K., & Johnston, D. M. (2010). Correlates of hazards education for youth: A replication study. *Natural Hazards*, 53(3), 503–526.
- Ronan, K.R., Petal, M., Johnson, V., Alisic, E., Haynes, K., Johnston, D. M., & Davie, S. (2014). School curricula, education material and relevant training include disaster risk reduction and recovery. HFA Progress Report – Indicator 3.2. Geneva: United Nations International Strategy for Disaster Reduction.
- Tanner, T. M., Garcia, J., Lazcano, F., Molina, F., Molina, G., Rodríguez, G., Tribunalo, B., & Seballos, F. (2009). Children’s participation in community-based disaster risk reduction and adaptation to climate change. *Participatory Learning and Action*, 54–64. London, UK: Institute of Environment and Development.
- Towers B. (2015). Children’s knowledge of bushfire emergency response. *International Journal of Wildland Fire*, 24(2), 179–189.

- UN/UNISDR (2009). UNISDR terminology on disaster risk reduction. Geneva, Switzerland. Retrieved October 1, 2015, from [www.unisdr.org/we/inform/terminology](http://www.unisdr.org/we/inform/terminology).
- UNISDR (2009). Regional analysis on DRR education in the Asia Pacific region: In the context of priority of action 3 of the Hyogo Framework for Action. Bangkok, Thailand. Retrieved October 2, 2015, from [www.unisdr.org/files/12081\\_RegionalAnalysisonDRREducationinthe.pdf](http://www.unisdr.org/files/12081_RegionalAnalysisonDRREducationinthe.pdf).
- UNISDR (2011, Aug. 11). Lessons save lives: The story of Tilly Smith. [Video file]. Retrieved June 13, 2015, from <http://youtu.be/V0s2i7Cc7wA>.
- United Nations (1989). United Nations Convention on the Rights of the Child (UNCRC). Geneva, Switzerland: United Nations.
- United Nations (2007). Towards a culture of prevention: disaster risk reduction begins at school- good practices and lessons learned. Geneva, Switzerland: International Strategy for Disaster Reduction. Retrieved September 15, 2015, from [www.unisdr.org/files/761\\_education-good-practices.pdf](http://www.unisdr.org/files/761_education-good-practices.pdf).
- United Nations Educational, Scientific and Cultural Organization/United Nations Children's Fund (2012). Disaster risk reduction in school curricula: Case studies from 30 countries. Paris/Geneva: UNESCO/UNICEF.
- United Nations Educational, Scientific and Cultural Organization/United Nations Children's Fund (2013). Towards a learning culture of safety and resilience: Technical guidance for integrating disaster risk reduction in the school curriculum. Paris/Geneva: UNESCO/ UNICEF.
- United Nations International Strategy for Disaster Reduction (2013). *Synthesis report on consultations on the post-2015 framework on disaster risk reduction (HFA2)*. Geneva, Switzerland. Retrieved October 3, 2015, from [www.preventionweb.net/english/professional/publications/v.php?id=32535](http://www.preventionweb.net/english/professional/publications/v.php?id=32535).
- Webb, M., M., & Ronan, K. R. (2014). Interactive hazards education program for youth in a low SES community: A quasi-experimental pilot study. *Risk Analysis*, 34(10), 1882–1893.
- Wisner, B. (2006). Let our children teach us! A review of the role of education and knowledge in disaster risk reduction. *A report by the ISDR System Thematic Cluster/ Platform on Knowledge and Education*. Bangalore, India: Books for Change.
- World Health Organization (2008). Manual for the health care of children in humanitarian emergencies. Geneva: World Health Organization. Retrieved June 14, 2015, from [http://apps.who.int/iris/bitstream/10665/43926/1/9789241596879\\_eng.pdf](http://apps.who.int/iris/bitstream/10665/43926/1/9789241596879_eng.pdf).
- World Health Organization, United Kingdom Health Protection Agency, Save the Children and partners (2011). Disaster risk management for health: Child health. Disaster Risk Management for Health Fact Sheets. Global Platform for Disaster Risk Reduction. Retrieved September 19, 2015, from [www.who.int/hac/events/drm\\_fact\\_sheet\\_child\\_health.pdf](http://www.who.int/hac/events/drm_fact_sheet_child_health.pdf).

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## CHAPTER 3

### LITERATURE REVIEW

*What is essential is to realize that children learn independently, not in bunches; that they learn out of interest and curiosity, not to please or appease the adults in power; and that they ought to be in control of their own learning, deciding for themselves what they want to learn and how they want to learn it.*

~ John Holt (1967), *How Children Learn*

#### 3.1 Introduction

This chapter provides the rationale and theoretical background for the thesis. It goes into more depth and specifics with a review of the literature identifying key studies and clarifying the chosen research gap. It presents a broad overview of DRR education for children. This includes school-based DRR education, community-based DRR learning and CC-DRR. It links this study with existing theories and frameworks.

#### 3.2 Children in DRR

Despite prevailing risks, children have demonstrated the ability to show resilience in the face of a hazard and disaster (Jones, 2008). For example, in 2004, a ten-year-old English girl, Tilly Smith, saved more than a hundred people from a tsunami by warning them minutes before it reached the Maikhao beach in Thailand. Since then, her heroic story has gone viral in interviews, magazines, books (e.g., Ripley, 2009), journals and online (e.g., Wikipedia; YouTube, news channels, etc.). Also, children in El Salvador and the Philippines were documented not only for demonstrating resilience in disaster, but also for their disaster resilience actions. This included activities that ultimately led to protecting their schools from floods, restoration of a mangrove forest, hurricane preparedness and prevention of river erosion (Tanner, Garcia, Lazcano, Molina et al., 2009). Peek (2008) suggests that, based on research to

date, children's vulnerability is reduced and resilience to disaster is increased when they are provided with access to information and resources, including through actively participating in DRR learning activities.

Numerous studies have supported the idea of children as active "agents of change" who can make meaningful contributions to DRR in households and communities (Mitchell et al., 2008; Mudavanhu, 2016; Mudavanhu, Manyena & Collins, 2015, 2016; Rashid, Ronan & Towers, 2016; Towers, 2012). Studies document that innovative ideas and practical experiences of children about their environment can contribute meaningfully to DRR efforts (Back, Cameron & Tanner, 2009). For example, children in Santa Paz, in the Philippines, were successful in relocating their school from a landslide-prone area by lobbying parents and local politicians in spite of opposition from other community leaders (Plan UK, 2010). Children were also documented as taking part in DRR decision-making processes in one of the two sites for the current study in Bangladesh, where they came up with interventions such as tree plantation, boat making, and construction of a bridge which was later implemented by the local community (Back et al., 2009). Thus, based on the findings to date, and on the dual guiding principles of child protection (UNCRC Article 4) and child participation (UNCRC Article 12) (United Nations, 1989), there is a sound rationale for including children in DRR initiatives.

Following this rationale, there is a growing trend in international research towards evaluating child participation in DRR (Lopez, Hayden, Cologon & Hadley, 2012). Several studies have shown that children are able to participate actively in preparedness, response, recovery and rehabilitation phases in their communities (e.g., Haynes, Lassa & Towers, 2010a; Haynes, Lim-Mangada, Akhmady & Roquino, 2010b; Johnson, Ronan, Johnston & Peace, 2016; Mitchell et al., 2009; Nikku, Nepali, Karkara & Ahmed, 2006). That is, active child involvement increases

local ownership, effectiveness and sustainability of DRR programs. Similarly, in Mozambique, through participatory processes children developed greater knowledge of risks, and subsequently took actions in reducing risks within their household as well as at the community level (Back et al., 2009). Likewise, a study conducted in Eastern Samar in the Philippines found evidence that children's agency to enact risk management practices facilitated behavioural change within their communities with the documented bonus of promoting the values of teamwork and camaraderie (Tanner et al., 2009).

However, in addition to education through schools, community-based DRR programs for children (those outside of schools) have also been documented as reducing risk and building community resilience. For example, communities that went through disasters had undertaken active planning for future disaster preparation involving children (Peek, 2008). In the aftermath of a severe earthquake in El Salvador in 2001, several community-based programs were implemented to involve children in DRR (Raftree, Machingaidze, del Valle & Foster, 2003). Following the 2001 Gujarat earthquake, Save the Children UK, in partnership with the Gujarat State Disaster Management Authority, initiated an emergency preparedness program through which 84 children's groups, along with many other children from different villages, were given training on early warning, risk communication, search and rescue activities and even psychological care and trauma. After completing the training, those children shared their learning with their friends and they all helped in developing an emergency response and evacuation plan (Nikku et al., 2006; also cited in Peek, 2008). During the aftermath of a severe 1999 flood in the central provinces of Vietnam, Plan International took an initiative to establish a community-based disaster preparedness model, "Safe Village", where children participated in consultation meetings to express their concerns and share knowledge. As a result of this initiative, children were made aware of the disaster risk, what to do during a disaster, how to

seek help and how to help the other members of family (Laufer, 2002, cited in Peek, 2008).

These programs have shown that children appear to have a strong desire to participate in DRR activities, and this is supported more generally in a recent systematic review (Johnson et al., 2014). However, despite interest, motivation, and documented outcomes for programs that are more participatory (e.g., Webb & Ronan, 2014), “they are often excluded due to dominant norms and cultural values” (Peek, 2008, p. 15). This includes the traditional argument that, since adults have more experience than children, they have greater capacity and responsibility for decision making (Manyena, Fordham & Collins, 2008; Penrose & Takaki, 2006). Consequently, in DRR programs where children are reported as “invaluable assets and partners”, in most cases they are forced to “play a subordinate role to adults” (Manyena, Fordham & Collins, 2008, p. 323). Moreover, values and norms vary over cultures and societies and influence children’s vulnerabilities, their perception of disaster risk, the capacity for DRR and participation in DRR programming (Haynes et al., 2010a). Hence, a ‘one size fits all’ concept certainly does not suit DRR education programming for children.

Ronan and Johnston and colleagues’ research (see reviews by Johnson et al., 2014b; Ronan et al., 2015, 2016) present evidence to advocate that children who are exposed to school-based DRR education programs have more realistic risk perception, increased accurate knowledge of hazards, reduced levels of anxiety and fear, and increased preparedness at both individual and household levels, compared to their peers. More recent research that tested enhanced child and youth participation found enhanced benefits, including in knowledge, but also in more action-based outcomes, including child planning and practice and parent-reported household preparedness activities (Webb & Ronan, 2014). Similarly, Mitchell et al. (2008) found that children actively participating in DRR programs, understand and respond more effectively to

disasters, and have higher levels of confidence in promoting and using for DRR strategies. Supporting engaging children in DRR education programs even at early ages, Back et al. (2009) argued that investing in children's DRR education, particularly the sort that promotes "participatory education", can generate long-term benefits. Active learning and practising DRR at an early age are considered to embed essential values, knowledge and skills that can be used but also integrated at later life stages, including into adult life. Thus, an outcome of child participation in DRR is thought to be the advancement of a reduction in current risks coupled with a cohort of resilient citizens in the future.

### **3.3 Role of School in DRR Education**

Although this research is focused on DRR education for children, it is also important to reflect on the world views on 'education' itself. This research has been inspired by Paulo Freire views on education (1968, p. 315):

Education either functions as an instrument which is used to facilitate integration of the younger generation into the logic of the present system and bring about conformity or it becomes the practice of freedom, the means by which men and women deal critically and creatively with reality and discover how to participate in the transformation of their world.

Thus, observing two forms of education, Freire draws a contrast between them: education as a practice of domination, which he calls "banking education" *versus* education as a practice of freedom, or "problem-posing education." The Freirean spectrum of the banking concept explains how education is utilised by those holding power to exercise their own control. That is, most often, authorities and teachers who desire to uphold power and control over children handle teaching in such a way that learning is like a bank: treating children as passive objects,

teachers tend to control their thinking process and actions, and thus nurture a system of oppression. In contrast, the goal of the problem-posing concept is to transform the structural oppression: it implies a learning practice that treats children as active subjects or citizens, and allows them to develop their own powers to critically understand the world around them – both teachers and children, or, in Freire’s words, “educator” and “educand” (which he uses to suggest a balanced power relation between teachers and students), get to learn from each other. This creates opportunity for children to become independent thinkers by breaking free of the oppressive, and controlling nature of the traditional education system. Therefore, when designing DRR education programs for children, it is important to consider an approach that will allow children to become critical thinkers and act independently.

Research suggests that school-based programs that specifically target children and youth, have the potential to bring perhaps the greatest DRR impact within communities (Peek, 2008; Ronan, Crellin, Johnston, Finnis, Paton & Becker, 2008). The idea is that, as schooling is compulsory (primary education tends to be compulsory worldwide), children are typically accessible through school. When children are taught about DRR topics, and guided to interact, research confirms that they will share that knowledge with their families and the larger community, ultimately promoting positive change (Habiba, Abedin & Shaw, 2013; Peek, 2008; Plan UK, 2010; Ronan & Johnston, 2001, 2003; Shiwaku & Fernandez, 2011, Shiwaku, Shaw, Kandel, Shrestha, & Dixit, 2006, 2007; Webb & Ronan, 2014; Wisner, 2006).

Traditionally, DRR education programs are delivered sporadically in classroom and school settings (Ronan, 2015). Such programs seek to build DRR knowledge and awareness among children (Tatebe & Mutch, 2015). Research suggests that the scope of the traditional DRR education system is limited within the space of the school curriculum and more traditional

classroom-based learning strategies (Ronan, 2015; Selby & Kagawa, 2012; Towers, 2012). Selby and Kagawa (2012) identified a set of student-centred learning modalities in case studies of DRR education programs in 30 countries that promote child- and youth-focused DRR curricula. They found an extensive reliance on textbook-based learning in most of these countries (see also examples in Ronan, 2015). Such an approach may yield benefits, but may not be the most effective teaching and learning pathway for inculcating children's disaster preparedness and mitigation values, knowledge and, more particularly, skills (Selby & Kagawa, 2012). For example, as found in a study on a drills-based education program, learning and drilling appeared to be through more of a rote *versus* interactive approach (Johnson, Ronan, Johnston & Peace, 2014a). At both pre- and post-test stages, findings showed that almost all children in the DRR education and drills-based program knew the most important protective behaviour (duck, cover, hold under a stable object). However, these students also endorsed a number of other behaviours (e.g., running outside) that would put them at increased risk (Johnson et al., 2014a).

In addition to knowing *what* to do (duck, cover, hold), children (and adults) also need to know *why* a particular DRR message is important, as well as how to enact that set of behaviours under various conditions: children need to learn not only the 'what' in relation to DRR (e.g., key safety and risk reduction behaviours), they also need to know the 'why' and the 'how' (Rashid, Ronan & Towers, 2016; Towers, 2015). In their study of cyclone awareness and preparedness among North Queensland-based school students, Berry and King (1998) observed that they had "very limited real understanding of cyclones and the storm surge risk" (p. 28), including limited "direct personal experience" (p. 26) and inadequate knowledge on cyclone preparedness. They also identified that the parents' perception of cyclone risk was biased and inaccurate (Berry & King, 1998).

While investigating children's risk perceptions, disaster preparedness and levels of participation in a school in Christchurch, New Zealand, Finnis et al. (2004) observed that, although the children's knowledge about local hazards was "fairly accurate", and it was "well known" about some "safety behaviours" (p. 19), it was not "as well known" as to other behaviours (Finnis, Standring, Johnston and Ronan, 2004, p. 19). The study also identified that the children's families were not able to adopt and practise the home-based preparedness plans accurately (Finnis et al. 2004, p. 18).

After reviewing hazard education in Australian schools, Dufty (2009) recommended that, to get the best outcomes from a school-based hazards education program, it should be designed as a 'package' for community education and implemented as a community hazards education plan rather than a mere school education plan. In recommending the basics to consider for the school DRR education programs, Ronan and Johnston (2005, pp.163-165) advocated the following aspects based on research and theory:

- Incorporate a "graduated sequence" of learning into school curricula.
- Merge the raising concern of local hazards "with a confident, coping model."
- Endorse participatory learning approaches, including in and out of the classroom (e.g., interaction between parents and children such as home-based discussion, activities for doing children and parents together and making family emergency management plans).
- Promote a DRR perspective focusing on prevention, mitigation, preparedness, response and recovery.
- Utilise natural opportunities for learning (e.g., field trips to local sites, emphasising local hazard events).
- Use interactive, participatory demonstrations (i.e., by DRR/emergency management

practitioners) and use of computers, web-based and visual aids (e.g., age-appropriate documentaries, animation).

- Regular practice of preparedness activities and response planning using “in-and out-of-class” simulations.
- Encourage community-based activities by promoting the school education program in the community (e.g., community-based hazards discussions and “hazards-doings”).
- Integrate school DRR education programs with other existing community-based programs.

Overall, based on research and evidence to date, there is a sound rationale for teaching children DRR knowledge and developing their resilience and skills through active and interactive learning approaches by bringing schools, households and communities together. However, the school system does not allow genuine participation of children (Ball, 1990), because, the school environment promotes power imbalance through the dominant position of the adults as teachers over children as students, together with the adult-designed curriculum (Millei, 2005). This is what Foucault also asserted: “any system of education is a political way of maintaining or modifying the appropriation of discourses, along with the knowledges and powers which they carry” (1971, p. 64). Hence researchers seek “alternative avenues” within the current system which can be utilised to empower children and foster better learning (Millei, 2005). But this will require inclusion of creative techniques and participatory methods in the school system classroom environment, that is, “methods, ... the interplay of rules and definitions, of techniques and tools” (Foucault, 1972, p. 222). Likewise, in regard to DRR education, research suggests that, if children’s opinions and views are considered through participatory, interactive learning, such programs can confer added benefits on children themselves as well as their households and the larger community (Haynes et al., 2010a, 2010b; Kagawa & Selby, 2013; Peek, 2008;

Ronan, 2015; Ronan & Johnston, 2003; Selby & Kagawa, 2012; Tanner & Seballos, 2012; Towers, 2015; UNESCO/UNICEF, 2013; Webb & Ronan, 2014). Therefore, this research aims to include children's 'voices' to evaluate DRR education so that children can be involved in further developing and delivering of DRR education programs including CC-DRR.

### **3.4 Beyond Traditional DRR Education Program: CC-DRR**

With a view to increasing children's understanding of disaster risks in their community, developing their ability to take a more active role in reducing those risks, and enhancing their resilience, international child rights agencies have developed a child rights approach to DRR that is known as Child-centred Disaster Risk Reduction or CC-DRR. CC-DRR is a child rights-based, flexible approach. It combines both child-focused (for the children) and child-led (by the children) activities in innovative program design. This approach actively engages children in programs along with their families, communities, NGOs, governmental organizations, emergency management (EM) agencies, and local and central governments (Benson & Bugge, 2007; Kagawa & Selby, 2013; Towers, Haynes, Sewell, Bailie & Cross, 2014; UNICEF, 2011; Plan UK, 2010). CC-DRR involves "consulting" with children about their understanding of disaster risks coupled with providing them with access to information so that they can understand the impact of hazards and disasters on their rights and opportunities (Hanes et al., 2010; Lopez et al., 2012; Towers, 2015; Towers et al., 2014). The choice of words applies to this research, because "consulting/consultation with children" raises the question about genuine participation of children in CC-DRR.

However, ideally, the goal of CC-DRR is to increase children's understanding of disaster risks in their community and develop their capacity to take an active and a lead role in reducing those risks (Benson & Bugge, 2007; Towers, 2012). CC-DRR also aims to empower children

with a voice in a larger, multi-stakeholder approach to DRR, so that their specific vulnerabilities and capacities can be recognised by adults (Towers et al., 2014). Hence the idea is to bring together children on the frontline with parents, teachers, the community, Emergency Management (EM) agencies and government. Thus CC-DRR looks at disaster risk reduction through a holistic, systemic lens.

Over several years, CC-DRR has become very popular among development and humanitarian organisations, including Plan International, World Vision, Save the Children, UNICEF and Red Cross. This is reflected in recently developed initiatives in several sectors, including DRR education, school emergency management, and various community-based programs (Towers, 2012). In contrast to traditional curriculum-based DRR programs, CC-DRR incorporates children as genuine stakeholders, fostering their direct participation in DRR understanding, learning and skill-building (Towers et al., 2014). In so doing, CC-DRR promotes a shift from children seen as passive victims of disasters to children being seen as agents of change for DRR (Haynes et al., 2010a, 2010b; Plan UK, 2010; Towers et al., 2014). Unlike the ‘top-down’ approach that dominates general school-based DRR education, principles underpinning CC-DRR are guided by increased emphasis on a ‘bottom-up’ approach (Wisner, 2006). These principles emphasise the fundamental importance of including those who are at risk as actual participants in decision-making, planning and action (Haynes et al., 2010a; Towers, 2015).

CC-DRR is supported by a growing literature that support positive impacts on children’s knowledge, skills, capacities for action, and active participation in community DRR (Benson & Bugge, 2007; Haynes et al., 2010a; Johnson et al., 2014a; Plan UK, 2010; Selby & Kagawa, 2012; UNICEF, 2011; UNESCO/UNICEF, 2013; Ronan, 2015; Ronan, Petal, Johnson, Alisic et al., 2014; Tanner & Seballos, 2012; Towers et al., 2014). With more than 2.2 billion people

under the age of 18 across the world, successful implementation of effective CC-DRR initiatives is thought to have major potential for ensuring child rights and DRR at family, local, national and international levels (Ronan, 2015; Towers et al., 2014; Haynes et al., 2010a, 2010b; Plan UK, 2010).

### **3.5 Research Gap: Impact and Implementation**

There has been a recent surge in research in DRR education for children. Across more than 40 studies on DRR education for children published to date in the scholarly and grey (non-scholarly) literature, only a handful are found to use rigorous designs, many of them using one-off cross-sectional approaches (Johnson et al., 2014b; Ronan et al., 2014; Ronan, 2015; Ronan et al., 2015). The research grounding of CC-DRR is largely within grey literature: as CC-DRR programs have been designed by non-formal educators like NGOs and EM agencies, literature on CC-DRR is primarily based on the evaluation of programs largely in the form of annual reports, government reports, internal studies and white papers (Cadag & Gaillard, 2012; Johnson et al., 2014b).

Johnson et al. (2014b) conducted a systematic research on 35 studies on DRR education for children. Their research involved quantitative, quasi-experimental evaluation of program impact, as well as qualitative, mixed methods evaluation of program implementation. The major findings of the review were:

- i) 40% of available literature on DRR education for children is found in the grey literature (e.g., as NGO reports).
- ii) Though disaster education programs for children and youth are mostly designed and implemented by non-formal educators such as development and EM agencies, evaluation literature largely remains within the domain of scholarly

scientists who are not directly involved in the development and implementation of such programs. As a result, it remains unclear whether, and to what extent, evaluation research is being applied in program improvement, especially since most of the studies stated that the programs were effective in spite of limited measures regarding outcome and impacts.

- iii) Most of what is regarded as the effectiveness of DRR education programs for children has been determined by the outcome of quantitative research with children designed to measure children's knowledge and safety behaviours, and in scarce cases, child reports of preparedness activities. Although it has been common to involve children as research participants, children's parents, teachers or community members have been less likely to be incorporated. That is, the effectiveness of children's participation in DRR education programs has largely been determined by child reports, and mostly focused on knowledge-based education and outcome indicators.
- iv) Most studies have adopted 'quasi-experimental', 'correlational' and 'descriptive' designs and used 'written questionnaires' for data collection, almost all using a predominance of 'multiple-choice or Likert-type scale' questions. Thus, these studies typically have concluded that, programs had been effective, based on the quantity of children's correct answers to survey questions. Correlational studies were cross-sectional, and despite no time series data, concluded that effective outcomes (e.g., household-level disaster preparedness) were associated with children's exposure to disaster education programs.

- v) While these studies indicate “valuable knowledge change”, they do not necessarily provide empirical evidence of how, or the extent to which, disaster education programs enable children to play active roles in household disaster preparedness, self-protection skills, or the likelihood of education programs conferring longitudinal benefits.
  
- vi) Many of the studies have been identified as having “significant methodological limitations.” These include lack of articulation of the components of the program under scrutiny, limited outcome indicators, small sample size, and lack of baseline data or a control group. Mixed method designs, and qualitative methods, in general, were uncommon.

Thus, in addition to the need for identifying and assessing an increased array of meaningful outcome indicators, Johnson et al. (2014b) recommended improved design and methodological rigour in future research on DRR education for children.

After Johnson et al.’s (2014b) review study, a few more additional reviews have been published on DRR education for children. Most recently, Ronan et al. (2015) reviewed 40 studies. This study identified two more major limitations in the literature: a) although a majority of the studies reported ‘mostly positive’ outcomes of the DRR education program, measurement of impact/outcomes was limited to short-term timeframes; b) in terms of positive outcome, the studies to date did not identify the explicit elements of the programs responsible for generating specific positive outcomes (Ronan et al., 2015). Thus, while research supports the potential of DRR education, Ronan et al. (2015) recommend that long-term, rigorously designed, multi-informant research is needed in “efficacy and effectiveness terms” (p. 7) to learn “which

specific ingredients (program elements) are responsible for producing which benefits” (p. 3) over time.

Most recently, Amri et al. (2016) conducted research on child DRR education programs in Jakarta using a mixed methods approach. Instead of evaluating the programs by only surveying children’s views like most previous studies, they used a multi-informant approach that involved stakeholders from several sectors, including child and youth participants, school personnel and NGOs. In this initial study to inform a larger CC-DRR-focused study, the majority of the children who had been involved in some form of DRR education were found to be highly confident to face hazard and disaster (94%) and aware of the hazards surrounding their community (79%) and schools (62%). On the other hand, the results of a knowledge test indicated poor-to-moderate levels of DRR knowledge. However, the study found that almost all of the children (94%) were eager to know more about safety issues and be involved in education programs and DRR decision-making. The study built on previous research (e.g., Johnson et al., 2014c), explored a number of barriers to the implementation of DRR programs for children. For example:

- **Sustainability:** Since DRR programs for children are mostly implemented by NGOs/EM agencies, many of these organisations do not have a permanent office at the local (or district) level, and also lack visions or strategies for ensuring sustainability in the local context. As a result, when the program ends, the office is closed, and staff are relocated. The government’s monitoring system also does not evaluate implementation and effectiveness of their programs. Hence these programs end when their specific projects are closed. Similar findings in the Australasian context indicate limited implementation of a DRR program provided to every school in New Zealand (Johnson

et al., 2014b)

- **Funding and curricula limitation:** As NGOs have limited funding, their initiatives are usually “limited to delivering singular activities *versus* more comprehensive packages of education” (Amri et al., 2016, p. 15). Replicating New Zealand findings (Johnson et al., 2014c), a crowded curriculum was also identified as an obstacle to implementation of DRR education in school.
- **Teachers’ capacity:** Though the quality of disaster education greatly depends on teacher eagerness, skills and creativity, a lack of training for teachers in delivering programs was reported by the teachers themselves as a major implementation obstacle. By contrast, teachers expressed interest in the idea of delivering these programs (see also Johnson et al., 2014c).
- **Lack of political will:** As programs are implemented by the NGOs, a lack of policy or political will from the government was considered to be an obstacle to the sustainable implementation of such programs in schools. In New Zealand, despite a DRR education program being provided to every primary school, it is voluntary. Thus, while providing resources is useful, better follow-up support to encourage and facilitate implementation in the classroom and school setting appears to be important (Johnson et al., 2014c).

Reviewing past and present approaches to child participation in DRR, Mayo (2001) concluded that DRR programs often suffered from tokenistic participation: children are said to be given a voice, but left with little or no choice about the subject matter and style of communication. The recent evaluation of CC-DRR programming in Bangladesh and the Solomon Islands indicates serious issues regarding lack of child participation in all levels of CC-DRR programs: designing, delivery and evaluation (Hayes, 2016). Hayes (2016, p.19) also reports “tokenistic” attendance of children where “children are involved but their views and opinions are not taken

into account by adults.” Such approaches still prevail due to the fact that, within the worldwide cultural practice of adult domination, this is how the adult perceives the meaning of giving a voice to children (Mayo, 2001). Penrose and Takaki (2006) asserted that, as children constitute a major proportion of the world population, including a large part of disaster-affected individuals, undermining children’s capacity means ignoring the capacity of an entire community. Therefore, if the imposed cultural pressure is not recognised in DRR programming for children and associated research, the whole point of child participation is going to be missed in creating disaster-resilient communities (Manyena, Fordham & Collins, 2008; Mayo, 2001; Peek, 2008; Penrose & Takaki, 2006).

Yet there is also a significant influence of the socio-economic and cultural setting on how a DRR education program may be fitted within a particular social setting. Haynes et al. (2010a) examined the influence of culture on children’s conception of disaster risk, their capacity for risk reduction, and their participation in DRR activities, which varied across communities, and suggested that DRR programmes for children should be designed according to the socio-cultural contexts relevant to the children’s society. Hence, in planning and designing an effective CC-DRR program, socio-cultural context is as important as the physical and technological factors. Hayes (2016) also expresses concern regarding gender balance in CC-DRR programs, mainly due to socio-cultural norms in Bangladesh context. Benadusi (2014) suggested that, for the sustainable implementation of any DRR education programme for children, it must take into account the set of socio-cultural elements such as language, social rituals and behaviours, religious practices, indigenous knowledge and beliefs, social representations of hazards and disasters, and, above all, the ontologies of nature that are incorporated at “the local level, and the systems of territorial management.” This means that research findings on DRR education for children based in one country or region may not

represent another country or region. Therefore, for sustainable implementation of DRR education programs, more research is needed in differing geographical and socio-cultural settings.

Thus, based on research and reviews, more rigorous and empirical research is required on the extent of child participation, sustainability and socio-cultural appropriateness of DRR education for children. Therefore, this study aims to conduct rigorously designed research on DRR education for children, focusing on CC-DRR and school DRR, by involving children's active input and participation. In so doing, it aims to identify the specific elements of DRR education programs for children that produce the best DRR outcomes and child participation. A further aim is to examine implementation factors, including those structural and process factors that facilitate *versus* impede sustainable implementation of such programs in school and community settings.

### **3.6 Theoretical Perspectives**

A theoretical perspective is an assumption which explains a person's attitude to the world and social life. Incorporating a theoretical perspective into research provides a context to the research approach and a foundation for methodology (Crotty, 1998). Therefore, including a theoretical perspective is fundamental to research. This research embraced two theoretical perspectives which are distinct yet complementary: a) activity theory (Engeström, 1987) and b) New Sociology of Childhood (James & Prout, 1990). The principles and their implications are explained below.

#### **3.6.1 Activity Theory**

For this research, questions may arise as to what theory would be most useful in understanding

the implementation process of DRR education program for children. Many researchers have suggested learning practices which promote resilience in the context of social interventions (Armitage, Marschke & Plummer, 2008; Blackmore, 2007; Blackmore, Ison & Jiggins 2007; Ison, Roling & Watson, 2007; Pahl-Wostl & Hare, 2004; Plummer & FitzGibbon, 2007; Krasny & Tidball, 2009; Krasny, Tidball & Sriskandarajah, 2009; Tidball, Krasny, Svendsen, Campbell & Helphand, 2010). Working from an individualistic approach, these scholars have explored learning as a group or an organisational process (Diduck, 2010; Krasny & Roth, 2010): they have advocated for learning as an outcome of collaboration and participation of individuals as group, rather than as a single person (Armitage, Marschke, & Plummer 2008). The roots of such a learning approach are based on Activity Theory (Engeström, 1987), which is grounded on Vygotsky's idea of "socio-cultural psychology" that considers learning as an outcome of learner's interaction with others (people and objects) in a collaborative setting (Vygotsky, 1978). Engeström (1987, 1996) considers human beings as socioculturally embedded actors whose learning outcomes result in motivated human actions in a collaborative environment (i.e., organisation, program, etc.). Thus, Activity Theory provides a framework which is rather a tool not a process for a learning system (Krasny & Roth, 2010).

Engeström (2001) describes three generations of Activity Theory, starting with the pioneering efforts of Lev Vygotsky. Vygotsky (1978) challenged the existing concepts of learning by identifying the significance of socio-cultural influence on the learner/child in the learning process. The next major shift in Activity Theory was carried out by Leont'ev (Vygotsky's student) who shifted the focus from the individual learner to "collective activity" (Engeström, 2001). In the 1970s, as Engeström (2001) describes, once the concept of learning through "collective activity" spread to the West, new perceptions emerged, including the concept of internal conflicts, diversity and discussion among the actors of different viewpoints within an

activity system. The idea of networks of interacting activity systems also emerged during this period. This paved the way for a third generation of Activity Theory.

Activity Theory today is based on the idea that human beings learn by engaging in productive activities, and through those activities they also change and improve their society (Krasny & Roth, 2010). In an activity system, these activities lead toward the object for generating outcomes being affected by the tools, rules, community and division of labour. However, none of these aspects can be considered as individual elements but rather as a single, interconnected organism functioning by means of their mutual interactions with each other within the whole activity system (Engeström, 1987). Thus, Activity Theory establishes a conceptual framework for an activity system of an organisation or program. Activity Theory perceives the whole work or activity as the unit of analysis, in which the activity is classified into six specific analytical components (Engeström 1987, 1996, 1999, 2001). Existing within an activity system, these components act in the system as a process and interact with and influence each other.

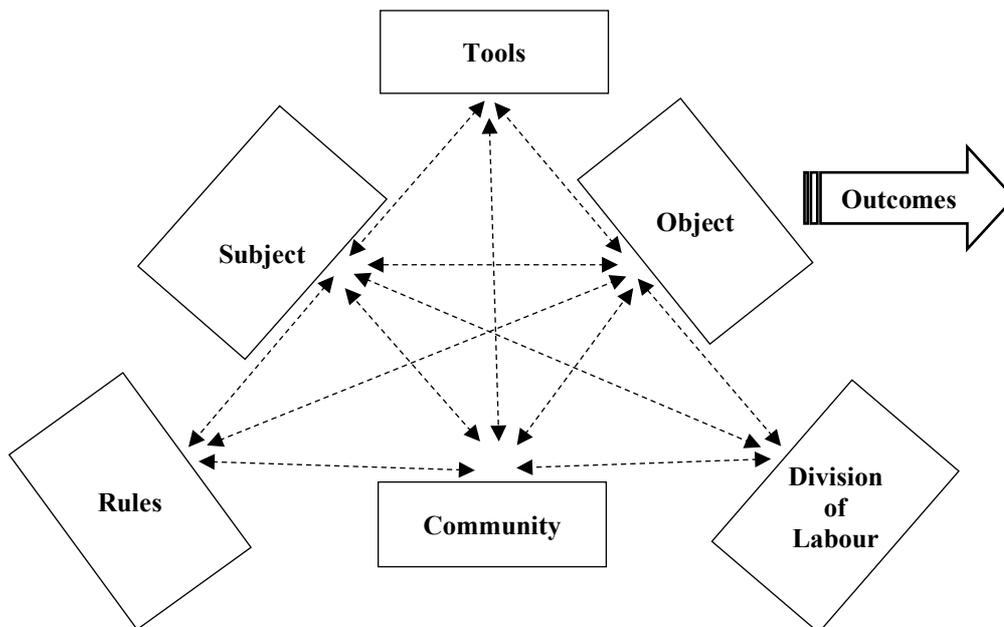


Figure 3.1. Framework of Activity Theory (adapted from Engeström, 1987)

- **Subject:** The actors or participants engage in the activities in the system; hence, the subject in the activity theory is an individual or a group who does the action. In the activity system, the subjects work towards the object of a system.
- **Object:** In the activity system, the object stands both for an *objective* as a goal or common task of the subjects, and as *objects* as individuals in a passive state (i.e., those work towards achieving the goal).
- **Rules:** Instructions, guidelines and procedures regulating activities in the system.
- **Tools:** In an activity system tools refer to the procedures, norms and conventions that make the members behave and act in a particular way. Tools are influenced by social and cultural practice. Tools influence both the people and the structure in the activity system.
- **Community:** The social context; all participants or actors engaged in the activity system.
- **Division of labour:** Between the members in the community there is a division of labour which indicates the hierarchical structure of activity, the distribution of activities, and shared responsibilities of the community in the system.

Thus, activity is *the* “minimum meaningful context” for understanding “individual action” (Kuutti, 1996). To clarify this paradox, Kuutti (1996, p.25) borrowed Leont’ev’s (1978) famous example of primitive hunters (psychological reflection and collectiveness of labour):

For their collective hunting, primitive hunters would divide into two groups. While one group would be beating the bush to scare the animals, the other group would be trapping the scared animals and finishing the hunting. If taken out of the larger activity of hunting process, the action of the individuals performing bush beating would be incomprehensible. But they can be only understood as part of the larger system of

hunting activity.

In short, activity theory advocates that learning takes place through the collaboration of the learners with other elements within the mechanism of the activity system. On the other hand, as Engeström (1999, 2001) asserts, every activity system has *multi-voicedness* characteristics. Engeström (2001) further claims that the events in an activity system are “characterized by ambiguity, surprise, interpretation, sense making, and potential for change” (p. 134). That is, in an activity system, there can be multiple smaller activity systems which together function as a larger activity system. Moreover, an activity system may overlap with another activity system and/or the outcome generated from one activity system can also help another system for achieving better outcomes.

Activity Theory has influenced theoretical perspectives in diverse research fields, including education, psychology, management, information technology, cultural behaviour, resilience and environmental education (Grifford & Enyedy, 1999; Liaw, Huang & Chen, 2007; Nardi, 1996; Verenikina, 2001; Zurita & Nussbaum, 2007; Engestrom & Kerosuo, 2007; Krasny & Roth, 2010; Holt & Morris, 1993). Although Engeström (1987, 1996, 1999, 2001) did not claim that Activity Theory offered any ready-made techniques for research, with its extensive application Activity Theory has become a well-recognised practical framework for research involving complex organisational practices. Hashim and Jones (2007) stated that gathering information (i.e., by observation and interview) can reveal the “explicit aspects of the participant’s actions” but is often unable to explore the “implicit motivation of actions and operations”; but it is likely to gain understanding of actions and goals when analysed in relation to their motivation. Hence Activity Theory can help researchers examine human actions as a hierarchical phenomenon by relating them to six dimensions of the activity system: subject,

object, rules, tools, community and division of labour (Hashim and Jones, 2007; Nardi, 1996).

The prevalent application of Activity Theory has generated some best practices for researchers:

- The activity must be studied in real-life practice (Kuutti, 1996).
- A qualitative approach is highly recommended (Hashim & Jones, 2007; Jonassen & Rohrer-Murphy, 1999; Nardi, 1996; Sam, 2012).
- A long timeframe of research is necessary (Jonassen & Rohrer-Murphy, 1999).
- Researchers need to focus on the “broad patterns of activity before considering narrow episodic fragments” (Jonassen & Rohrer-Murphy, 1999).
- The research needs to utilise a range of different data collection methods involving different participants, and the researcher must be committed to exploring the activity system from all of the perspectives (Hashim & Jones, 2007; Jonassen & Rohrer-Murphy, 1999; Sam, 2012).

### **3.6.2 The New Sociology of Childhood**

The theoretical perspective that formulates the ground for this study is “the new sociology of childhood” (James & Prout, 1990). This perception is built on the underlying foundation of Hardman’s work. While doing an anthropological study on children, she compared it to the study of women, arguing that “both women and children might perhaps be called “muted groups”, i.e., unperceived or elusive groups (in terms of anyone studying a society)” (1973, p. 85). This statement is fully apposite to the domain of disaster research, where children are generally ignored in the research agenda (Anderson, 2005). Within the DRR domain, studies tend to focus on children, and typically adopt a positivistic approach (Towers, 2012). Johnson et al. (2014a) observed that the evaluative studies of DRR education have predominantly used quantitative methods such as surveys and Likert-scale questions to measure children’s DRR knowledge. But they confirm that use of such methods delineates children’s own expression of their understanding and knowledge (Johnson et al., 2014a). The New Sociology of Childhood

challenges the positivist approach by considering children as “people to be studied in their own right, and not just as receptacles of adult teaching” (Hardman, 1973, p. 87). It links with the symbolic interactionist concepts of children as “agents” in, and at the same time, “products” of, social processes (Blumer, 1969). It also underlines social constructionist philosophy: the meaning of childhood is constructed socially, culturally and historically (Walkerdine, 2008). The fundamental principles of the New Sociology of Childhood are (James and Prout, 1990):

- a) While children’s biological immaturity is a universal phenomenon, childhood itself is a “social construction”. Therefore, the way childhood is conceptualised in philosophies and practices differs across cultures and over time.
- b) Childhood is not a single entity of social enquiry and thus inseparable from other variables such as gender and ethnicity. Therefore, domineering Western notions of a ‘universal’ childhood are unacceptable.
- c) Children’s independent views and opinions are worthy of study in their own right without being influenced by adult perspectives. The New Sociology of Childhood emphasises creating opportunities for children to have their views expressed in their own words, and their voice heard in their own way.
- d) Children should be perceived as actively engaged in the construction of their own social lives and surroundings. Children, therefore, cannot be considered passive subjects of social organisms.
- e) Qualitative methods, such as focus groups and participant observations, are particularly useful for research with children by allowing them to express their ideas and opinions, rather than quantitative methods such as surveys and experimental techniques.
- f) Research should focus on proclaiming a new paradigm of childhood by emerging from the dominant Western notion of a ‘universal’ childhood, and engaging more in, and responding to the process of recreating childhood.

Hence the fundamental principles of the New Sociology of Childhood provide strong ground for involving genuine participation of children in research

### **3.7 Child Participation in Research: Four Perspectives**

It is essential that research, which seeks to construct knowledge concerning children's lives and childhood, should keep an approach that serves the best interests of children (Alderson & Morrow, 2011; Fraser, Lewis & Ding et al., 2004; Kellett, 2011). Christensen and Prout (2002) identified four approaches or perspectives in the ways children are treated in research: a) the child as object (Christensen, 1998; Christensen & James, 2000); b) the child as subject (Christensen, 1998; Christensen & James, 2000); c) the child as social actor (Christensen, 1998; Christensen & James, 2000); and d) the child as participant and co-researcher (Alderson, 2000; Woodhead & Faulkner, 2000). While the first two approaches form an enduring social science convention, the latter two have a more recent role.

The most traditional 'child as object' approach considers children dependent and vulnerable beings, and thus neglects their entity as subjects acting in the world. Therefore, in this approach, children's lives and wellbeing is studied through adult perspectives, acquiring accounts of caregivers, e.g., parents and teachers.

The 'child as subject' approach acknowledges children as persons with subjectivity, and takes this as its starting point (see Woodhead & Faulkner, 2000, for examples). However, Christensen and Prout (2002) argue that, within this orientation, a child's involvement in research is conditioned by judgements about their cognitive abilities and social competencies.

The third approach, the 'child as social actor' considers children as social actors with their

individual knowledge and experiences. It does not differentiate between adults and children. A general aspect of this approach is that children are provided with central and autonomous conceptual status (Corsaro, 1997; Prout & James, 1990; Thorne, 1993).

The fourth perspective, the 'child as the participant and co-researcher', goes one step further from the child-as-social-actor approach by incorporating children as active participants in the research process, just as children are in social life (Alderson, 2000; Thomas & O'Kane, 1998). This approach is in line with the UN Convention on the Rights of the Child (CRC), particularly those sections emphasising their rights to participation (United Nations, 1989). The CRC states that all actions, including research, that influence children's lives, must be built on considering children as active citizens. It advocates that children are informed of, consulted on, and involved in social and institutional practice and research, and their voice is accordingly heard. Thus, the 'child as the participant and co-researcher' approach is also parallel to the New Sociology of Childhood, which views research with children as a co-production contributed to by both the researcher and informants. Thus, according to this conceptual perspective, children should be increasingly become involved as co-researchers in research projects.

It is therefore evident that a researcher's own perspective on children has important implications on their research, because the searcher's personal perception influences their choice of research methods, including their role, data analysis and interpretation, as well as ethical considerations (see Evans & Fuller, 1996; Clark & Moss, 2001; Sheridan & Samuelsson, 2001; Wiltz & Klein, 2001; Einarsdóttir, 2003, 2005a, 2005b; Warming, 2005). Thus, as Einarsdóttir (2007) pointed out, children, just like adults, have their own views and perspectives, and are able to speak for themselves, and participate and contribute in the research side-by-side with the researcher if the right methods are used. However, using different

qualitative methods are found to be more effective in engaging children as active participants in the research (see, for instance, Barker & Weller, 2003; Darbyshire, MacDougall & Schiller, 2005; Einarsdóttir, 2007). This study therefore considers children as active social beings, and is focused on using qualitative methods to create an environment that fosters active participation of children, and empowers them as co-researchers.

### **3.8 Conclusion**

This chapter has provided a broad overview of DRR education for children, including school-based, community-based and child-centred DRR programming. It has identified the key literature and clarified the research gap. The review of the literature suggests clear opportunities for rigorously designed research on DRR education for children. While a study on DRR education of children by engaging children as co-researchers is fully aligned with the ethical and moral ground of child rights, it is also strongly grounded on established theoretical assumptions: Activity Theory and New Sociology of Childhood. The following chapter introduces the reader to the circumstances and environment of the study setting so that they can relate to the findings of the research by providing a succinct background on disasters, children and the school education system in Bangladesh.

## CHAPTER 4

### BANGLADESH: VULNERABILITIES AND DISASTER RISK REDUCTION

সাবাস, বাংলাদেশ, এ পৃথিবী  
অবাক তাকিয়ে রয়ঃ  
জ্বলে পুড়ে-মরে হারখার  
তবু মাথা নোয়াবার নয়।

~ সুকান্ত ভট্টাচার্য (১৯৪৮), দুর্মর

*(Bravo Bangladesh!  
The world is amazed!  
Fired, burned, died and destroyed  
But never gave up!)*

~ Sukanta Bhattacharya (1948), Durmar

#### 4.1. Introduction

The field-level research of this study was conducted in Bangladesh. This chapter provides a succinct background on hazards, disasters, children and the school education system in Bangladesh. The goal is to introduce readers to the circumstances and environments of the study setting so that they can relate to the findings of the research.

#### 4.2. Bangladesh: An Overview of Disasters and Their Causes

Globally Asia is considered to be the most vulnerable region, accounting for 70% of total disaster- affected people (International Federation of Red Cross and Red Crescent Societies, 2018). Situated in the South of Asia within the Ganges-Brahmaputra Delta (Rogers & Goodbred, 2014), Bangladesh is widely regarded as one of the most disaster-prone nations. Between 1980 and 2010, 234 disasters killed almost 200,000 people, and caused over US\$17 billion in damage (Guha-Sapir, Hoyois & Below, 2015). Studies suggest that 97.1% of the land area, and 97.7% of the population is at risk of multiple disasters (UNICEF, 2014). While the

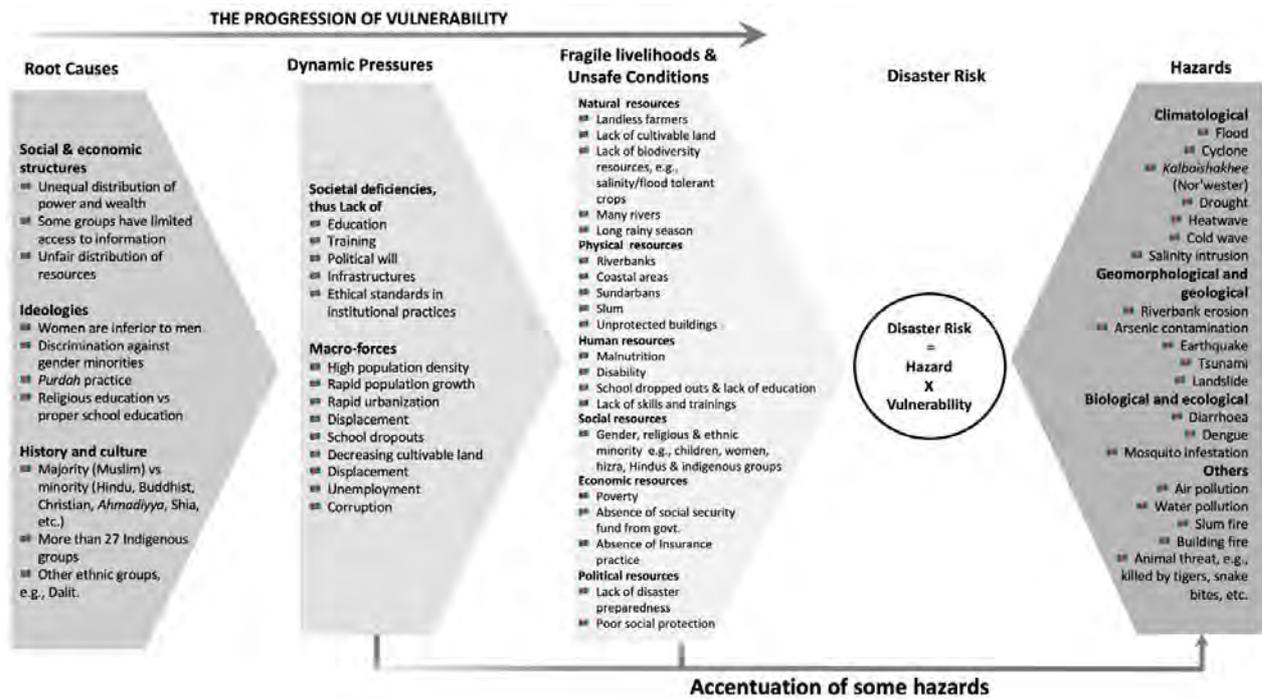
country is exposed to a wide range of hazards including landslides, river erosion, drought, salinity intrusion, arsenic contamination and earthquakes, the most devastating disasters, in terms of both lives lost and economic costs, are associated with floods and cyclones (Guha-Sapir et al., 2015). It is the distinctive combination of the geographical setting and socio-economic condition which has made the country susceptible to many disasters with high impact.

Bangladesh is the largest alluvial delta in the world, and up to 80% of the country is classified as floodplain (Huq & Shoaib, 2013). The country is criss-crossed by more than 310 rivers and tributaries (Ministry of Disaster Management and Relief, 2010). Up to 30% of the country experiences annual flooding during the monsoon season, while in extreme flood events over 60% of the land area tends to be impacted (Majumder, 2013). In 2019 alone, five million people were affected by flood, including 200,000 displaced, hundreds of deaths from drowning, snake-bites and lightning strikes, and many suffering from diarrhoea and other waterborne diseases (Al Jazeera and News Agencies, 2019; Anik, 2019; Floodlist News, 2019). Over 60% of Bangladesh is less than five metres above sea level, which makes coastal areas highly exposed to the storm surges generated during cyclone events (Majumder, 2013). Three more recent devastating cyclones that the country has experienced are Cyclone Aila in 2009 causing 190 deaths, 3,935,341 affected and US\$270 million damage, Cyclone Sidr in 2007 causing 4,234 deaths, 8,978,541 affected and US\$2.3 billion damage, and the Cyclone of 1991 causing 138,866 deaths, 15,438,849 affected and US\$1.78 billion damage (Asian Disaster Reduction Centre, 2020). Given that the country is situated in a seismically active region, it is also at high risk of earthquakes and tsunamis (Alam, 2019; Kamal, 2013; Mondal, 2019).

However, disasters in Bangladesh are not simply caused by the physical environment and existing hazards. Rather the distinct combination of demographics, socio-economic status and political issues contribute to the outcome in disasters (Asgary & Halim, 2011; Awal, 2015; Garai, 2016). Thus, while the location of Bangladesh exposes the country to many hazards, the underlying socio-economic condition has a vital role to play in making people more vulnerable and causing more catastrophic impacts. This dynamic, in the Bangladeshi context, can be viewed from the perspective of the Pressure and Release (PAR) model (See Figure 4.1) (Blaikie, Cannon, Davis & Wisner, 1994; Wisner, Blaikie, Cannon, & Davis, 2004).

#### **4.3. Unpacking the Root Causes of Vulnerabilities**

The PAR model suggests that a disaster is a convergence of two opposing dynamisms, with the process generating vulnerability on one side and the exposure to hazards on the other. Wisner et al. (2004) argue that vulnerabilities are generated from three intercreative progressive levels: a) root causes; b) dynamic pressures; and c) unsafe conditions. While the root causes, e.g., political and socio-cultural conditions, can influence power distribution, the resulting limitation makes people vulnerable to hazards. Similarly, the dynamic pressures linked to the root causes can create insufficiency of resources which in turn create vulnerability to people and communities. The PAR model describes unsafe conditions as the specific arrangement or forms through which people's vulnerability (which is created as a result of the root causes and dynamic pressures) is expressed, e.g., people compelled to live in hazardous locations due to lack of housing facilities. The PAR model is modified according to the Bangladeshi context from a broad perspective, and presented in Figure 4.1.



**Figure 4.1. Pressure and Release model of disasters in Bangladesh**  
 (Adaptation from Wisner et al., 2004; Wisner, Gaillard & Kelman, 2012)

While Bangladesh is prone to many devastating disasters, the country has an exceptionally high population density with more than 1,116 people per square kilometre (World Population Review, 2020). Therefore, a single disaster has the potential to affect millions of lives. Bangladesh is also one of the world's poorest nations: more than 24% of households still live below the national poverty line (Asian Development Bank, 2020), and gross national income per capita is just US\$1,750 (World Bank, 2020). This severely undermines the capacity for disaster risk reduction (DRR), response and recovery. Due to poverty and resulting severe housing crisis, people are forced to live in unsafe areas with high disaster risk e.g., slums (2.23m people live in slums as of 2015: Bangladesh Bureau of Statistics, 2015a) and in the Sundarbans mangrove forests (Wittenborough, 2014). Therefore, the vulnerabilities that arise from poverty and over-population, lead to many other human-made disasters, including

building collapse, waterlogging, slum fires (Rashid, 2009), and even being killed by tigers (232 people were killed by tigers between 2001 to 2014; Daines, 2018).

Although Bangladesh is a very rich fertile land, and agriculture is the key to supporting the livelihoods of the rural population, paradoxically more than 50% of the households in rural areas do not own their own farms (Januzzi & Peach, 1980; Rogge & Elahi, 1989). They therefore live by farming on borrowed land in exchange for half or sometimes up to two-thirds of the produce going to the landowners. This leaves them with little or no insurance against financial loss from disasters (Mutton & Haque, 2004). Therefore, despite harvesting an abundance of agricultural produce, these “functionally landless” farmers are left with little after subtracting production costs and the landlord’s share (Bodley, 2008). By analysing the historical 1943 Great Bengal Famine and the 1974 Bangladesh Famine, Noble Laureate economist Amartya Sen (1981) pointed out that, such large-scale disasters occurred despite an abundance of food, and without a critical food shortage. Calling those events “Man-Made Disasters” (Sen, 1998), he further stated that they can be attributed to the country’s “legal, economic, political, and social characteristics” upon which “the ability of different sections of the population to establish command over food” depends (Sen, 1981, p. 162). Hence the landless farmers and the poor became victims of famine.

When disasters take place, the poor villagers typically make survival efforts by selling off their livestock and household possessions, thus becoming even poorer (Haque, 1997; Hartmann & Boyce, 1979, 1983). Those who are left with nothing migrate to the major cities – mostly the capital city, Dhaka – in search of work such as rickshaw pulling or working as a day labourer, and live in the slums, or even on the street (Mutton & Haque, 2004). This also contributes to school dropouts and child labour, as these families are often compelled to send their children

to earn money, e.g., girls as domestic helpers; boys to work in garages, carpentry and warehouses (Hossain, 1989; Mutton & Haque, 2004). This also adds to abuse, exploitation and violence against children (Zaman, Matin & Kibria, 2014). Unfortunately for some families, this can be ‘out of the frying pan and into the fire’, because those who have migrated to the city slums due to disasters in their villages – e.g., associated with riverbank erosion, flood or cyclone – again become destitute by another common hazard, slum fire (McDonnell, 2019; UNDRR-Regional Office for Asia and Pacific, 2019).

Research also indicates that poverty often intermingles with existing socio-cultural practices and leads people to vulnerability. In the Bangladeshi context, this includes belonging to minor religious groups or castes, *purdah* practice (wearing longer clothes to cover the female body, sometime also the head and face), a man’s decision-making power over female members in the family, and so on. Hartmann and Boyce (1979, 1983) describe how Hindu communities face more difficulties in accessing governmental support than do Muslims, resulting in uneven death tolls following disasters. Other recent studies also show that religious discrimination plays a vital role in disasters in Bangladesh (Mallick, Rahaman, & Vogt, 2011). Studies also point out that women and children are more likely to be fatalities in disasters (during cyclone Sidr in 2007) due to the fact that they cannot receive permission from male family members (the decision makers) to leave the house and go to shelters, and women are traditionally responsible for taking care of children. Many women lost their lives during cyclones because their clothes became entangled in trees (Kabir, Khan, Ball, & Caldwell, 2016).

Limited access to information, resources, decision-making and political power are considered root causes of people’s vulnerabilities to disasters in Bangladesh (Asgary & Halim, 2011; Awal, 2015; Garai, 2016; Kabir et al., 2016). Therefore, for better DRR, it is vital to ensure

that these vulnerable groups (e.g., children, women, the poor, religious minorities) are included in planning and decision-making processes. Sadly, research shows that in Bangladesh, these groups of people are not only excluded from decision-making but are often allocated fewer resources and support at community-level programming. When Bangladesh was still a very young country (gaining independence in 1971), Hartmann and Boyce lived in Bangladesh (1974-1976) to understand the paradox “why [is] a country with so much of the world’s most fertile land, also the home of some of the world’s hungriest people?” (Hartmann & Boyce, 1979, p.10). After two years of study, they put the blame on the cultural system, concluding that this was because of “the man-made barrier of a social order [which] benefits a few at the expense of the many” (p. 42). They observed that “at the national level, financial resources and skilled manpower are allocated for the benefit of a fewer rather than for the wellbeing of the majority” (p. 35). They also stated that following every disaster when foreign aid was pouring in, the powerful and so-called “elite” would seize most of it, leaving the poor and the powerless hungry and helpless. Following the 1974 Bangladesh famine, Parkinson (1981) also confirmed that, when the impact fell hard on “the poorest sections of the rural population and destitute throughout the land”, only a handful of government officials and groups of urban people had access to highly subsidised food, “while the most vulnerable and poorest rural population had only residual claims on the grain available at the disposal of the Government” (p. 84).

Since then, Bangladesh has walked a long, war-ridden path towards economic development, food security and disaster management. Yet, even as the country approaches its golden jubilee of independence, the same root causes remain. The poor and marginalised groups are still unable to access their fair share of aid and community programming (Altaf, 2019). This happens due to the existing power imbalance, and their lack of capacity to articulate their needs and rights over more powerful and influential counter groups (Mutton & Haque, 2004). Such

incidents are common worldwide and considered to be a strong barrier to implementation of development projects (Gow & Morss, 1988). Thus universally, and also in the context of Bangladesh, disasters cannot be perceived as an entirely natural phenomenon, but rather as a combination of social and natural affairs where “activities of daily life comprise of set points in space and time where physical hazards, social relations, and individual choice converge” (Blaikie et al., 1994, p. 13).

#### **4.4. DRR in Bangladesh: Policies and Practices**

The Standing Orders on Disaster (SOD) established in 1997 paved the way for institutionalising DRR in Bangladesh. Currently, the Disaster Management Act 2012 (DMA 2012) serves as the legal framework for all DRR initiatives. Bangladesh has also founded a supreme body for the direction of DRR under the name of the National Disaster Management Council (NDMC). Although NDMC is headed by the Prime Minister, the Ministry of Disaster Management and Relief (MoDMR) functions as the Secretariat. Thus, while MoDMR has the core liability for coordinating all DRR activities, NDMC holds the responsibility for direction, monitoring and administration. For implementing DRR policies and decisions, there is a national cabinet-level committee, the Inter-Ministerial Disaster Management Coordination Committee (IMDMCC). Following the enactment of the DMA 2012, a dedicated department, the Department of Disaster Management (DDM), was set up to assist MoDMR by commissioning DRR activities, including preparedness, response and recovery. DDM’s responsibility also includes coordinating with stakeholders regarding DRR-related programs and interventions. Other than these, the following institutions also operate at a national level:

- a) National Disaster Management Advisory Committee (NDMAC), headed by an experienced professional;

- b) National Platform for Disaster Risk Reduction (NPDRR), headed by a selected Secretary;
- c) Earthquake Preparedness and Awareness Committee (EPAC), headed by the Minister for MoDMR; and
- d) Focal Point Operation Coordination Group of Disaster Management (FPOCG), headed by the Director General of DDM.

There are also institutions at sub-national level under the jurisdiction of local government councils who hold power and responsibility to coordinate and implement DRR activities at local level:

- a) City Corporation Disaster Management Committee (CCDMC), headed by the Mayor of City Corporations;
- b) District Disaster Management Committee (DDMC), headed by the Deputy Commissioner;
- c) Pourashava Disaster Management Committee (PDMC), headed by the Chairman of Pourashava (municipality);
- d) Upazila Disaster Management Committee (UZDMC)s at Upazila Parishad (subdistrict council), headed by the Upazila Nirbahi Officer; and
- e) Union Disaster Management Committee at headed by the Chairman of the Union Parishad (the lowest unit of local government at rural level).

The country has a five-year action plan for DRR prepared by (MoDMR), known as the National Plan for Disaster Management (NPDM). Currently the country is running its 7<sup>th</sup> five-year plan, National Plan for Disaster Management: 2016-2020. Bangladesh Climate Change Strategic Action Plan (BCCSAP) also provides guidance for development activities by linking climate

actions with DRR (MoDMR, 2017). While national priorities and frameworks have influence on the development of the NPDM 2016-2020, the objectives, goals and activities are heavily grounded on several international frameworks, particularly the Sustainable Development Goals (SDGs), Sendai Framework for Disaster Risk Reduction (SFDRR), and Asia Regional Plan for Implementation of the SFDRR (MoDMR, 2017). The listed action plans in the NPDM 2016-2020 are based on four broader priorities (MoDMR, 2017):

- i. Understanding disaster risk;
- ii. Strengthening disaster risk governance to manage disaster risk;
- iii. Investing in disaster risk reduction for resilience;
- iv. Enhancing disaster preparedness for effective response and to Build Back Better in recovery, rehabilitation and reconstruction.

Although the NPDM 2016-2020 is considered to be the major DRR framework, surprisingly it does not include any national action plan regarding DRR education for children. However, research indicates that both government and NGOs are making efforts for DRR education for children.

#### **4.5. Children, Disasters and DRR Education**

While disasters affect an average of 10 million people in Bangladesh every year, with 57.5 million people under the age of 18 (Bangladesh Bureau of Statistics, 2011), it is children who bear the brunt of the impact (International Monetary Fund, 2013). Not only are children more likely to be killed or injured during a disaster (Bern, Sniezek, Mathbor et al., 1993; Choudhury, Bhuyia, Choudhury & Sen, 1993), they are at an increased risk of human trafficking in the aftermath (Amin & Sheikh, 2011; Alam, Begum, Chowdhury et al., 2001; USAID, 2006). Children are also more susceptible to the water-borne diseases and malnutrition that frequently

accompany flooding events (Khatun, Rahman, Rahman & Hossain, 2013). Moreover, because of poverty and living conditions, e.g., those living in slums and on the streets, and child labourers, any disaster affects them very severely. Disasters greatly restrict children's access to education (Akram, Chakma & Mahbub, 2012). Most schools in Bangladesh are located in areas that are highly exposed to flood and cyclone, and since 1971 over 33,000 schools have been completely destroyed by these (Akram, Chakma & Mahbub, 2012). Even when school itself is not destroyed, children's education is often disrupted because the route to school is blocked or the school building is co-opted for use as a community shelter (United Nations Children's Fund, 2011). As a result, children can miss up to three months of school every year or drop out completely (United Nations Children's Fund, 2011). This has serious adverse consequences for individual children, and the long-term intellectual and economic development of the country (United Nations, 2014).

Although the NPDM 2016-2020 does not specify any action plan for DRR education for children, the government of Bangladesh has already taken some initiatives to integrate DRR education into the school curriculum. However, DRR and education experts are urging further research identifying better ways for incorporating DRR into the busy school curriculum (Habiba, Abedin & Shaw, 2013; Selby & Kagawa, 2012). In an attempt to protect Bangladeshi children from the adverse impacts of disasters, several child-rights-based NGOs have been implementing CC-DRR programs (e.g., Slotema and Shahi, 2010; UNICEF, 2011). Preliminary research and anecdotal evidence suggest that CC-DRR programs are having a positive impact on children's knowledge, skills and capacity for action (Benson & Bugge, 2007; UNICEF, 2011). But rigorous research is lacking, and development agencies are asking serious questions about the effectiveness, sustainability, efficiency and replicability of the CC-DRR approach (e.g., UNICEF, 2011). Thus, in-depth, multi-stakeholder-involved research is

required to reliably inform policy and practice. This study addresses that gap, and in doing so provides a rigorous evidence base for the development and implementation of DRR education for children in Bangladesh.

#### **4.6. Specific Locations of the Study**

The field-level research has been conducted in two phases (detailed in the Methodology chapter) and in two major geographical locations.

a) **First phase - collection of primary data:** This phase was conducted in greater Dhaka, including Dhaka Metropolitan, the capital city, and Narayanganj. Hence this phase was conducted in an urban setting.

b) **Second phase - child participatory data analysis:** This phase was conducted in a village named Tarua in the Brahmanbaria district, situated 100 kilometres south of Dhaka. Thus, this phase was conducted in a rural setting.



**Figure 4.2. Locations of the Study**

Dhaka was selected for primary data collection because the leading CC-DRR-implementing NGOs are based in Dhaka and they run the majority of their CC-DRR programs in and around Dhaka, including Narayanganj. The government agencies recruited to participate in the study were also based in Dhaka. The selection of Brahmanbaria district for the second phase of study was mostly influenced by ethical and methodological considerations. The study required participation of a large group of children for a longer period of time. For this it was very

important that the adult researcher had an inside perspective into the community, which helps in building rapport and trust with children (Christensen & James, 2000). The adult researcher was born and spent most of her life at Tarua in Brahmanbaria. It was therefore appropriate to select this place for the second phase. Table 4.5 provides significant demographic information on the three districts.

**Table 4.1. Demographical Information of Study Locations**

<b>Issues</b>	<b>Dhaka</b>	<b>Narayanganj</b>	<b>Brahmanbaria</b>
<b>Area</b>	1,463.60 km <sup>2</sup> (BBS, 2015ab)	684.35 km <sup>2</sup> (BBS, 2015c)	1881.20 km <sup>2</sup> (BBS, 2015d)
<b>Urbanization</b>	77.36 % of the district (BBS, 2015b)	33.54% (BBS, 2015c)	15.79 % (BBS, 2015d)
<b>Population</b>	<p>12.043977 million *</p> <p>0-4 Years: 8.3%</p> <p>5-9 Years:9.2%</p> <p>10-14 Years:9.6%</p> <p>15-19 Years: 10.2% (BBS, 2015b; as of 2011)</p> <p>*Although according to the United Nations Department of Economic and Social Affairs Population Division (2018), the estimated population of Dhaka in 2018 was <b>21.006 million</b></p>	<p>Total: 2.948217 million</p> <p>0-4 Years: 9.8%</p> <p>5-9 Years:11.4%</p> <p>10-14 Years:10.7%</p> <p>15-19 Years: 10% (BBS, 2015c, as of 2011)</p>	<p>Total: 2.840498 million</p> <p>0-4 Years:13.7%</p> <p>5-9 Years:16%</p> <p>10-14 Years:12.8%</p> <p>15-19 Years: 8.8% (BBS, 2015d)</p>
<b>Density of population (per km<sup>2</sup>)</b>	<p>8,229 (BBS, 2015b)</p> <p>30.7% Bangladesh's population living in Dhaka (BBS &amp; UNICEF, 2015)</p>	2,863 (BBS, 2015c)	1,510 (BBS, 2015d)
<b>Population growth rate (per year)</b>	3.48 (BBS, 2015b)	3.05 (BBS, 2015c)	1.68 (BBS, 2015d)

<b>Issues</b>	<b>Dhaka</b>	<b>Narayanganj</b>	<b>Brahmanbaria</b>
<b>Slums</b>	More than four million people living in more 5,000 slums; 75% of slum households live in one room with parents, children and in some cases grandparents. (UNICEF, 2020)	16 Acre of Slum area with 4910 households (BBS, 2013)	
<b>Literacy rate</b>	70.50% (male 73.6%, female 66.9%);  School attendance: 47 % among school age children and youth (BBS, 2015b)	51.7% (male 55.9%, female 46.9%);  School attendance: 35.77 % among school age children and youth (BBS, 2015c)	45.3% (male 45.7%, female 44.9 %)  50.8 % school attendance among school age children and youth (BBS, 2015d)
<b>Pre-primary education providers</b>	4,699 (MED & DPE, 2019)	2,267 (MED & DPE, 2019)	980 (MED & DPE, 2019)
<b>Primary schools</b>	1,417 (Bangladesh National Portal, 2020)	548 (DPEO Narayanganj, 2020)	1,105 (DPEO Brahmanbaria, 2020)
<b>Junior secondary schools</b>	116 (DSHE, 2020)	36 (DSHE, 2020)	31 (DSHE, 2020)
<b>Secondary schools</b>	553 (DSHE, 2020)	169 (DSHE, 2020)	221 (DSHE, 2020)
<b>Higher secondary schools</b>	165 (DSHE, 2020)	24 (DSHE, 2020)	11 (DSHE, 2020)
<b>Vocational/Technical schools</b>	87 (BANBEIS, 2018a)	11 (BANBEIS, 2018a)	14 (BANBEIS, 2018a)
<b>Alia Madrasas</b>	117 (BANBEIS, 2018b)	77 (BANBEIS, 2018b)	59 (BANBEIS, 2018b)
<b>Qawmi Madrasas</b>	District specific information could not be collected. However, it has been estimated that there are approximately 14,000 Qawmi madrasas operating in Bangladesh (The Daily Star, 2018).		

Issues	Dhaka	Narayanganj	Brahmanbaria
<b>Common hazards</b>	<ul style="list-style-type: none"> <li>• Water logging</li> <li>• Flood</li> <li>• Earthquake</li> <li>• Air pollution</li> <li>• Water pollution</li> <li>• <i>Kalboishakhee</i> (Nor'westers)</li> <li>• Cold wave</li> <li>• Heat wave</li> <li>• Lightning</li> <li>• Building collapse</li> <li>• Slum and industry fire</li> <li>• Diarrhoea</li> <li>• Dengue fever</li> </ul>	<ul style="list-style-type: none"> <li>• Water logging</li> <li>• Flood</li> <li>• Earthquake</li> <li>• <i>Kalboishakhee</i> (Nor'westers)</li> <li>• Lightning</li> <li>• Air Pollution</li> <li>• Water pollution</li> <li>• Cold wave</li> <li>• Heat wave</li> <li>• Lightning</li> <li>• Slum and industry fire</li> <li>• Diarrhoea</li> <li>• Dengue fever</li> </ul>	<ul style="list-style-type: none"> <li>• Flood</li> <li>• Cyclone (although not a coastal area, the weather effect of cyclone is heavily experienced as severe storm and heavy rainfall)</li> <li>• <i>Kalboishakhee</i> (Nor'westers)</li> <li>• Lightning</li> <li>• Tornado</li> <li>• Drought</li> <li>• Cold wave</li> <li>• Heat wave</li> <li>• Diarrhoea</li> </ul>

#### **4.7. An Overview of the School Education System in Bangladesh**

At present, five streams of education exist within the education system:

- a) Bengali-medium schools
- b) English-medium schools
- c) Vocational/Technical schools
- d) Madrasa (Islamic religious schools; two types: Alia and Qawmi)
- e) NGO-driven Non-formal schools.

Bengali-medium schools lead the public-school system and enrol the majority of children. In these public schools, primary education is provided completely free of cost. However, there are private Bengali-medium schools too. At the primary level, about 85% of children are in the mainstream Bengali-medium schools (Ahmed, 2018). The rest are distributed among English-medium schools, Madrasas, Vocational schools and NGO-driven Non-formal schools. While a small section of urban elite families can afford to send their children to English-medium schools, a large proportion of children who belong to religious-minded poor families attend Madrasas. The NGO-driven non-formal schools provide pre-primary and primary education for children from ultra-poor and disadvantaged communities, e.g., Sylhet tea garden areas, Bangladesh-Indian border area, Chittagong Hill Tracts, child labourers and street and slum children (Shohel & Howes, 2018). As a result, the education system divides the nation based on socio-economic status (Ahmed, 2018), because which type of school a child attends is decided by the financial and social status of their family. Hence children from urban rich families attend English-medium schools; those who belong to middle- and lower-middle-income families go to Bengali-medium private and public schools, respectively; children from religious-minded poor families go to Madrasas; and children from very poor families (and those in geographically remote areas) can only attend non-formal schools (Ahmed, 2018).

Consequently, these numerous streams and mediums of education in Bangladesh have created extensive debate among critics (Badruzzaman & Mian, 2015). Table 4.2 shows the structure of current education system in Bangladesh.

**Table 4.2. Structure of School Education System in Bangladesh**

(Prepared with information collected from the Directorate of Secondary and Higher Education Bangladesh, 2020 and the National Education Policy 2010)

Age	Level of education		Grades/ Classes	Stream of Education					
				Mainstream Bengali- medium	English- medium	Vocational/ Technical	Madrasa		NGO-driven Informal Education
							Alia	Qawmi	
4+ to 6	Pre-primary School		Nursery, KG -1, KG-2	National Curriculum; also, few educational materials in five indigenous languages.	Schools have different books and methods				NGOs have their own individual designed curriculum and textbooks
6+ to 11	Primary School		I - V	National curriculum	International Curriculum		Special National curriculum for Madrasas focusing on Islamic education	Does not have such levels.  Only provides Islamic education planned by Qawmi teachers	Follow National curriculum with additional textbooks
11+ to 16	Secondary School	Junior- Secondary School	VI - VII	National curriculum	International Curriculum		Special National curriculum for Madrasas		
		Secondary School	IX - X	National curriculum		National curriculum for vocational education	Special National curriculum for Madrasas		
16+ to 18	Higher secondary		XI - XII	National curriculum	International Curriculum	National curriculum for vocational education	Special National curriculum for Madrasas		

#### **4.7.1. Bengali-medium Schools**

Bengali-medium schools provide pre-primary, primary and secondary-level education. The curriculum and textbooks of Bengali-medium schools are designed and developed by the National Curriculum and Textbook Board (NCTB). Textbooks are distributed to all schools and children receive their books free of charge on 1 January every year. However, higher secondary-level textbooks are not free. At secondary level, when the children are in class nine, they can choose one of three disciplines: science, humanities or commerce. Again, at higher secondary level they are required to do the same. Their textbooks differ according to their choice of discipline (Badruzzaman & Mian, 2015). Children in each grade have to pass the annual written examinations to get promoted to the next grade. However, there are public examinations at the end of grades V, VIII, X and XII, which are, respectively, called Primary School Certificate (PSC), Junior School Certificate (JSC), Secondary School Certificate (SSC) and Higher Secondary School Certificate (HSC) Examinations.

The Directorate of Primary Education (DPE) is the single autonomous organisation responsible for organising public examinations for all Bengali-medium primary schools (PSC examination). In the same way, the Board of Intermediate and Secondary Education (BISE) conducts JSC, SSC and HSC examinations. While DPE is a single organisation, there are seven independent BISEs that cover seven geographical areas: Dhaka, Rajshahi, Comilla, Jessore, Chittagong, Barisal, and Sylhet (Education Board Computer Center, 2020).

### **4.7.2. English-medium Schools**

English-medium schools follow an international syllabus (e.g., Edexcel<sup>5</sup>, Cambridge international curriculum, etc.). Each English-medium school is an independent education provider and is not monitored by the government (Hamid & Rahman, 2019). English-medium schools are mostly located in the major cities and urban areas. Families have to bear high tuition fees to send their children to these schools. Their curriculum is completely different from a public school. Students in English-medium schools do not study the textbooks developed by the NCTB. However, at each grade, they have to study two compulsory textbooks developed by the NCTB: a) Bengali (language and literature), and ii) Bangladesh Studies. Neither are they required to sit for any national public examinations that are arranged by the examination boards: each English-medium school is responsible for arranging its own annual examinations. However, after finishing grades X and XII, respectively, children sit for O-level and A-level examinations organised internationally by the international authorities.

### **4.7.3. Vocational/Technical schools**

While typical Bengali-medium schools offer three streams of subjects to select (humanities, science and commerce), vocational/technical education is not provided in these schools. There are specific vocational schools that provide technical education. These schools start at grade IX. Thus, there are no vocational schools at primary/junior secondary level. Vocational education focuses on creating skilled manpower to meet the demand of the country's job market. The vocational curriculum includes vocational and technical subjects, and some subjects from the general Bengali-medium stream. It provides students with multiple options of trades, e.g., mechanics and technicians, farming, trading, business management, etc. The

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<sup>5</sup> A multinational education and examination body owned by Pearson.

vocational curriculum includes 14 subjects: nine compulsory subjects similar to those of the general Bengali-medium stream – Bengali, English, Mathematics, Bangladesh and Global Studies, Physics, Chemistry, Computer Application, Religious and Moral Studies, and Physical Education, Health Science and Sports; one compulsory subject which is different from the general stream – Engineering Drawing; three compulsory subjects on a particular trade; and one elective subject chosen from four options similar to those of the general stream – Higher Mathematics, Accounting, Geography and Environment, and Agricultural Studies. The ratio of the skill training subjects to the general subjects is 17:9 in terms of hours per week (BTEB, 2018). The Bangladesh Technical Education Board (BTEB) holds administrative authority over vocational schools for conducting nationwide examinations for completion of secondary- and higher-secondary-level education. These examinations are equivalent to the BISE-conducted SSC and HSC examinations (Education Board Computer Center, 2020).

#### **4.7.4. Madrasas**

The Madrasa system is solely focused on Islamic religious education. However, there are two types of Madrasas in Bangladesh: Alia Madrasa and Qawmi Madrasa (Bhattacharya, 2006). The Alia Madrasa syllabus is developed under government supervision (Anzar, 2003). In addition to Islamic religious studies, students are taught a few compulsory subjects as in Bengali-medium schools. The textbooks used have slight modifications from the Bengali-medium school textbooks (Karim, 2018). The compulsory subjects are Bengali, English, Social Science, General Science, Mathematics, Agricultural Science/Home Economics, and some religious subjects (Karim, 2018). At secondary and higher secondary level, students also have to choose one stream from three groups: humanities, science and commerce.

An autonomous organisation, the Bangladesh Madrasah Education Board, is responsible for conducting public examinations for Madrasas, including Ibtedaye, Junior Dakhil, Dakhil and Alim levels, which are, respectively, equivalent to PSC, JSC, SSC and HSC examinations (Bangladesh Madrasah Education Board, 2020).

In contrast, the Qawmi Madrasa is solely focused on developing children's Islamic religious expertise, and the Qawmi curriculum is developed by the Qawmi teachers themselves (Anzar, 2003). The complete Qawmi education spans 16 years. Unlike the Alia Madrasa, it does not include general subjects. It typically includes subjects related to Islamic religious knowledge and the Arabic language, i.e., the Quran, Hadith, Fiqh, Islamic rules and regulations, and Arabic reading, writing and speaking skills. Critics consider that the Qawmi curriculum deprives children of the opportunity to learn other important aspects of knowledge, including science, technology and modern world affairs (Chompa, 2017).

#### **4.7.5. Non-formal Education**

Although the government of Bangladesh provides primary-level education free, the government still has not been able to deliver it to all school-age children, particularly those living in remote areas. Moreover, many children drop out before completing their primary education (Shohel & Howes, 2018). Therefore, the concept of a non-formal education system has been developed. The aim of non-formal schooling is to provide education suiting the needs of disadvantaged children, particularly those who dropped out from government primary schools due to socio-economic circumstance, and to prepare them for re-entering formal schools (Shohel & Howes, 2007). These types of schools are run by NGOs and each NGO has its own model of education (Shohel, 2010). However, the NGOs follow an informal approach

which meets the requirements of groups of children because of, for example, remoteness, indigenous language, families needing children at home to work, child-labourers, children with a disability, etc. (Centre for Policy Dialogue, 2001).

While some NGOs operate non-formal schooling only at pre-primary level, some cover three years of primary education (Grades I-III), and some do full primary education from Grades I to V. The curriculum for non-formal education is developed by the NGOs themselves to meet the needs of particular children. However, the Ministry of Primary and Mass Education (MOPME) has developed an Early Childhood Development framework for pre-primary education which is to be followed by the NGOs (Bureau of Non-formal Education, 2009). Plan International and Save the Children (US) have developed their own curriculum for pre-primary education. For primary-level non-formal education, the two largest non-formal primary education providing NGOs, BRAC and Proshika, have developed their own curriculum in line with the National primary school curriculum from NCTB (Bureau of Non-formal Education, 2009).

#### **4.8. Conclusion**

Although the geophysical environment makes Bangladesh one of the most hazard-prone countries on Earth, the distinct combination of demographics, socio-economic status and political issues within the country plays a vital role in the occurrence of disasters. While the physical location of Bangladesh exposes it to numerous hazards, the underlying socio-economic condition increases people's vulnerability, with resulting catastrophic impact of disasters. This chapter has explained this dynamic from the Pressure and Release (PAR) model's perspective. While underlying socio-economic conditions have made the people of Bangladesh highly vulnerable to disasters, children are identified as the most vulnerable group,

having the largest impact of disaster, including death, injuries, human trafficking, abuse and school dropouts. The chapter also broadly described the national DRR policies and frameworks, DRR education for children, and school education systems, and provided socio-demographic information on the specific locations of the study. It presented significant background information that is necessary for understanding the study, and emerging results and discussion at a later stage. The next chapter outlines the epistemological framework of the study, followed by a detailed description of research design and methods.

## CHAPTER 5

### RESEARCH DESIGN AND METHODOLOGY

*Children are not the people of tomorrow, but people today. They are entitled to be taken seriously. They have a right to be treated by adults with tenderness and respect, as equals.*

~ Janusz Korczak (1929), Prawo dziecka do szacunku

[A Child's Right to Respect]

#### 5.1. Introduction

The research plan involves development of the research questions, a review of the relevant literature for the development of the study's methodological framework, and data collection and analysis, and presentation of the findings. Previous chapters have stated the research questions and provided a literature review. This chapter outlines the philosophical and methodological framework and elaborates on the research design and methods. The philosophical assumptions, based on epistemological, ontological and axiological viewpoints, are discussed. The principal debates considered here are realism *versus* relativism, objectivism *versus* interpretivism, positivism *versus* constructivism and quantitative *versus* qualitative research.

#### 5.2. Philosophical Worldview

Understanding and outlining a philosophy is vital step in any research because it guides the researcher in every step of the research process: from initial planning and design to the data analysis and findings (Guba & Lincoln, 1994; Klein & Myers, 1999; Crotty, 1998). Guba and Lincoln (1994) define the philosophical framework as “a set of basic beliefs” which construct the “ultimates or first principles.” They further state:

it represents a worldview that defines for its holder, the nature of the “world”, the individual’s place in it, and the range of possible relationships to that world and its parts. (Guba & Lincoln, 1994, p. 107)

Thus, a philosophical framework is an outline of basic beliefs that do not have a foundational standard to measure their definitive truth; rather they have to be recognized solely by faith. Kuhn (1970) considers that it is the researcher’s commitment to an *a priori* philosophical framework which makes the creation of knowledge possible. Klein and Myers (1999) conclude that a researcher cannot conduct research without delineating the philosophical assumptions outlining the research approach. Therefore, for every study, philosophical assumptions should be made explicit, and the researcher should present the intellectual basis of the study to the reader. A detailed description of the philosophical issues and an exposition of the guiding philosophical framework for this study is presented here.

Issues of ontology, epistemology (Guba & Lincoln, 1994; Kuhn, 1970) and axiology (Findlay, 1970; Lapie, 1902; Rescher, 2004) are crucial to any scientific study, including one in social sciences. Thus, for this study too it is important to outline the philosophical assumptions regarding knowledge perception and value.

### **5.2.1. Ontological Position**

Ontology is concerned with the nature of reality and how it is perceived. It leads researchers to ask questions about what they think about how the world functions, how society is formed, and how everything around them is influenced by that thought (Crotty, 1998). For every study, it is essential to determine the ontological position because it guides the researcher toward research design (Easterby-Smith, Thorpe & Lowe, 2002). The two major ontological positions

through which the world is perceived compete from two opposed directions: the realist and the relativist approaches (Easterby-Smith et al., 2002; Galliers, 1992; Guba & Lincoln, 1994).

*Realism* advocates the existence of absolute reality. According to the realist position, the social world is a separate entity made up of concrete structures which exist prior to the existence or knowledge of individuals, and it remains the same regardless of how they are named and articulated by individuals (Burrell & Morgan, 1979; Guba & Lincoln; 1994, 2005). The relativist position denies the idea of absolute reality and draws on individuals' perception of reality. Hence the relativist perceives the world as a social construction represented in names and notions that are used as sense-making instruments (Ciborra, 1998). Therefore, from a relativist point of view, as Guba and Lincoln (1994) assert, knowledge cannot be less or more "true"; rather it is less or more "informed" or "perceived."

### **5.2.2. Epistemological Position**

Epistemology is the philosophy concerned with the process of knowledge acquisition: that is, what we know and how we know it (Crotty, 1998). Hamlyn (1967) offers a succinct definition of the field:

Epistemology, or the theory of knowledge, is that branch of philosophy which is concerned with the nature and scope of knowledge, its presuppositions and basis, and the general reliability of the claims to knowledge. (p. 8-9)

It provides a philosophical foundation for determining what type of knowledge is acquirable and how to measure its validity (Maynard, 1994). Thus, for a scientific study, the epistemological position is also as vital as ontology's. The two main epistemological positions are *objectivism*, and *interpretivism* or *subjectivism* (Easterby-Smith et al., 2002; Guba &

Lincoln, 1994)

Objectivism supports a realist ontology and assumes the social world is an objective reality which can be understood by discovering facts (Burrell & Morgan, 1979; Ciborra, 1998; Easterby-Smith et al., 2002; Galliers, 1992; Knorr-Cetina, 198; Walsham, 1993). The objectivist considers the viewer and the viewed as independent entities. Knorr-Cetina (1981) clarifies: “to the objectivist, the world is composed of facts and the goal of knowledge is to provide a literal account of what the world is like” (p. 1). Gergen (1991) explains:

Objectivists are deeply committed to the view that the facts of the world are essentially there for study: they exist independently of us as observers, and if we are rational we will come to know the facts as they are. (p. 91)

Interpretivism (or subjectivism) adopts a relativist ontology and denies the idea of objective reality (Geertz, 1973). Braa and Sørgaard (1997) assert that, when human beings are involved in a situation, different individuals interpret it in different ways. Hence knowledge is not there to be discovered but to be created and interpreted to fit in with human purposes. Schwandt (1994) points out:

Subjectivists are deeply committed to the view that what we take to be objective knowledge and truth is the result of perspective. They endorse the claim that contrary to common sense, there is no unique “real world” that pre-exists and is independent of human mental activity and human symbolic language. (p. 125)

Therefore, according to interpretivist philosophy, reality exists in the meanings of what we construct, interpret and organise through our personal experiences and perceptions (Gergen, 1985).

### **5.2.3. Axiological Position**

Axiology deals with the judgment about values and ideologies (Findlay, 1970; Lapie, 1902; Rescher, 2004). Although axiology is greatly concerned with aesthetics and ethics, Saunders, Lewis and Thornhill (2009) consider it to be equally important in social enquiry for a credible research result. Heron (1996) argues that researchers establish their axiological position when they pronounce their values as a foundation for making decisions on what research they are conducting and how they carry it out. Saunders et al. (2009) assert that defining an axiological position allows the researcher to understand and acknowledge the role of values in the research process: whether the researcher is able to eliminate a value or assign it a balanced influence. Thus, based on axiology, how a researcher deals with personal values in a study leads us to derive two major philosophical propositions, positivism and constructivism, and to compete from two contrasting ontological and epistemological positions (Crotty, 1998).

The philosophy of positivism is grounded on a realist ontology and an objectivist epistemology. It affirms that knowledge is genuine only when it is established on sense, experience and positive verification (Kuhn, 1970). Positivism claims that all phenomena appear in reality as they are and can be observed neutrally without being biased by the observer's values (Delanty, 2005). Positivists assume that research must be free from values (Delanty, 2005). A positivist researcher holds an objective stance and retains the independence of their research. This means that, through the whole process of research, the researcher does not allow their cultural, political, ethical or any personal value to influence it (Dudovskiy, 2016; Saunders et al., 2009).

The philosophy of constructivism, however, is based on relativist ontology and interpretivist epistemology (Neimeyer, 1993a, 1993b). The fundamental principle of constructivism is formulated around the concept that human beings construct reality by interpreting phenomena

through their own values. Thus, the researcher's own values have an important part to play in research (Saunders et al., 2009; Schwandt, 1994). Constructivists claim that, as Neimeyer (1993a) explains, human beings "do not have direct access to a single knowable external reality. All of our understandings are contextually embedded, interpersonally forged, and necessarily limited" (pp. 1-2). Hence, they are true for both the researcher and the researched object or participants. Thus, the constructivist seeks to study the multiple meanings constructed by people and the association of those meanings in their lives, and, at the same time, acknowledges that research findings will be deeply influenced by their personal views or construction (Schwandt, 1994). Therefore, constructivism assumes that research is value-laden, and the researcher is biased by values and experiences (Schwandt, 1994).

#### **5.2.4. Social constructionism**

Sometimes "social constructionism" can give rise to confusion with the term "constructivism" (Crotty, 1998; Gergen, 1985; Patton, 2002). Like constructivism, social constructionism also denies the idea of objective observation of knowledge, and advocates for construction of knowledge by utilizing personal values (Schwandt, 1994). But what is more emphasised in social constructionism is that, stepping aside from the individual perspective, as Schwandt (1994) makes clear, it focuses on how a group of people as a whole belonging to a similar society construct the meaning of knowledge. Crotty (1998) provides a simple yet clear difference between these two terminologies:

Constructivism points out the unique experience of each of us. It suggests that each one's way of making sense of the world is valid and worthy of respect as any other, thereby tending to scotch any hint a critical spirit. On the other hand, social constructionism emphasises the hold our culture has on us: it shapes the way we see things (even in the way we feel things) and gives us quite a definitive view of the world.

(p. 58)

Thus, social constructionism emphasises the significance of socio-cultural and historical context in knowledge formation (Berger & Luckman, 1966; Latour & Woolgar, 1979; Gergen, 1985; Derry, 1999; McMahon, 1997). Kim (2010) identified that the foundation of social constructionism is established on “specific assumptions about reality, knowledge, and learning” (p. 56). Therefore, it is important to understand these three grounds from a social constructivist’s point of view, as follows.

**Reality:** To social constructionists, reality is constructed through the activities of human beings. Society members are involved in inventing the properties of the world through their actions. Thus, the social constructionists believe that reality cannot be observed or discovered as absolute truth, since it did not exist before its construction by society (Kukla, 2000).

**Knowledge:** Social constructionists view knowledge as a human creation which is rooted in social and cultural construction. Individual members in a society generate meaning via interactions with their environment and other members in the society (Ernest, 1999; Gredler, 1997; Prawat & Floden, 1994).

**Learning:** Social constructionism considers learning as a collective process. According to social constructionist belief, learning does not simply occur inside individuals. Social constructionists also reject the idea of learning as passive development of human behaviors formed by external forces. They believe that meaningful learning takes place when people engage themselves in social activities (McMahon, 1997).

Gergen (1985) argues that, because scientific knowledge is an outcome of social processes,

research activities are subject to being ruled by social norms. Accordingly, social constructionism encourages researchers to examine these norms imposed by in culture and tradition, and consider them to be a subject to criticize, modify and change (Berger & Luckman, 1966; Latour & Woolgar, 1979; Gergen, 1985; Derry, 1999; McMahon, 1997). Recognising scientific knowledge as an outcome of social construction also refines the moral ramifications of scientific research, according to (Dewey, 1929), “the final import of the conclusions as to knowledge resides in the changed idea it enforces into action” (p. 245). Thus, social constructionism prevents researchers from defending socially unacceptable propositions under the label of “scientific facts” and, conversely, guides them to consider the ethical implications of their propositions for the larger society (Gergen, 1985). Therefore, it is evident that social constructionism is closely linked with two important contemporary theories: Activity Theory (Engeström, 1987) and the New Sociology of Childhood (James & Prout, 1990).

This study is underpinned by a relative, interpretive, constructivist approach, and, at the same time, it is grounded in social constructionist philosophy. Within this philosophical convention, this study seeks to explore how individuals in a particular background have constructed reality, and it looks into their informed perceptions, principles, views and opinions. Therefore, the research findings will strongly reflect the collective perceptions of the research participants (Patton, 2002). It also acknowledges the influence of the researcher’s individual views and perceptions of the world (Crotty, 1998).

The researcher’s personal perception of the world and knowledge, to the extent that they are associated with this research, are expanded in the following section. It illustrates the researcher’s theoretical perspective as well as providing a context and reasoning for weighing the findings of the study.

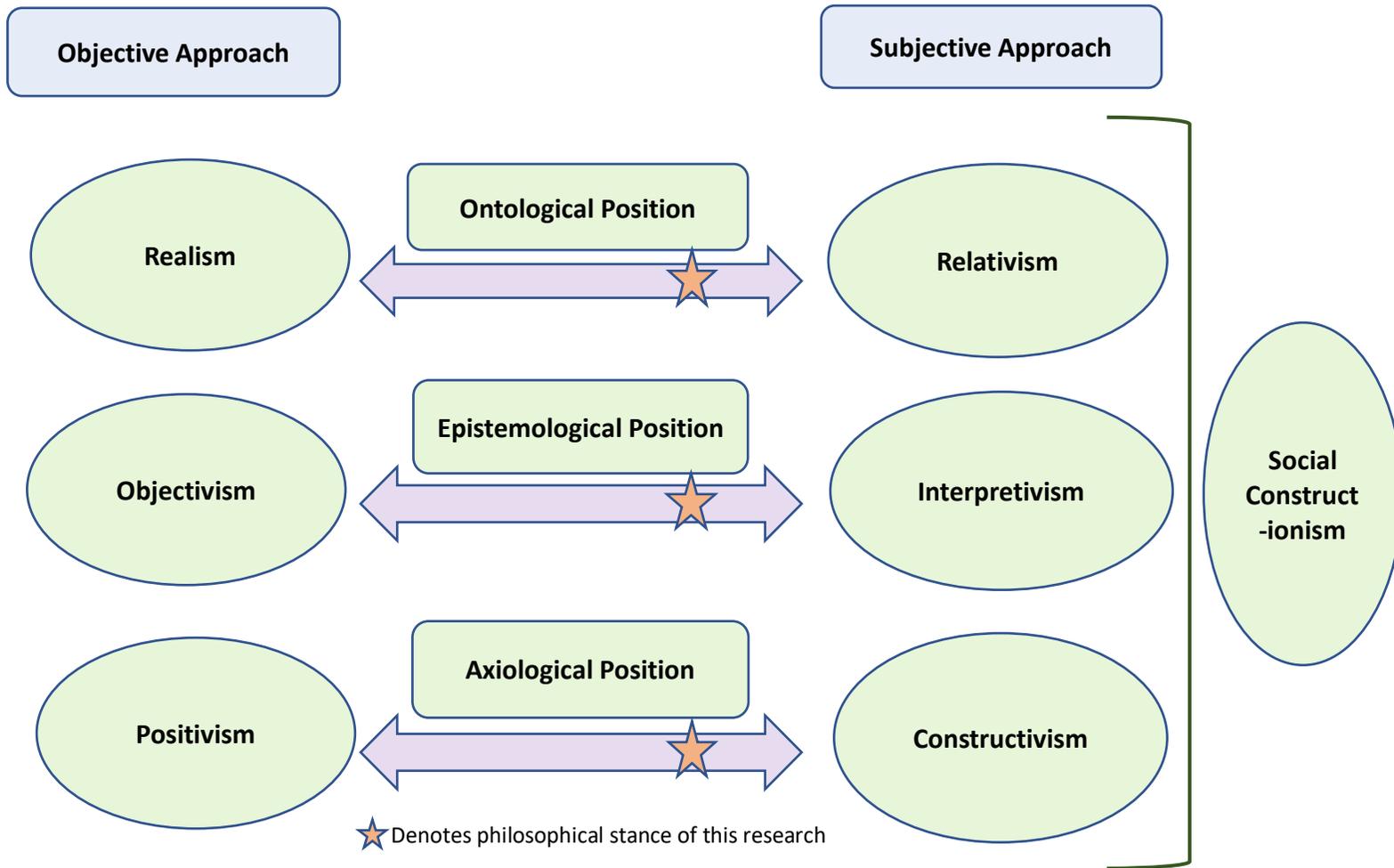


Figure 5.1. Methodological framework of the study

### **5.3. Methodology and Research Design**

#### **5.3.1. Underlying Theoretical Perspectives**

The choice of methodology has been prominently influenced by the theoretical perspectives explained in the literature review chapter. The central principles of the New Sociology of Childhood (James & Prout, 1990) have greatly influenced the research approach. The ideologies of this theory compelled the researcher to incorporate a child-centred ethos. The assertion of this theory, which is that children must have the opportunity to establish their opinions in the research process, influenced the study to employ qualitative methods so that children could express their own ideas. In this way it guided the researcher to integrate such an environment that could empower the child participants as co-researchers. At the same time, the principles of collective and object-oriented activity system, and interrelations among the actors in Activity Theory (Engeström, 1987) compelled the study to critically examine and analyse the data and develop credible findings.

#### **5.3.2. Researcher Position in the Study: Insider-Outsider**

The position of the researcher as an outsider or insider is an important debate that has received increasing exploration among social scientists. Evered and Louis (1981) introduced the terms “inquiry from the inside” and “inquiry from the outside”, later simply known as “insider” and “outsider” research. While an insider inquiry is "characterized by the experiential involvement of the researcher", an outsider inquiry is depicted as “detachment on the part of the researcher" (Evered & Louis, 1981, p. 385). Louis and Bartunek (1992) later explained that, by undertaking an inquiry from the inside “the researcher learns by taking the role of an actor in the setting” and, in contrast, through an inquiry from the outside “the researcher learns by remaining in an onlooker role” (p. 101).

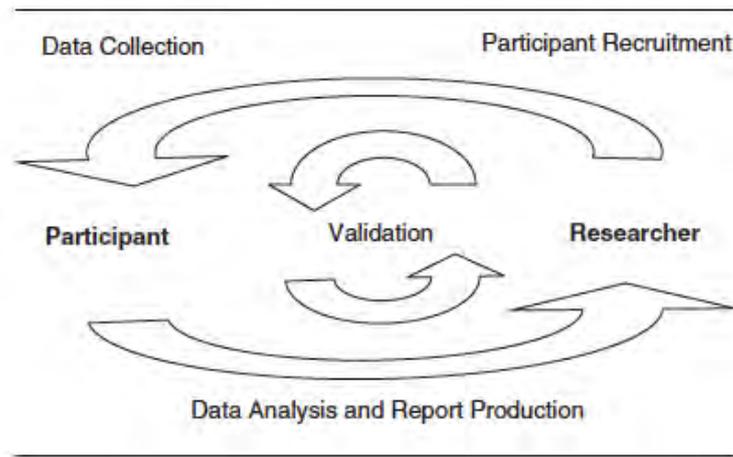
In insider research, researchers conduct research with group of people of whom the researcher is one (Kanuha, 2000). This way the researcher shares the same identity, language, and experiential base as the participants. In outsider research, the researcher is an outsider to research participants and their socio-cultural setting (Asselin, 2003). Thus, the insider role provides the researcher with a complete membership role with an assured “legitimacy” and/or “stigma” (Adler & Adler, 1987). The insider role status frequently allows researchers more rapid and more complete acceptance by their participants (Talbot, 1998-1999). Therefore, participants are typically more open with researchers and there is a greater depth to the data gathered. But, more often, insider researchers are criticised for a high level of subjectivity which can impede the research process – both in data collection and in analysis (Dwyer & Buckle, 2009). Thus, it creates a difficult dilemma for the qualitative researcher in specifying their position as a researcher:

The process of qualitative research is very different from that of quantitative research. As qualitative researchers we are not separate from the study, with limited contact with our participants. Instead, we are firmly in all aspects of the research process and essential to it. The stories of participants are immediate and real to us; individual voices are not lost in a pool of numbers. We carry these individuals with us as we work with the transcripts. The words, representing experiences, are clear and lasting. We cannot retreat to a distant “researcher” role. Just as our personhood affects the analysis, so, too, the analysis affects our personhood. Within this circle of impact is the space between. The intimacy of qualitative research no longer allows us to remain true outsiders to the experience under study and, because of our role as researchers, it does not qualify us as complete insiders. We now occupy the space between, with the costs and benefits this status affords. (Dwyer & Buckle, 2009, p. 61)

However, in undertaking this study, the researcher acknowledges that her personal experiences influenced her decision to research this topic in Bangladesh. She acknowledges that her experiences also influenced *the way* she chose to research this topic. But, during the research process of data collection and analysis, she played the role of an outsider researcher, which means she did not put her own views in interpreting data but rather acted as an onlooker. At the same time, she had the full privilege of an insider researcher since she shared the same language and culture as the participants (Evered & Louis, 1981; Louis & Bartunek, 1992).

### **5.3.3. Researcher-Participants' Relations and Interactions**

The relation between researcher(s) and researched has been a recurrent concern in the methodology literature. The privileged position of the researcher *versus* the researched has been strongly emphasised. The inherent power imbalance between the parties, and the ethical concerns pertaining to this imbalance, are commonly dwelt upon, with particular attention paid to the predetermined asymmetric roles between the researcher and the researched. It is also argued that defining what knowledge is to count in a concrete, researcher-researched encounter is not necessarily the sole privilege of the researcher, because participants bring their own agenda to the research situation (Karnieli-Miller, Strier & Pessach, 2009). However, to minimise this power imbalance, the literature strongly emphasises using qualitative methodologies for data gathering (Karnieli-Miller et al., 2009; O'Connor & O'Neill, 2004; Reason, 1994; Strier, 2007).



**Figure 5.2. The flow of power relations in qualitative research (Karnieli-Miller et al., 2009)**

Experts suggest that qualitative methods promote rebalancing of power in the researcher-participant relationship and encourage a focus on marginalized understandings and experiences (O'Connor & O'Neill, 2004). On the other hand, quantitative methods are criticised for “dichotomous”, “unequivocal”, “constant”, “uniform”, and “predetermined” (Karnieli-Miller et al, 2009). Therefore, to establish a balanced power relationship between the researcher and the participants, this study employed a set of qualitative methods for data gathering. The study involves both adult and child participants. However, the qualitative methods employed here are carefully crafted to create a power balance between the participants and the researcher.

### **5.3.3.1. Relations with Adult participants**

The study’s adult participants engaged in unstructured interviews. Here they had the full power of choosing the time and place for the interview. Taylor and Bogdan (1998, p. 48) argue that unstructured interviews offer “a feeling of empathy for informants” from the researcher that enables participants to “open up about their feelings.” Karnieli-Miller et al. (2009) say that unstructured qualitative interviews offer “an unstructured, informal, anti-authoritative, and nonhierarchical atmosphere” and “a welcoming, nonthreatening environment in which the

interviewees are willing to share personal experiences and beliefs” (p. 280). Hence, with the aid of qualitative unstructured interviews, the researcher and the participants established their relations in an atmosphere of power equality (Karnieli-Miller et al., 2009). Thus, this study can ensure that the unstructured and emergent nature of the interview design created that balanced power. It also offered participants full freedom to bring their own agenda to the research and made them feel empowered, instead of making them feel obliged through a set of pre-structured questionnaires.

### **5.3.3.2. Relations with Child participants**

Children have the most important role in this study. Research suggests that children are potentially more vulnerable to unequal power relationships with adult researchers than are other groups. Some children may perceive the researcher as an authority figure and consequently may try to please him/her for fear of the reaction if they do not (Coyne, 1998; Balen, Holroyd, Mountain & Wood, 2000; Punch, 2002a; Robinson & Kellett, 2004; Flewitt, 2005; Hill, 2005). It can be difficult to remove or even reduce the unequal power relations between an adult researcher and a child, and several methods have been used for that (Mauthner, 1997; Davis, 1998; Graue & Walsh, 1998; Gollop, 2000; Brooker, 2001; Punch, 2002a; Barker & Weller, 2003; Eder & Fingerson, 2003). Since the power inequalities between child participants and adult researchers are inevitable, research suggests that researchers seek children’s assistance in understanding their perspectives (Mayall, 2000).

This research, considering the role for active child participation, sought to empower the children and minimise the power differential by using child-friendly methods and techniques which built on children’s competencies and interests and made sure that the children had support from each other if they so wished (Morrow & Richards, 1996; Mauthner, 1997;

Brooker, 2001; Punch, 2002a; Barker & Weller, 2003; Eder & Fingerson, 2003). After carefully reviewing the literature on child-friendly methods, focus groups and child-led workshops were adopted. Literature on focus group planning and facilitation, including with children and DRR context, provided a foundation (Alderson, 2000; Fargas-Malet, McSherry, Larkin & Robinson, 2010; Fothergill & Peek, 2015; Hennessey & Heary, 2005; Morgan et al., 2002; Peek & Fothergill, 2009; Tanner & Seballos, 2012; Towers, 2015; Punch, 2002a, 2002b). The methods were focused on creating a relaxed, fun atmosphere, where children were encouraged to play a critical role in shaping the research process, direction and design. Child-focused methods were applied carefully so as not to discourage participation, ensuring that there was no strong adult influence, and encouraging children's motivation to contribute. The study was also conducted in their school setting, and at times and in circumstances convenient for them. As the children knew the environment very well, they felt comfortable. The researcher introduced herself as a learner who had not known where to look for her information, and who was therefore looking for it from the children, because they were the experts and had the knowledge. This helped relax the environment, and made the children feel confident and empowered (Davis, 1998; Einarisdóttir, 2007; Graue & Walsh, 1998).

#### **5.4. Study Design**

The design of an appropriate research approach is an important decision. Given the aims and nature of this research, which is explicitly concerned with “what”, “why” and “how” questions, rather than enquiries associated with “how often” or “how much”, an intensive research approach is necessary (Sayer, 1992; Whittekar, 2008). For such research, it is important to gather an in-depth understanding of participant's opinions and their intuitive motivations (Sayer, 1992). In order to do this, a qualitative methodology is necessary, because it helps understanding people's views and opinions by applying suitable techniques, such as participant

observation, in-depth interviews, focus groups and group discussions, *inter alia*. Qualitative research is thus best used for research problems whose results will clarify issues and expand knowledge.

Given that children are the central part of this research, it endeavoured to create the best environment for their participation. Punch (2002a) observed that the traditional approaches of research with children addressed children from two extremes: either considering them similar to adults or treating them as completely different. This study seeks to bridge these two extremes by perceiving children as similar to adults in some ways but also possessing different view and capacities (James, Jenks & Prout, 1998). To do this, the study engaged children as co-researchers. Understanding children's experiences and viewpoints on DRR education programs was central to this endeavour (Winstone, Huntington, Goldsack, Kyrou & Millward, 2014).

Recognition of the significance of child participation and, accordingly, utilisation of different qualitative methods for creating a child-friendly atmosphere, and growth of such studies have been well-documented in DRR research (Fothergill & Peek, 2015; Mudavanhu, 2016; Peek, 2008, 2010; Peek & Fothergill, 2006, 2009; Towers, 2015). Such studies are convincing in using different qualitative methods that help build trust with children and engage them in a way that deepens the shared understanding of children's experiences. Therefore, for this study, qualitative methods previously used in DRR research with children have been reviewed and evaluated carefully. From that, a set of qualitative methods found to be most appropriate for this study was selected. The primary data collection process, therefore, has been designed with an array of qualitative research methods. The rationale and detailed description of the application of each method is provided below.

### **5.5. Maximising Methodological Rigor: Triangulation, Credibility, Dependability, Confirmability and Transferability**

Rigor within the research process was maximised via the data collection and analysis procedures used. Traditional research outcomes like internal and external validity, reliability, and objectivity are not considered appropriate in qualitative methodologies; other terms are used, such as credibility, dependability, confirmability and transferability (Guba, 1981; Lincoln, 1994; Lincoln & Guba, 1985; Nagy & Viney, 1994). Therefore, in order to maximise the research rigor, the following four main procedures were utilised.

First, to ensure the validity and reliability of the findings, the triangulation technique was employed by using multiple methods and data sources (Berg, 2001; Bryman 2004; Denzin, 1972; Maykut & Morehouse, 1994, Morse, 1994; Patton, 2002; Strauss, 1987). In social research, triangulation refers to the use of multiple sources of data and methods of data collection to validate findings about a particular social phenomenon (Bryman 2004). As a research strategy, triangulation assumes that social research "... is a discovery process designed to get at an objective truth... [and] that looking at an object from more than one standpoint provides researchers with more comprehensive knowledge about the object" (Miller & Fox, 2004, p. 36). This fits well with the constructivism and social constructionism philosophies that inform this research. Data are sourced from semi-structured, in-depth key informant interviews, focus groups discussions, participant observations and reviewing documents and policies.

Second, as an audit trail, the researcher kept a research diary in which she documented daily tasks and memos (Etherington, 2004; Lincoln & Guba, 1985; Maykut & Morehouse, 1994;

Morse, 1994; Nagy & Viney, 1994; Strauss, 1987; Strauss & Corbin, 1990, 1998). While research diaries have a long history for keeping rich descriptions of site, they have also been used to record the researcher's own story and ideas, including, but not limited to, keeping written records of feelings, speculations, assumptions, methodological notes, data interpretations, and reflections on research plans, methods and activities (Holly & Archer, 2011). Intense use of such diary-keeping in qualitative research has been well-documented in many disciplines, including social (Whyte, 1955), ethnographical (Malinowski, 1967) and educational research (Smith & Geoffrey, 1968). A diary is also recommended as a useful tool for research with children. For example, Armstrong (1980) used his diary as a tool for his own understanding about "understanding of children", documented in his renowned book *Closely Observed Children*. Thus, for the researcher's own reflection and understanding of participants' understanding, her diary elements included items from the following categories:

- contextual information on data collection events
- reflection on research methods
- plans for next steps
- logs of additional received items such as reports, photos, maps, etc.
- ideas on interpretation of findings.

Third, the researcher checked her transcripts with participants to ensure accuracy (Maykut & Morehouse, 1994). Recognised for bringing increased credibility, this technique is often known as "member checks" in qualitative research (Guba & Lincoln, 1994; Shenton, 2004). The researcher also sent participants a summary of her interpretations of their shared ideas and opinions to provide comments and clarification where necessary (Brewer & Hunter, 1989; Miles & Huberman, 1994; Pitts, 1995). Recognising the significance of such informative understanding Van Maanen (1979) stated:

Analysis and verification... [are] something one brings forth with them from the field, not something which can be attended to later, after the data are collected. When making sense of field data, one cannot simply accumulate information without regard to what each bit of information represents in terms of its possible contextual meanings. (p. 558)

Finally, the researcher has provided a comprehensive narrative of the study context, setting and the participants, so that readers can feel more involved (Burgess-Limerick & Burgess-Limerick, 1998). This technique is also recognised for offering readers an opportunity to define the credibility and transferability of the research when comparing it to similar or different research and contexts (Nagy & Viney, 1994).

## **5.6. Methods and Process**

The field-level study was divided into three phases. Data were collected using an array of qualitative methods:

- i. Phase 1: Collecting data using a multi-informant approach;
- ii. Phase 2: Analysing data through child participation and sharing with the community;  
and
- iii. Phase 3: Following up with children and teachers.

Participation was, of course, voluntary. Participants included all stakeholders in the CC-DRR process: children, teachers, parents, community members, NGO staff, emergency managers and government officials. Access to these stakeholders in the first phase was facilitated by Save the Children, the world's largest child-centred development and humanitarian agency, and a project partner in the larger CC-DRR program of research of the Australian Bushfire and

Natural Hazards CRC 6.5-year funded study under which this PhD was auspiced. Potential participants were identified using the following inclusion criteria:

- a) Children: boys and girls aged between 8 and 16 years;
- b) CC-DRR implementers: representatives from CC-DRR implementing agencies;
- c) Government officials: representatives of local governments (*Upazila* and Union Parishad level), Ministry of Education, Ministry of Primary and Mass Education, Ministry of Disaster Management and Relief, and the National Curriculum and Textbook Board.

#### **5.6.1. Data Collection Methods**

For qualitative research, it is suggested that data are analysed as they are collected so that the next round of data collection can benefit from the analysis of current data (O’Cathain, Hodinott, Lewin et al., 2015). This study concurred. Therefore, the data collection methods were emergent in two ways. First, data were analysed (e.g., transcribing, taking down notes and identifying information regarding the core research question from the transcripts) on an ongoing basis that helped shape the next round of data collection. Second, participants made suggestions for collection of data and information from other sources or persons not initially in the plan but followed up at participants’ suggestion. All interviews were conducted in Bengali. Detailed description of the step-by-step methods of data collection are presented below.



**Figure 5.3. Flow chart of field-level research activities**

### **5.6.1.1. Phase one: Field-level Data Collection**

#### **5.6.1.1.1. Key informant interviews (KII)**

Cannell and Kahn (1968) termed research a dialogue between people for the purpose of gaining required information. In social research, the interview is used extensively as a basic data collection method. However, the interview is considered a key content of any research, because it gives the researcher an opportunity for further investigation, resolving problems and gathering data, which may not be achievable any other way (Cunningham, 1983; Patton, 2002). This study involved unstructured, in-depth interviews for which the term Key Informant Interviews (KII) (Gilchrist and Williams, 1992; Marshall, 1996; Tremblay, 1957) has been used here. While a structured interview is applied to collection of specific, numerical data for

understanding a phenomenon within pre-established categories that can possibly bring limitations to the area of analysis, unstructured interviews seek to explore phenomena without applying *a priori* categorisations (Fontana & Frey, 2005). This method of data collection is guided by the principle that “...the participant’s perspective on the phenomena of interest should unfold as the participant views it... not as the researcher views it” (Marshall & Rossman, 2006, p. 101). The researcher asked open-ended questions to explore general topics, allowing interviewees to frame and structure their responses. The main advantage of this approach was that it alerted the researcher to issues that participants believed were most important. Thus, the emergent flow of the unstructured interviews helped the researcher identify new issues and lines of questioning not previously considered.

### **KII Participants**

Initially two groups of interviewees were sought: CC-DRR practitioners and implementers from NGOs in Bangladesh; and representatives from government units: NCTB, MoE (secondary and higher secondary division), Ministry of Primary and Mass Education, and Ministry of Disaster Management and Relief. The emerging nature of the interviews later required two more groups: the government units proposed interviewing local government units and they organised access; focus groups with children suggested interviewing participants of a nation-wide program for adolescents, “Shorno Kishoree.” Thus, during field-level data collection, in total 24 KIIs were conducted. Interview development was guided by literature on developing KIIs (Gilchrist & Williams, 1992; Marshall, 1996; Tremblay, 1957). Detail descriptions of the KII procedure are presented.

**Table 5.1. List of Key Informant Interview Participants**

Category of Participants	Time of year	Name of Agency	Type of Agency	Number of participants		
				Male	Female	Total
NGO Practitioners	September 2017- October 2017					
International NGO		Save the Children	International NGO	4	2	6
		Plan International	International NGO		1	1
		Muslim Aid	International NGO	1		1
Local NGO		Community participation and Development (CPD)	Local NGO working in partnership with International NGOs		1	1
	Social and Economic Enhancement Program (SEEP)	Local NGO working in partnership with International NGOs		1	1	
Government Officials	December 2017					
Ministry and National Level Departments		Department of Disaster Management under Ministry of Disaster Management and Relief (DDM)	Government unit	4		4
		Ministry of Education (Secondary and Higher Secondary School section)	Government unit	2		2
		Directorate of Primary Education	Government unit	1		1
	National Curriculum and Textbook Board	Government unit	3		3	

Category of Participants	Time of year	Name of Agency	Type of Agency	Number of participants		
				Male	Female	Total
Local Government		(NCTB)				
		Upazila Parishad			1	1
		Union Parishad		1	1	2
Special category: Country wide national level program for adolescent	January 2018					
Participating in Shorno Kishoree program		Shorno Kishoree	A national-level program supported by the government		1	1
<b>Total Number of Participants</b>				<b>16</b>	<b>8</b>	<b>24</b>

### **KIIs with NGO Practitioners**

At the beginning of the field-level data collection, between 26 September 2018 to 30 October 2017, 10 KIIs were conducted with 10 NGO staff working in CC-DRR programs for the last five to ten years. Access to these stakeholders was facilitated by Save the Children (Australia and Bangladesh).

Save the Children Australia introduced the research team (the researcher and the principal supervisor) with the CC-DRR team at Save the Children Bangladesh via email. The student researcher explained the research plan to through a meeting held on a Skype platform. When the student researcher met the CC-DRR team in person in Dhaka, they provided a list of 15 NGO staff as potential participants, together with their contact information (email, telephone numbers). The student researcher approached these potential participants by email and telephone. Ten agreed to participate in the interviews, which were face-to-face. The participants chose the time and place for the interview. In most cases, they invited the student

researcher to their office; some chose nearby cafes. Information sheets and consent forms were provided to participants before the interview. Any questions that they had about the interview process and research were answered. After signing the consent forms, they were considered as the recruited participants of the research with voluntary participation rights, including the right to withdraw at any time without consequences. Interviews were audio-taped with the consent of the participants.

The interviews were designed in unstructured conversational style. Thus, participants had full freedom to talk about their experiences, ideas, thoughts and insights regarding the area of research. The conversation-like interviews helped to understand detail about CC-DRR programs in Bangladesh. i.e., what sorts of programs they were implementing, the content and mode of delivery, the places of implementations (e.g., schools, communities, who are involved, etc.), what kind of challenges they face, which parts of programs contribute to what benefits and outcomes, what they perceived as most important topics for children to learn, how to best learn them, and so on. Thus, the KIIs with this sub-group captured their views on optimal practices for developing, delivering, evaluating and implementing DRR education for children.

### **KIIs with Government Officials**

After the KIIs with the NGO practitioners, CC-DRR program observation and focus groups with children (see below) KIIs were conducted with government officials. The researcher prepared a list of potential participants and their contact information from the target government institutions' websites. After emails and telephone calls, 10 participants agreed to take part. All interviews with this group were conducted in their office during the office hours. The interview procedure was same as the KIIs with the NGO practitioners. But information from already gathered data helped shape the flow of the conversation-style interview.

The conversation with personnel of Education Ministry was focused on school curriculum and how the CC-DRR education program could fit within it. KIIs with the Ministry of Disaster Management and Relief helped explore how different national policies support the implementation of disaster education programs, and what scope and opportunities are available for children's participation in DRR. The interviews with the third subgroup, the local government unit, was focused on how local government can be involved and contribute to the sustainability of CC-DRR programs in schools and the community.

All interviews with government officials were audio-recorded with the consent of the participants. But interviews with the local government unit were not recorded because participants did not give consent, but they did agree to participate and gave consent for taking notes. The researcher took detailed notes during the interviews which later helped in analysing data.

#### **5.6.1.1.2. Participant Observations**

Participant observation seeks to gather practical and theoretical realities that individuals experience in their life as part of their daily activities (Jorgensen, 1989, p. 20). Bryman (1988) describes participant observation as “the sustained immersion of the researcher among those whom he or she seeks to study with a view to generating a rounded, in depth account” (Bryman 1988, p. 45). Hammersley and Atkinson (1983) take a wider view, stating that every social study, in some way or another, is a kind of participant observation because it includes participation in the social world and reflects on the outcome of that participation (p. 17). Jorgensen (1989) identified the following minimal conditions in research to be applicable for participant observations:

- the research phenomenon is closely associated with connotations and interactions perceived from the insiders' viewpoint
- the study phenomenon is observable in an everyday life situation
- the researcher has access to an appropriate situation or setting
- the research phenomenon is suitably limited in size and location; and
- the research problem is addressable by qualitative data collected by direct observation and other methods relevant to the local setting.

Thus, in line with Jorgensen's minimal conditions, participant observations played a major role in this study in developing an understanding of current CC-DRR programs.

Between 1 October and 1 December 2017, the existing CC-DRR education program activities implemented by Save the Children in Dhaka were systematically observed. Access to program events was facilitated by Save the Children Bangladesh. The following aspects were explored through observation:

- the extent of child participation;
- program activities;
- the mode of delivery; and
- positive outcomes as results of the CC-DRR program.

The researcher had an insider-outsider researcher role. This came from the position that she was from Bangladesh and spoke Bengali like all the participants. At the same time, she was also an outsider researcher because she was neither a staff member of Save the Children nor a participant in the CC-DRR program. When observing, the researcher took the role of a passive observer, that is, she only observed participants in what they were doing in their real-life

situation but did not perform any interactions or conversation with them (Cohen, 2000; Jorgensen, 1989). Notes were taken in handwritten form, utilising pen and paper (Whiting, & Whiting, 1970; DeWalt, DeWalt & Wayland, 1998) with informed consent (Kelman, 1972; Thorne, 1980). No photographs or videos were recorded during the observation. This helped maintaining the neutrality of the observation while keeping the participants spontaneous in their activities (Adler & Adler, 1994).

During the planned time of observation, the disaster and emergency management agencies were involved in emergency response to the displaced Rohingya population in Bangladesh. As a result, the ongoing CC-DRR programs were less focused. However, within the planned timeframe, six observation events were possible to organise. The observations helped in understanding the extent of child participation as well as program contents, activities, facilitation style and some of the activity-specific outcomes. Thus, it also created an opportunity for triangulation of data gathered from other sources.

#### **5.6.1.1.3. Focus Groups with Children**

The focus groups played one of the most important roles in in the study, particularly in understanding children's views, thoughts and expectations (Kitzinger, 1994, 1995; Krueger & Casey, 2014; Morgan, 1996a, 1996b). Though the focus group method has been predominantly applied in child health research (Bauer, Yang & Austin, 2004; Horner, 2000; Morgan, Gibbs, Maxwell & Britten, 2002; Neumark-Sztainer, Story, Perry & Casey, 1999; Reilly, Armstrong, Dorosty, Emmett et al., 2005), it has been also used in child-centred disaster research to understand children's knowledge of vulnerability and resilience to bushfires in Australia (Towers, 2012, 2015), and to explore the experience of children displaced by Hurricane Katrina in the US (Fothergill & Peek, 2006, 2015; Peek & Fothergill, 2006). Other available evidence

also suggests that children like focus groups and tend to participate actively (Fothergill & Peek, 2015; Fargas-Malet, McSherry, Larkin & Robinson, 2010; Morgan et al., 2002; Peek & Fothergill, 2009; Towers, 2015).

Between 1 November and 1 December 2017, focus groups were conducted in Dhaka and Narayanganj, involving 53 children (12-16 years) who had already participated in the CC-DRR program in Dhaka, implemented by Save the Children Bangladesh. Each focus group included between five and seven children. All focus groups were facilitated in Bengali language, the native language.

There were nine focus groups in total: five with girls and four with boys. Based on previous research in Indonesia (Haynes, Lassa & Towers, 2010), girls and boys have many of the same ideas about DRR, but sometimes they do differ and, in some circumstances, they can influence each other's views (e.g., boys dominating conversations and girls not feeling empowered). Other studies have also shown that girls were found to be more knowledgeable than boys (Ronan & Johnston, 2001; Ronan, Crellin, Johnston, Finnis et al. 2010). Therefore, to reflect these concerns and the cultural context of Bangladesh, children were divided into separate boys' and girls' groups.

**Table 5.2. List of Focus Group Participants**

No.	Areas	Name of school	Number of participants		
			Boys	Girls	Total
1	Mirpur, Dhaka	Mirpur Girls Ideal School	0	6	6
2	Mirpur, Dhaka	Mirpur Girls Ideal School	0	5	5
3	Narayanganj	Morgan Girls' School & College	0	6	6

No.	Areas	Name of school	Number of participants		
			Boys	Girls	Total
4	Narayanganj	Morgan Girls' School & College	0	5	5
5	Narayanganj	Narayanganj High School	7	0	7
6	Narayanganj	Narayanganj High School	7	0	7
7	Narayanganj	Narayanganj High School	6	0	6
8	Narayanganj	Narayanganj High School	6	0	6
9	Narayanganj	Narayanganj High School	0	5	5
<b>Total number of participants</b>			<b>26</b>	<b>27</b>	<b>53</b>

The planning and moderation of the focus groups followed the guidelines of established literature, including with children and DRR and through a participatory lens (Kitzinger, 1994; Krueger & Casey, 2001, 2014; Morgan, 1996a, 1996b; Morgan & Krueger, 1993; Morgan, Krueger & King, 1998; Tanner & Seballos, 2012). This means that children in the focus group were not treated as mere participants but were considered co-researchers. This included accepting their recommendation for involving children in data analysis and communication of research findings. The researcher facilitated all focus groups, acting as a moderator. She probed responses to questions, but did not introduce any information learned in previous focus groups as one typically would in inductive qualitative research. This was done to treat each focus group as a new and unique event. A final year student (female) of Bachelor (Honors) in Child Development and Social Relationship at College of Home Economics, University of Dhaka, voluntarily acted as assistant moderator. The assistant moderator mostly helped in taking audio records, and serving food and drinks among the children.

The focus groups were conducted in after-school hours and in classroom settings. The Physical Education teacher (from each school) was assigned for each of the focus groups to observe the process and to inform the moderator if any child was uncomfortable. However, such an incident

did not happen. Healthy snacks and water were provided to the children.

The researcher introduced herself as a learner who wanted to learn from the children. Introduction and rapport-building using interactive methods such as games, drawings, songs and using puppets were undertaken before the start of each session. The children were able to play with the puppets if they wished. This helped 'break the ice' by building trust and rapport between the children and the facilitator. There was a fun and relaxed environment during the focus groups.

For the focus groups, facilitated by Save the Children, Bangladesh, and this organisation confirmed that it had received consent from the Headmasters/Principals and School Management Committee of the schools for cooperation with the focus groups.

Participation was voluntary. Information sheets and consent forms were provided to the potential participants facilitated by teachers. If agreed, participants and their parents had to sign the consent forms. After that, they were considered recruited participants of the research with voluntary participation rights, including the right to withdraw without consequence. Before starting the focus groups, the purpose of the research was explained verbally to the children, including answering all their questions; verbal consent was sought from each participant. The process was audio-recorded with the consent of participants, to which all agreed; before recording began, it was explained to all the children that the recording was purely for documentation purposes. The duration of the focus group discussions was on average one and a half hours. The children were free to finish the discussion at any time they wished; only one participant had to leave 15 minutes before finishing the discussion because her parents had come to pick her up.

During the focus groups, children were given opportunity to talk about their experiences in CC-DRR programs as well as the DRR curriculum in their school (e.g., what they liked or disliked about it, their expectations and suggestions). They also recommended involving children in analysing and designing a DRR education program to meet their suggestions. Thus, the focus groups helped obtain data on children's experiences, perceptions and ideas of risks, disaster risk reduction, CC-DRR and their participation, and above all, the benefit of various program elements from their viewpoint and how they would like to design their own disaster resilience program.

#### **5.6.1.2. Phase 2: Participatory Data Analysis Workshop with Children**

This phase took place in Taura, a village situated in Brahmanbaria district. Before starting the data analysis process, all the audio recordings of the interviews and focus groups were verbatim transcribed by the researcher. To keep the anonymity of participants, any personal information was deleted from the transcriptions, and each transcription was given a unique number. The observation notes were also written in plain language, including the notes of the interviews where consent was not given for audio recording.

Considering the involvement of the child co-researchers, this study employed a child-participatory approach for data analysis (Coad & Evans, 2008; Kellett, 2010; Kellett, Forrest, Dent, & Ward, 2004; Larsson, Staland-Nyman, Svedberg, Nygren, & Carlsson, 2018; Matthews, Limb, & Taylor, 1999; Nind, 2011; Porter, Hampshire, Bourdillon, al., 2010). At the beginning, eight girls aged between 11 and 16 years from Tarua Girls High School were recruited as participants. Access to them was facilitated by the High School where the researcher herself had received her secondary education. The whole process took from 1

January to 31 March 2018. During this period, Tarua Girls High School kept a relaxed schedule due to the ongoing Secondary School Certificate (SSC) examination and for the preparation of the 'Annual Cultural, Educational and Sports Competition'. All sessions took place in the School on weekdays for one and a half hours each day, mostly on three days a week (Sunday, Tuesday, Thursday), with a 20-minute interval in between. Some were held on weekends and other days according to the children's choice and discussion with parents and teachers. The idea was to be flexible and let children take the lead. During all the sessions, the Physical Education and Sports teacher from Tarua Girls High School was present as an observer to support students.

On 1 January 2018, an introductory session was organised with the eight recruited children (girls). The researcher explained the PhD project in plain language, including its questions, objectives and why it was important to do it. Discussing what had been done so far (data collection), she talked about the aims of the workshop and asked for children's help on how the data could be analysed to get the answers to the research questions.

The researcher let children express ideas and plans about how they wanted to do it. The children then held a discussion among themselves and requested the researcher to share the transcription sheets with them. They divided into two groups with four participants in each. Each group then took four scripts: one focus group, one NGO interview, one government interview and one observation script. They requested time to spend two days reading the scripts and meet together for the next session to make plans for data analysis. On that day, for the first hour children had a discussion in each group. During the second hour, there was a joint discussion and they proposed the following:

- Recruit eight more high school boys to the workshop;

- Recruit some primary-level children (Grade III to Grade V);
- Recruit some out-of-school children: two boys and two girls;
- Recruit some children with special needs (at least one boy and one girl).

The children explained why they suggested this: as the girls read the scripts, they developed ideas about CC-DRR, and especially they liked reading the focus groups scripts and had ideas about including children from of different ages, gender and special needs. Within the next few days, the School organised access to more participants, following the same recruitment procedure. A list of all the participants is presented in table 5.3.

**Table 5.3. List of Data Analysis Workshop Participants**

Type of participants	Village	Name of School	Boys	Girls	Total
High school children (Grade VI-X; 11-16 years)	Tarua	Tarua Girls High School	0	8	8
		Shah Farasat Ali High School	4	0	4
		Talshahar A A I High School	4	0	4
Primary school children (Grade III-V; 9-10 years)		Tarua Free Primary School	1	1	2
Children with special needs (10 -12 years)		Tarua Free Primary School	1	1	2
Out of school children (10-12 years)				2	2
<b>Grand Total</b>			<b>12</b>	<b>12</b>	<b>24</b>

By 10 January all participants were recruited. On 11 January all participants met at the School and the first eight participants facilitated an induction session. The researcher answered any questions. Over next three sessions, participants developed and adopted the following decisions:

- Form two groups among all children;
- Select a group leader for two weeks and change by rotation among the group members;

- The researcher would be included as a group member by rotation in two groups but could not be a group leader;
- Divide each type of transcription sheets, i.e., NGO interviews, government interviews, focus groups, observations., etc., equally among two groups;
- Read the scripts thoroughly and take notes and list questions if unclear, and ask the researcher to clear up the confusion;
- Identify common themes in the transcripts;
- Make charts on the themes and write down all information identified regarding those themes in each script;
- Finally, tables should be made based on themes;
- Organise mountain papers and different colour markers and other required stationery to draw tables.

From 16 January the session started in earnest with spontaneous participation of the children and continued until 27 March 2018, with 38 sessions in total. The children produced 36 charts with a final composition of a child-centred disaster resilience education program matrix. While the sessions were going on, parents were allowed to visit. Every day some parents or teachers, by turn, would bring snacks for all participants. The children and parents organised a picnic at the School playground on one weekend.

### **Sharing the Children's Experience with the Community: A Child-centred Initiative**

As the data analysis was completed, children decided to share their experience with other children and community members. They thought of utilising one upcoming opportunity, the

biggest annual event of Tarua Girls High School: the Award-giving Ceremony of the Annual Cultural, Educational and Sports Competition, scheduled on 28 March 2018.

From early March, the children started to consult with the Headmaster, the sports teachers and the event-organising committee to allocate a time slot during the event for them. They were allocated 45 minutes (11:30 am to 12:15 pm) to do what they wished in their experience-sharing session.

Again, it is the children who took the initiative and planned for activities. They started with a 10-minute group act on flood, earthquake and fire. They then shared what they had been doing for the last three months. One by one they talked about CC-DRR and how other children, by participating in CC-DRR, are helping themselves as well as their community. They wished to have such a program in their schools, too. Finally, they declared that they would start a disaster risk assessment for their community very soon and make an action plan for reducing risk. The children requested local government to support their DRR activities – to which the present local government personnel happily agreed to be partners with them. They also requested parents, teachers and community members to join them and act together. The last ten minutes was spent in answering questions from the audience.

#### **5.6.1.3. Phase 3: Following up with Children and Teachers**

From the beginning of April 2018 to 31 January 2019, the researcher had been following up with data analysis workshop participants, the Headmaster and the Physical Education teachers of the School. This was an idea from the child co-researchers, since they wanted to keep contact with the researcher and share their stories on their future DRR activities. Thus, following the children's suggestion, a group was created on the Whatsapp platform where they could share

updates regarding their DRR initiatives in the community. The researcher also received parental consent. The decision was that the children would be using their parent's mobile phone to send any post from the group. They also took the researcher's email address. During this timeframe, a series of posts (photos and texts) had been received from the children and teachers regarding their different DRR initiatives in their households, school and community.

### **5.6.2. Data Analysis**

The collected data were analysed by the researcher using means that ensured reliable, valid, trustworthy and triangulated findings. In spite of the diversity of techniques used in qualitative data analysis, approaches can be classified into three broad categories:

- a) **Socio-linguistic:** for exploring the meaning of language, e.g., discourse analysis;
- b) **Theory developing:** data are analysed with a view to developing theory, such as grounded theory; and
- c) **Interpretive:** the aim is to explore the views of participants, e.g., thematic/content analysis (Smith & Firth, 2011).

Since the aim of this study was to explore the views and opinions of participants, an interpretive approach to data analysis was required. For this, the study applied a manual Framework Analysis" approach (Rabiee, 2004; Ritchie & Spencer, 1994, Ritchie & Lewis, 2003).

Developed by a group of social policy researchers in the UK (Ritchie & Spencer 1994; Ritchie & Lewis, 2003) as a pragmatic approach for real-world investigations, the Framework Analysis (FA) approach has become a widely practised technique for qualitative data analysis (Smith & Firth, 2011). FA shares some similar principles with different epistemological traditions in the social science field; it is this eclecticism that has remained its strength throughout its

development (Ritchie, Spencer & O'Connor, 2003). FA involves a series of inter-connected but distinct stages that allow for theme-based or case-based analysis, or a combination of the two, through the development of charts that may be read across (cases) or downwards (themes) (Rabiee, 2004). In this occasion, in FA, one can find some similarities with the conventional thematic analysis approach. Although thematic analysis is criticised for lacking transparency and depth, causing fragmentation of data (study phenomena) and compromising rigour (Attride-Stirling 2001), FA places greater emphasis on demonstrating the linkage between the stages of the analysis, and thus makes the data analysis process more transparent and rigorous (Pope, Ziebland & Mays, 2000, Ritchie & Lewis, 2003, Braun & Clark, 2006), because the inter-related stages in the FA enable the researcher to reflect on the themes and cases by shuffling through the data until a meaningful interpretation is developed (Ritchie & Lewis, 2003). Therefore, these stages are considered to be central to the data analysis process in application of the FA approach (Ritchie & Lewis, 2003).

For this research, the FA approach was selected for data analysis for a number of reasons. Firstly, this study entailed a large volume of descriptive data for which FA is particularly well-matched (Ritchie & Lewis 2003). Secondly, this study brought data from several sources, e.g., different groups of participants involving several means, e.g., interviews, focus groups and participant observations. For understanding of participant understanding and for transparency of interpretations, the FA approach is highly recommended (Ritchie & Lewis 2003). Thirdly, besides offering transparency and increased rigour, the FA approach has some added benefit for any novice researcher (e.g., a PhD candidate). The interrelated stages in the FA approach provide explicit guidelines for systematic data analysis which otherwise can be a “daunting and bewildering task” for a novice researcher (Smith & Firth, 2011).

Following the FA principles, the data analysis process went through the following procedures:

**Stage 1: Transcription.** Each of the audio files of the KIIs and focus groups was transcribed verbatim by the researcher in Microsoft Word using AvroKeyboard® (iAvro for OSX; and phonetic Bengali language input method using Unicode). Every transcript was given a unique number/code to keep the anonymity of participants. This was done on an ongoing, day-to-day basis. Some transcripts were then translated into English, but later, at the second step, when the researcher shared her initial interpretation of meaning with the participants, some disparities and difficulties appeared. While some participants did not understand English very well, others found that actual meaning of what they said was changed in some cases. Therefore, for the actuality of meaning and transparency of interpretation, the transcripts were not translated in English. This did not create any difficulty as the researcher's native language was Bengali.

**Stage 2: Familiarisation through immersion in the data.** As the transcriptions were being prepared, they were printed and were then read and reread by the researcher on an ongoing basis. The research diary and participant observation notes were also taken into account. At this stage, initial interpretation was made on each transcription with the researcher's self-reflective question, "what is the participant actually trying to describe?" Therefore, to increase transparency and reduce the likelihood of misinterpretation, in the final stage the researcher shared her interpretation with the participants for their feedback and updated the interpretations where applicable.

**Stage 3: Coding.** At this stage, participants' views were summarised by developing codes and categories within the transcripts as they emerged from careful reviewing of each line of the

transcripts. For this, the researcher used printed versions of transcripts. Key phrases were highlighted, and the researcher's initial thoughts were recorded in handwritten comments in the margins. Key phrases were summarised using 'in-vivo codes' (i.e., quoting actual phrases). In application of the FA approach, in-vivo codes are highly recommended by experts as this helps to stay "true" to participants' views (Ritchie & Lewis 2003).

**Stage 4. Developing an analytical framework.** At this stage, the researcher started to collect all the in-vivo codes together and list them in a structured table, along with information on data source, e.g., unique transcription code, page and line numbers. Therefore, it required a longer time and continuous back and forth between Stages 3 and 4. As the dataset was being organised this way, a coding matrix started to form.

The coding matrix was continuously revised and updated throughout the process. With the progression of the coding matrix, as the number of in-vivo codes increased, a recurrent group of in-vivo codes was transformed into a single category. As the number of categories increased, they were grouped together to form sub-themes. Finally, a group of sub-themes merged into a refined theme. At this point, an applicable analytical framework matrix was developed.

**Stage 5. Summarising and charting data into the analytical framework matrix.** At this stage, data were summarised according to the themes of the analytical framework. This required charting the theme-related data and associated initial interpretations (Stage 2) within the framework matrix. As the summarisation process progressed, the preliminary fragmented interpretations (from Stage 2) began to develop into more meaningful explanation.

**Stage 6. Descriptive interpretation of data.** At this stage, the data were interpreted

collectively according to the themes of the analytical framework. At the end of the analysis process, the major themes were then interpreted from the Activity Theory perspective (Engeström, 1987). This captured the ‘whole picture’ of the research problem while grounded in participant description. It was achieved by repeatedly referring back to the original transcripts and to the initial interpretations in Stage 2. The final interpretation emerges through the description of findings presented in Chapter 7.

Thus, the application of the FA approach has made the data analysis process transparent and true to participants’ views. Amalgamation of the Activity Theory perspective within the interpretation has increased the credibility of the findings while being supported by a widely accepted theory.

## **5.7. Ethical considerations**

Ethics are key concerns when it comes to research with children (Harcourt & Quennerstedt, 2014; Morrow & Richards, 1996; Spriggs, & Gillam, 2019; Thomas & O’Kane, 1998). This research was approved by the Central Queensland University (CQU) Human Research Ethics Committee (HREC) (reference no.: 0000020758; 0000020884). Securing ethics clearance through such a narrow bureaucratic procedure itself is problematic and often discouraging to a PhD candidate (e.g., Chew, 2020). Such situation, as Kellehear (1993) remarked, “may abrogate the researcher from the responsibility of seeing ethics as part of the ongoing process of research” (p. 13). However, while anticipating the thorny ethical dilemmas on the one hand, the researcher was determined on the other to overcome these barriers for the sake of the quality of the research with its inherent idea of giving children a voice in the study. Besides complying with the CQU standards, this research followed best practices from Morrow and Richards (1996), Thomas and O’Kane (1998), Bradbury-Jones and Taylor (2015), Harcourt and

Quennerstedt (2014), Groundwater-Smith, Dockett and Bottrell (2015) and Kim (2016), with further added ethical principles practical for the socio-cultural context.

**Table 5.4. Ethical principles and their implementation**

<b>No.</b>	<b>Principle and Process</b>	<b>Implementation</b>
1	Information sheet and consent form	Provided in hard copy written in Bengali to the children participants and to their parents and teachers.
2	Informed consent	When involving children consent is sought from teachers, parents and child participants in written format.
3	Voluntary Participation rights	Participants were clearly informed that their participation was voluntary and thus provided with a clear choice of commencement with the right to withdraw from part or all of the activities at any time.
4	Privacy	Participants were advised about the anonymity of their identity and this has been strictly maintained all through the research process.
5	Verbal Consent	Verbal consent was sought on the spot from all participants before commencement of each event.
6	Verbal explanation in child friendly language	Participation procedures, participant rights and research objectives and utilisation were explained in plain language to children before commencement.
7	Considerations of power dynamics	Methods were carefully reviewed and designed to create a power balance between the adult researcher and child participants. During the first round of child participation in focus groups, children had the power to influence the design and process. I took those suggestion in action by including more interviews and importantly involving children in data analysis (as they suggested). During the second round of child participation (during the focus group style data analysis workshop), children also had the full power of recruitment and leading activities while I acted as a passive observer.
8	Local cultural sensitivity and appropriate conducts	Being born and brought up in Bangladesh, the researcher had full socio-cultural cultural knowledge. She implemented this appropriately.
9	Familiar environment	All the activities were organised in the children's school setting.
10	Managing emotional distress	Each activity took place in the presence of a physical education teacher.
11	Decision making power	Children took the lead in making plans for activities and executing them.
12	Working with children check	The researcher applied and received a Victorian Working with Children Check for voluntary purposes.
13	Police check (criminal) in Bangladesh	Prior to the commencement of data collection, the researcher went through the criminal check procedure and received a full police clearance report in Bangladesh.
14	Children's right to be heard	A complete chapter has been written by the children based on their findings, including another large section in the Conclusion chapter.
15	Additional ethical justification	If not involved in this research, the child participants in this study would not have a similar opportunity to learn about DRR and make further positive changes to their school, households and community.

While adult participants were involved in interviews in this study, children participated as co-researchers through focus groups and focus-group-style data analysis workshops. Involving children as co-researchers is grounded in sound literature, including the underlying ethical concerns, justifications and recommendations (e.g., Bradbury- Jones & Taylor, 2015; Conolly, 2008; Hunleth, 2011; Kim, 2016; Morrow & Richards, 1996; Thomas & O'kane, 1998; Willumsen, Hugaas & Studsrød, 2014). To clear any confusion that arises with the 'children as co-researchers' definition, Spriggs and Gillam (2019) assert that "the child may also recruit other participants. Co-researchers are not the initiators of or responsible for the research project." (p.5); and they recommend that adult researchers to be more reflexive during the research process. Addressing the ethical debate in including children as co-researchers, Kim (2016) pointed out an additional ethical justification for the researchers: to consider the learning benefit for the children from their involvement as co-researchers, which otherwise may not happen. Nevertheless, the power imbalance between the adult researcher and the children co-researcher is well recognised, as Morrow and Richards (1996) say:

The biggest ethical challenge for researchers working with children is the disparities in power and status between adults and children. (p. 98)

Although there is literature about ethical concerns for involving children as co-researchers, it can be challenging to draw specific ethics information for child participatory data analysis. Addressing the ethical concerns in involving children in data analysis process, Morrow and Richards (1996) propose:

Using methods which are non-invasive, non-confrontational and participatory, and which encourage children to interpret their own data, might be one step forward in diminishing the ethical problems of imbalanced power relationships between researcher

and researched at the point of data collection and interpretation. (p. 100)

Therefore, several techniques were implemented in creating opportunities for children to partake in the interpretation and analysis of data as empowered, independent co-researchers. Since the researcher's main focus was on creating power balance, rather than implementing her own choice of method, she decided to leave it to child participants. Hence, she let them choose their own method of participation, which would enable them to make their own decision about recruitment of more participants, utilising data analysis instruments of their choice and following their understanding and interpretation. The researcher's initial assumption was that the children would be organised in a "focus group" manner (Kitzinger, 1994), because, she anticipated that, in this way, the child participants could "collectively reinterpret" the data already brought from the interviews, focus groups and participants observations (Thomas & O'Kkane, 1998). But later, during the actual focus groups, when the children were empowered to take the lead, it turned out to be more of a workshop-style group venture. In such a situation, where an adult researcher would be more 'work-focused', children were more relaxed and 'fun-focused'. Thus, this provided the adult researcher with an opportunity to learn from the children how to implement research methods in a way which was "cool and fun but not boring" (similar findings are also reported in Johnson, 1996; Narayanasamy, Dwaraki, Tamilmani & Ramesh, 1996; Thomas & O'Kkane, 1998). From this, she also learned that certain aspects of data and research findings that an adult researcher may overlook or consider unimportant can be essentially significant from children's viewpoints. This is not possible without involving children as co-researchers in research about children. Finally, recognising the ethical concern on co-researcher rights, the researcher invited the children to write a chapter based on their experiences and findings which is included in this thesis (Chapter 6).

Regardless of the ethical justification discussed above, this research, like any with active child-participation, can generate thorny ethical dilemmas, the crucial one being children's involvement as co-researchers and accessing research data (although anonymous). While aware of this, the researcher was motivated by Sandlin, Quiroga and Hammerand's (2018) response to such challenges:

Rather than intending to solve problems or tensions inherent in anti-oppressive research, we should highlight and explore our own ethical "failures." (p. 64)

Although this research emerges from a different methodological perspective than that of Sandlin et al., the lessons from the inherent "ethical failure" can nevertheless direct us to opportunities since it is crucial for humanising critical epistemological and methodological difficulties (Visweswaran, 1994).

## **5.8. Conclusion**

This chapter outlined the philosophical and methodological positioning of the thesis. Qualitative research grounded in a social constructionist stance was identified as the methodological framework. The data collection methods consisted of an array of qualitative methods, including interviews, participant observations, focus groups and child participatory data analysis workshops. Triangulation and reflexive techniques helped to increase the credibility of data and the acceptability of results. While the study involves both adult and child participants, a group of children were engaged as co-researchers. The wide range of data required a "Framework Analysis" approach for data analysis. Finally, the ethical concerns regarding child participation have been addressed. The next chapter presents the findings from the children's perspectives and is largely written by the child co-researchers.

## CHAPTER 6

### ODE TO CHILDREN

*I believe that children are our future;  
Teach them well and let them lead the way.  
Show them all the beauty they possess inside.  
Give them a sense of pride, to make it easier.*

~ Linda Creed & Michael Masser (1977),  
*The Greatest Love of All*

#### DECLARATION OF CO-AUTHORSHIP AND CO-CONTRIBUTION

**Title of the Paper:** N/A

**Full bibliographic reference:** N/A.

**Status:** N/A

**Nature of Candidate's and Co-Authors' Contribution, Including Percentage of Total:** This chapter results from a participatory action research (PAR) effort where the candidate has facilitated a process where the child authors of this chapter have been put in the driving seat. In agreement with the ethos of PAR, the candidate has organised and fostered focus group discussions, where ideas were compiled, knowledge created and writing entirely done by the children. As such, percentage split cannot be applied to the actual written piece.

## **Prologue: A Note from the Adult Researcher (PhD Candidate)**

In this research, the most pivotal role is held by children. This chapter celebrates the participation of children and their valuable contribution as co-researchers in the study. Accordingly, the core subject matter of this chapter is the depiction of findings of the research through the lens of children in their own voice.

Participation of children in research has long been a question of ethical debate. This question is bound to arise as children are found to be more vulnerable to unequal power relationships with adult researchers, because there is considerable age gap between children and adult researchers (Balen, Holroyd, Mountain & Wood, 2001; Coyne, 1998; Flewitt, 2005; Hill, 2005; Punch, 2002a; Robinson & Kellett, 2004). Since the power inequalities between child participants and adult researchers are inevitable for obvious reasons – the age differential and the lack of experience of children in the field of research compared to their adult counterparts – experts suggest the intriguing idea of seeking children’s assistance in understanding their perspectives, instead of merely regarding them as research objects (Mayall, 2000). Considering the role for active child participation, this study attempts to empower children by giving them the opportunity to conduct the study as co-researchers. This research involves children themselves in research activities ranging from data collection to analysis, and, importantly, documenting the findings. In an attempt to effectively minimise the power differential, the study incorporated child-friendly methods and techniques which built on children’s competencies and interests and ensured that the children had support from each other if they so wished (Barker & Weller, 2003; Brooker, 2001; Eder & Fingerson, 2003; Morrow & Richards, 1996; Mauthner, 1997; Punch, 2002a).

The field-level study of this research was conducted in Bangladesh. At the beginning of

data collection, the study comprised observation of five events of CC-DRR programs and 24 Key Informant Interviews with CC-DRR practitioners from NGOs and government officials from the Ministry of Education, Department of Disaster Management, Department of Primary Education and Local Government units. It included 53 children from Dhaka (26 boys and 27 girls) who have participated in CC-DRR programs with Save the Children Bangladesh), by way of eight focus groups. In the focus groups, children shared their experiences and learning from CC-DRR and the school DRR/DRR curriculum. They also provided opinions and suggestions for shaping the study. Thus, in the next step after the field-level study, research advanced to the second phase where 24 co-researcher children from Brahmanbaria, Bangladesh (12 boys and 12 girls who had never attended CC-DRR program) participated with great enthusiasm in analysing the data collected during the first phase (see Chapter 5).

This chapter has been written by the 24 co-researcher children. It has been fashioned in the way that the children wanted it to be. They have spoken and written in Bengali, but they also intermittently used some English phrases. The Bengali language has subsequently been translated in English by the researcher, keeping any English phrases as they were. In doing so, utmost care has been taken so that the simplicity, authenticity and, most importantly the originality of their expressions remained the same. Consequently, readers can expect some unusual grammatical expressions, some spelling mistakes, and some use of capital letters in the middle of sentences. Similarities of the text colours have been retained. Children's voice has been represented in *Italics*. When there is a chance of confusion of meaning due to misspelling or phrasal expression, the correct word is provided by the adult researcher in black letters in non-italic texts.

## Through the Voice of the Children

### Who Are We?

We are children from a little village name Tarua. It is situated at Ashuganj Upazila in Brahmanbaria district, Bangladesh. Our names are here below, only pseudonym! So, we are unidentifiable. LOL! We put our names alphabetically because we are all equal, not because one person did more than another person 😊

No.	Girls 	No.	Boys 
1	Eti	1	Abra
2	Mukto	2	Anan
3	Ferdou	3	Lalu
4	Kobi	4	Muttas
5	Progu	5	Protu
6	Purni	6	Pu-locked
7	Run	7	Rai
8	Sal	8	Rohmot
9	Shan	9	Shaj
10	Shiu	10	Shaw
11	Eeshi	11	Shohag
12	Ton	12	Tanmo

### Introduction

Welcome to our Story! We will give you lots of photos. Oh, we love photos. We love colours! We are giving consent and our parents and teachers also agreed for us to share the photos. We are sorry we could not share the photos with the boys who worked with us. Unfortunately, we do not have boys' pictures working together. But all of us worked together, both boys and girls, big kids and little kids and few kids who do not go to schools. These are what you will find in this story:

- **Firstly**, we will tell you a little bit about the data analysis workshop we did with Mayeda.
- **Secondly**, we will tell about an event at our school where we shared our workshop experience and learnings with all the students, teachers, government people and the whole community. Mayeda was also there.
- **Thirdly**, we will give you the main thing: result of data analysis.
- **Finally**, we will share what we have been doing in our school and community after Mayeda left Bangladesh and came back to Australia after the workshop. We are the Champions of DRR!  
!

Please read our story below. Hope you enjoy reading it as much as we enjoyed doing it! So, if you are a little one or a little bit bigger kid reading it, know that you too can do so much in DRR and Climate Change and if you are a grown-up reading it please please please let the

*kids come and make decisions and work in DRR and climate change. Thank you. Have fun!!*  
😊😊😊

### ***Data Analysis Workshop***

*Mayeda told us that she is a student. We are students too. But Mayeda said that because we are children, we know more about children, we can think better, and we know better, have fresh ideas, and so she requested us to work with her as co-researchers. We have been very happy working with Mayeda. We helped Mayeda with her research, but she also helped us with many things. We requested her to help us with our English speaking. Every day after workshop, we were practising Englishspeaking with Mayeda and had lot of fun stuff. One day, we talked to Mayeda's PhD supervisor Professor Kevin Ronan in Skype from Mayeda's laptop when we were doing workshop. It was a very big thing for us. Kevin praised us. This was first time we ever spoke in English with an English-Speaking people. But we felt very confident as we are Mayeda's co-researchers and colleagues. Kevin also encouraged us. We did not have an email address before. But Mayeda helped us opening our email address. Farzana sent Kevin an email. Kevin also replied her. This inspired all of us. We want to have many opportunities like this. We are very happy to do this with Mayeda. Here are some photos from our data analysis workshop.*



**Photo 6.1. We are busy reading scrips and asking many questions to Mayeda when we were not getting it clearly.**



**Photo 6.2. Some of us busy writing data analysis result. You see we are divided in two groups. Location of this photo is at our former Headmaster's House. Some days we worked at her house because we love**



**Photo 6.4.** Little curious kids from the workshop with Mayeda. They had so many questions and Mayeda is trying to explain them by showing pictures and animations.



**Photo 6.3.** Sometimes we had to roll over to reach stuff! Just kidding ☺ Because other kids are too much focused in reading scripts to pass that.



**Photo 6.5.** In this Photo you can see a little girl (8-year-old, class II) writing analysis result. She also worked with us. Most of us were big kids from high school but we never let the little kids feel fear in the workshop. We valued other's opinions.



**Photo 6.6.** Then one day all of us- the workshop kids had a picnic together; we cooked and ate together. We had so much fun!

### ***Community Gathering in our School – Tarua Girls High School***

*By doing the data analysis workshop, we learned a lot of things. We have never participated in any CC-DRR program. But from reading all the scripts from the interviews with the NGO people, Government people, Mayeda's notes from observations, especially the scripts of the focus groups research with other children like us, we have learned a lot. We have become very inspired. We decided to work for DRR in our school and community. The day when we finally finished writing all the mountain papers for data analysis, the next day we had a big event in our school in Tarua Girls High School – our Annual Cultural Day and Award giving ceremony for sport and cultural cooperation, Mohsena Khanam Scholarship, etc. It is organised in open field. All the parents, teachers, school management committee, our brothers and sisters, many other children community people and invited government people come here. So, we decided to share our experience in during this time. We talked to our Headmaster and Sports Teacher to give us some time. Finally, they gave us some time during the event. All of us went to the stage (boys did not) then some of us gave speech about our experience, we also did a little acting about DRR. Then we shared our exciting plan that we*

too can do something like the kids from the focus groups. But we will do it by our own. All the audience were praising us and clapping for us. We also called Mayeda to the Stage. She is also a former student of Tarua Girls High School. Everybody was very proud of us and Mayeda. Then very quickly we told about some hazards and risks in our school and community. We requested the government people and the school management committee to fill in the big pond in front of our school. Because it is a very big risk of drowning, especially in the rainy season because it is full to the brim and almost gets flooded. Even, one day our Maths teacher fell on the pond when he was riding a bicycle coming to school. Luckily, he knew swimming. Otherwise he could be dead by now. Here are some pictures from that day. Hope you like them. :)



**Photo 6.7. Some of us while talking about our experience at the community gathering day event!**



**Photo 6.8. Some with Mayeda on the stage. Little kids got Balloons from Mayeda and the big kids got pens and hair bands!**

### *Findings from the Data*

*Here we will present the findings from the data analysis. We spent first week reading some of the scripts. We talked to Mayeda about all what these scripts about. Mayeda explained to*

us her study in a very fun way. We came to know about the aims and objectives of this research. It was so inspiring to see that kids like us are also doing so many things for the world, for other kids and their communities. So, this study is about how to make all the kids to be more happily participating in disaster management thingy and to know about how kids want to learn DRR stuff, what they like and dislikes and what grown up can do for us. She explained to us what the NGO people, Government people and kids talk about in the interviews, focus groups and observations. So, when we were reading the scripts it was not very hard to understand. But every time we were confused, we asked Mayeda a lot of questions and she made it all clear for us.

From our reading of the scripts we found out some themes. Then we found some more themes within the main themes. After that we drew tables in big papers and use lots of colourful pen to write about them. At first, we did not have big mountain papers. So, we added pages from our notebook with glue stick and made big papers. But later on, our school, Tarua Girls High School, gave us lots of colourful/mountain papers and we wrote on that. Here you can read about all the interesting findings we brought out from Mayeda's study. Hope you will find as exciting as we found. Thank you.

**Theme 1: What CC-DRR program elements are responsible in generating what specific positive outcomes?**

- **Program Elements and Outcomes: From Focus Group Discussions with Girls**

PROGRAM ELEMENT	DESCRIPTION	OUTCOME
01 Tree Plantation	We make a garden in our own school	Like the most
02 Student council	We made a student council, we selected our group members.	Like the most
03 Competition (debate, dance, and songs)	We have learned many things and we have been to school with others.	Like the most very much.
04		
05		
06 Community awareness	We went to a rally with our teachers with a banner and posters. People wanted to know what we are doing. Then we replied that we try to increase the awareness about disaster (and) about disaster (and) about disaster.	Everybody don't live it

ELEMENTS	OUTCOME	COMMENTS
04 Lecture	...	...
08	...	...

**Table 6.1. Program elements and outcomes: from FGD with girls**

<i>SL</i>	<i>ELEMENTS</i> (names/types of the CC-DRR components)	<i>OUTCOME(S)</i>	<i>COMMENTS</i>
01	<i>Tree Plantation</i>	<i>We make (made) a garden (nursery) in our own school</i>	<i>(Kids) Like (it) the most</i>
02	<i>Student Council</i>	<i>We made a student council (in our school). We selected (elected by voting) our group members (council member)</i>	<i>(Kids) Like (this) the most (very much)</i>
03	<i>Competition (Art/debate/dance/and songs)</i>	<i>We have learned many things and we have learn(ed) to adjustment with other (do team work on DRR)</i>	<i>(Kids) Like (it) the most very much</i>
04	<i>Drill (/) Simulation</i>	<i>We know how to fight with fire and how to use fire extinguisher, stretch (stretchers)</i>	<i>(Kids) Like (it) the most very much</i>
05	<i>Hygiene kits</i>	<i>By first aid's training now we can help to other and how to (do) dressing.</i>	<p><i>Very useful.</i></p> <p><b>Urmi:</b> "One day my little brother fell off the bed while playing and hurt his nose and it was bleeding. At that time, I took cotton ball from the first aid box and clean (dressing) his blood. I also explained him how to do the first aid."</p> <p><b>Reza:</b> "Now our school provide bins and we go to every class and aware them to use dustbins and not to litter."</p>
06	<i>Community Awareness</i>	<p><i>We went to a rally with our teachers with a benar (banner) and fastons (festoons). People wanted to know what we are doing. Then we replied that we try to increase the awar(e)ness.</i></p> <p><b>Safa:</b> "Though we are very enthusiastic to teach our family members (parents and elders), they do not show any interest. If we try to aware them about this issue (DRR) they say that disaster is not happening now, and you better do your studies. They also say that we know better than you as we have passed your age long ago (we are older than you)."</p>	<i>Everybody don't (doesn't) like it</i>

07	Lecture	<p><i>We do not get to watch any interesting/funny or educational videos through lectures.</i></p> <p><i>Moreover, repetition of the same lectures (same topics) is monotonous and we get bored.</i></p>	<p><i>Dislike it the most (Of all the CC-DRR elements we have participated, we dislike lecture the most)</i></p> 
08	<p><i>Visit and Discussion with People from fire service and Civil Defence</i></p>	<p><i>i) "On rainy days mothers hang out wet clothes on lines over the gas stoves. In our previous training they forbid us to do so. This creates a risk of fire. So, this time as I saw clothes hanging on top of our stoves, I took them down and spread them on the lines on our rooftop." (Mirpur Ideal Girls' High School, page-07)</i></p> <p><i>ii) One day my younger sister was standing holding the grill of an open window and watching rain (storm). I told her do not do it because, an accident can happen any time (lightning/thunder)." (Mirpur Ideal Girls' High School, page-07)</i></p> <p><i>One day, we were at the ground floor while there was an earthquake. When I felt the shake, I told my elder sister about it. She started to run here and there. I told her not to do so. This is not right thing to do and we should stay calm. But she did not listen to me. After that, I turned off the stove and calmly came out of our house taking my sister with me."</i></p>	<p><i>This element was educational and fun. Everyone enjoys it.</i></p>

• **Program Elements and outcomes: from FGD with Boys**

FGD BOYS (PROG. ELEMENTS)		FGD BOYS (PROG. ELEMENTS)	
SL	ELEMENTS	OUTCOME	COMMENTS
01	GROUP DISCUSSION	Group discussion was conducted about DRR elements. - Participants were asked to share their views on the elements we have participated in. - They shared their views on the elements we have participated in.	01-Group discussion was conducted about DRR elements. - Participants were asked to share their views on the elements we have participated in. - They shared their views on the elements we have participated in.
02	DRILL SIMULATION	01- Participants learned how to use fire extinguishers. 02- Participants learned how to use fire extinguishers. 03- Participants learned how to use fire extinguishers. 04- Participants learned how to use fire extinguishers. 05- Participants learned how to use fire extinguishers.	02- Participants learned how to use fire extinguishers. 03- Participants learned how to use fire extinguishers. 04- Participants learned how to use fire extinguishers. 05- Participants learned how to use fire extinguishers.
03	DEBATE COMPETITION	01- Participants learned how to use fire extinguishers. 02- Participants learned how to use fire extinguishers. 03- Participants learned how to use fire extinguishers. 04- Participants learned how to use fire extinguishers. 05- Participants learned how to use fire extinguishers.	03- Participants learned how to use fire extinguishers. 04- Participants learned how to use fire extinguishers. 05- Participants learned how to use fire extinguishers.
04	CULTURAL PERFORMANCES AND COMPETITIONS	Anti-rampant competition was conducted. - Participants were asked to perform a cultural program. - They performed a cultural program.	04- Cultural performances were conducted. - Participants were asked to perform a cultural program. - They performed a cultural program.
05	GIVING FIRST AID BOX AT SCHOOL AND FIRST AID TRAINING	First aid box was given to the school. - Participants were asked to give first aid training. - They gave first aid training.	05- First aid box was given to the school. - Participants were asked to give first aid training. - They gave first aid training.

SL	ELEMENTS	OUTCOME	COMMENTS
08	CHILD Parliament	শিশুদের মতামত জ্ঞান করা। শিশুদের মতামত জ্ঞান করা। শিশুদের মতামত জ্ঞান করা।	শিশুদের মতামত জ্ঞান করা। শিশুদের মতামত জ্ঞান করা। শিশুদের মতামত জ্ঞান করা।
09	HYGIENE	শিশুদের মতামত জ্ঞান করা। শিশুদের মতামত জ্ঞান করা। শিশুদের মতামত জ্ঞান করা।	শিশুদের মতামত জ্ঞান করা। শিশুদের মতামত জ্ঞান করা। শিশুদের মতামত জ্ঞান করা।
10	Lecture	শিশুদের মতামত জ্ঞান করা। শিশুদের মতামত জ্ঞান করা। শিশুদের মতামত জ্ঞান করা।	শিশুদের মতামত জ্ঞান করা। শিশুদের মতামত জ্ঞান করা। শিশুদের মতামত জ্ঞান করা।
11	Urban planning	শিশুদের মতামত জ্ঞান করা। শিশুদের মতামত জ্ঞান করা। শিশুদের মতামত জ্ঞান করা।	শিশুদের মতামত জ্ঞান করা। শিশুদের মতামত জ্ঞান করা। শিশুদের মতামত জ্ঞান করা।
12	HYGIENE	শিশুদের মতামত জ্ঞান করা। শিশুদের মতামত জ্ঞান করা। শিশুদের মতামত জ্ঞান করা।	শিশুদের মতামত জ্ঞান করা। শিশুদের মতামত জ্ঞান করা। শিশুদের মতামত জ্ঞান করা।
13	DAY OBSERVATION	শিশুদের মতামত জ্ঞান করা। শিশুদের মতামত জ্ঞান করা। শিশুদের মতামত জ্ঞান করা।	শিশুদের মতামত জ্ঞান করা। শিশুদের মতামত জ্ঞান করা। শিশুদের মতামত জ্ঞান করা।

Table 6.2. Program elements and outcomes: from FGD with boys

SL	ELEMENTS	OUTCOME(S)	COMMENTS
1	Tree Plantation	<p>i) A garden has been made on the rooftop (of our school building).</p> <p>ii) We planted trees in the open unused ground in front of our school.</p> <p>iii) Our neighbours are also planting trees being inspired by us.</p> <p>iv) Our environment has turned much greener than before.</p> <p>v) We have planted 2000 trees (made a nursery) on school rooftop. (Narayanganj High School)</p> <p>vi) Arafat: “By doing tree plantation we are decreasing the amount of C02 and increasing the amount of O2.”</p> <p>vii) Joy:            “If the amount of O2 decreases and the amount of CO2 increases then the temperature of the Earth increases. As the world temperature is getting higher, we are facing many problems. CFC gases will be also cleaned by planting trees.”</p> <p>viii) Hridoy: “In places where there are many trees, it rains more there. In the drought prone areas of Bangladesh, where there are crop fields, there will be more rain if there are many trees around them. The main point is where there are more trees, there is more rain and where there is more rain, there is good cultivation.”</p>	We enjoyed it
2	DRILL /SIMULATION	<p>i. We learned in the most enjoyable way.</p> <p>ii. DUCK-COVER- HOLD ON</p>	<p>i. Have been done in our school</p> <p>ii. Everyone like(s) it</p>

		<p>iii. <i>PRACTICALLY LEARN</i></p> <p>iv. <i>WE KNOW What to do when there is a fire.</i></p> <p>v. <i>Using fire extinguisher</i></p> <p>vi. <i>How to give first aid to injured persons</i></p> <p>vii. <i>How to give first aid to injured persons</i></p> <p>viii. <i>What to do to stay safe during fire and earthquake</i></p> <p><i>Anas: In this program we have been shown many things practically. For example, how to use a fire extinguisher when there is a fire. Also, they taught us some basic techniques using what we can stay safe. I liked that.</i></p> <p><i>Anas: During the month of Ramadan, when there was an earthquake my siblings were panicked and started rushing to here and there. At that time I told them to stay their head calm and that the earthquake will stop soon. We have a strong table in our house. I told them to go and stay under the table. Further steps could be taken when the earthquake would stop. Earthquake continued for about 15 minutes. When the earthquake stopped, we went to the roof of our house. Because, if we stay at the room, we may get injured but at least we would not die. If there is an earthquake, there is possibility of a second one. I learned this from my father.</i></p>	<p><i>very much</i></p> <p><i>iii. Delivered by Fire Service &amp; Civil Defence</i></p>
3	Debate Competition	<p><i>i) Students from different schools come together.</i></p> <p><i>ii) Sharing of knowledge about disaster in pleasure.</i></p> <p><i>iii) Those who listens the debate are also aware of the issues.</i></p> <p><i>iv) Other children are also inspired.</i></p> <p><i>v) Students from Narayanganj came to Dhaka and participate in the debate competition on this issue with students from many different schools.</i></p>	<p><i>Most (of the children) like debate but still there are some children who do not like it.</i></p>
4	GROUP DISCUSSION	<p><i>i. Those who do not know about disaster can know about it through Group discussion. On the other hand, those who know about disaster can deliver their knowledge among others.</i></p>	<p><i>i. As the same age children share together, they can learn easily and faster. And like it very much.</i></p>
5	CULTURAL PERFORMANCE AND COMPETITION E.G. Dance/Song/poem recitation/Art/Drama/Action	<p><i>Went to the art competition. Like it so-so. Want to do it more.</i></p>	<p><i>It seems that participation of boys in cultural related activities is lower than the participation of the girls.</i></p>

6	GIVING FIRST AID BOX AT SCHOOL AND FIRST AID TRAINING	<p>i) Learned how to use first aid.</p> <p>ii) We could use it for free as we had a first aid box in our school.</p> <p><b>Evan:</b> "One day while in the playground, I accidentally hit my friend's head with a bat. There was a lot of blood. At first, we did not understand that he was injured. But after a while we saw there was blood coming out. Then we took Gauze from the school's first aid box and took him to the hospital with an ambulance." (FGD 6: 2<sup>nd</sup> page)</p> <p><b>Himel:</b> "As his friend got hurt in his hand, he took Savlon from the school's first aid box and cleaned the wound and put a One Time use bandage on it." (FGD 6: Page no 2 of 4)</p>	<p>i. Students are using first aid box with pleasure.</p> <p>ii. Both teachers and students should be given proper first aid training.</p>
7	STUDENT COUNCIL	<p>i. In Bangladesh it is mandatory to develop Student Council at every Primary and Secondary school. This platform can be utilised to work on DRR issues.</p>	<p>Students enjoy this Council very much.</p>
8	CHILD Parliament	<p><b>Ariyan:</b> I could express the ideas I had in me through this. This is why I liked it. I liked the child parliament of Safe (Save) the children very much. There was talk about what sort of problems we have in the coastal areas of our country. Usually, cannot get such opportunity. (FGD 6: Page 1 of 4)</p>	<p>This opportunity should be broadened up.</p> <p>Students like this very much.</p>
9	Knowledge about HYGIENE	<p>i. We got first-aid equipment's through this program.</p> <p>ii. Because of the practically training of first aid we can give first aid now.</p> <p>iii. How to bandage when someone break their hand, wounds their head. How to prevent if we get a disease or other health related issues. How to keep us clean and hygiene.</p> <p>iv. Special arrangement has been taken for the girls. Those who were not aware of these issues have been given awareness about these things.</p>	<p>There should be a lot of awareness building actions about hygiene.</p> <p>And all, (especially girls) should be given more knowledge about this.</p>
		<p><b>Rahat:</b> A filter has been planted for hygiene and cleanliness (clean water).</p> <p>*Rahat made his brother aware of these issues. For this reason, positive changes have occurred in his brother.</p>	
10	Lecture	<p>NGO staff come. They come and give lecture. They talk about the same thing again and again. For this reason, students get annoyed. They cannot learn properly.</p> <p><b>Himel:</b> It is more enjoyable if we get to learn by doing something in real, we understand and also can remember. Because, "you cannot learn to ride a bicycle by reading books."</p>	<p>Do not like lecture at all</p>  <p>It would be better if it could be done by using multimedia or video clips or by doing role play.</p>





**Table 6.3. Program elements and outcomes: from the interviews with CC-DRR practitioners**

<i>SL</i>	<i>ELEMENTS</i> (names/types of the CC-DRR components)	<i>OUTCOME(S)</i>	<i>COMMENTS</i>
1	Tree Plantation	⇒ Kids saw the seeds of whatever fruits they have eaten and made a nursery in their school. And made their school greener.	In Narayanganj school
2	School based Drilling (Drill)	Fire and earthquake Drill(s) have been conducted in schools. They have been taught Duck-Cover-Hold.	All Interviewee(s) said this
3	School Based Student Council	⇒ In Student Cabinet at each school there is one Prime Minister, one Health Minister, one Environment Minister among kids. This has been started from 2007. Now Bangladesh Government has started practicing Child parliament. We said this child parliament was only for DRR. And now Government is doing it overall. (2.9 MOI page 4 of 12)	
4	Advocacy Workshop	MOI: We did it in our way. May be when Government came to know about it, they introduced it. This is a great thing that it is not the government who is endorsing, rather the children. As Government is considering about doing it, it is a positive outcome. We did it only for DRR. But government has changed it.  There is another advocacy for the children which is ongoing and not yet has been successful. There is a bypass road which is very dangerous for the children. Now children have been doing advocacy with the Ward Commissioner so that they can organise to build a speed breaker or a zebra crossing in there.	Because of the advocacy of the children, they have been able to make a bridge in Kurigram, and in Pirojpur children are now leader. They presented about their problems and those have been solved. (MFH 2.2 page no 7 of 7)
5	Threat (Theatre) For Development (TFD)	In TFD children act as different characters (such as, someone act as the Imam, someone as sweeper, someone as cleaner etc.) For this reason, people like TFD very much. In past there was a big appeal of TFD. But now in this age of the internet, the appeal of the TFD has been decreased. Because, children are attracted to the internet and computer many many times more than (than) TFD.	Children like this.
6	Hazard/disaster knowledge class or Lecture conducted by the NGO Staff	Our NGO staff go to different schools and deliver very important lecture. As a result, children can learn very easily. It is our staff who facilitates (facilitate) that and they are given training for that.	Children have learned a lot of DRR knowledge from Lecture.
7	Child Club (Community-based)	⇒ Child club of Community based is such a club where not only school children but also other children from the community can get benefit.  In our child club one girl wrote 3/ 4 letters to the Ward Commissioner. After that, he Ward Commissioner invited her to his office. When he asked her what the matter was, she	In Kurigram, children from 5-7 villages were not able to come to school because of a river. So, children from our Child Club decided to do

		<i>informed him that the road in our area is very broken, for what it is very hard for us to go to school and to do other stuff. Then he paused another road construction in that area and fixed that road instead. That was a good advocacy of our children. (2.8 SH Page:- 2)</i>	<i>something. They, with the help of their community people, made a bamboo bridge. Moreover, kids from this club also contacted DC (District Commissioner) and TNO (Thana Nirbahi Officer) to visit this. Then they understood that it is actually necessary to build a bridge there. So, they made a bride there.</i>
8	<i>School Safety Plan</i>	<i>There was a big canal in the location where we were implementing the project. This was in fact a river aroubf30/40 years ago. As the days passed by and urbanisation started, unplanned urbanisation, from then on people started to through garbage, plastic bags, etc. For this reason, it was even possible to walk over the river. The people of the area were annoyed by the mosquito and fly's infestation, skin problems and many other Health Hazards which was a great problem for that area. The Secretary of the Ward contacted the responsible department Dhaka WASA and organised cleaning the canal. (3.3 AA page:5)</i>	
9	<i>Student Representative in the School management Committee</i>	<i>Firstly, the hazards in an area are indented. We do different hazard specific session with them. We have session module. We create Module. We provide different types of training for our field facilitators. And, there is a responsible teacher for the two student representatives like there used to be the Sport Teachers before. In this case, we encourage the Sport Teacher to take the role because they have some free time. We have also observed another thing that other teachers usually have a better Understanding with the Sports Teachers. During teacher selection, we always look for the one who is friendly with the students. We consult with the Headmaster regarding this and ask for their suggestion. 2.6 MAHP.4.</i>	
10	<i>Knowledge Center</i>	<i>Knowledge Center is such a process through which a room or a hose is rented. Different things are kept there. Sometimes stuff members come here to discuss or look after. <b>MM:-</b> In the beginning, the disaster research (Resource) Center that we opened, we told them we will not pay the rent after one year. They said we would bear it. This is in Mirpur, Dhaka. This is one of our successes. They are bearing the cost of a room just to know information (about disaster).</i>	<i>Not only the school students but also other community members are enjoying the facilities of the knowledge centres.</i>

11	Contribution of Children in Community (DRR)	<p>ONE Road has been constructed. Kids took picture of a road and showed it to the Ward Commissioner and told him about the problem they are facing in going to school for that. They also took picture of an open dustbin and showed him. For that, the dustbin too was closed and government has organised an STC in there.</p> <p>Secondary Transparent System has been used for garbage management. Our children are doing another advocacy which is now ongoing but has not yet been successful. There is a bypass road which is very dangerous for children. They are doing advocacy with the Ward Commissioner for a speed breaker or a zebra crossing in that road. (AA2.3 Page 5)</p>	
12	National level Conference	A National level conference was arranged in Dhaka by bringing children of our project from different parts of Bangladesh. Many government officials were present there. There, children had the opportunity to present their opinions, experiences and demands before people from the policy level.	
13	Complaint box and hotline number	Hotline and Complaint box have been introduced. But these have not been properly implemented in real. The hotline number should be working and complaints from the complaint box should be evaluated more properly.	Should be implemented in a better manner.
14	Inclusion of Children in Local Government	<p>Two children were introduced with the local Union Council members. There is a disaster management committee (committee) in each Union Council.</p> <p>Though it does not directly say for including children in there, but in the policy, there is a space for including three community Member (s). Utilising that policy, Save the Children has included two children in the Disaster Management Committee (DMC) in few Union Councils.</p> <p><b><u>Best Practice- in Pirojpur</u></b> Children have identified different problems and hazards in their union and presented it before the DMC.</p>	
15	Inclusion of children in the school management committee (SMC)	Two children have been included in the SMC. As representatives of all students, they bring about different problems and hazards to the SMC and solve them.	
16	Cultural programme Debate Drama Singing Dancing, etc.	Not only children learn things by these, but also their guardians get to learn with them. Moreover, other children also get inspired to learn things like CC-DRR.	

17	<p>Awareness building Campaign and Postering (using posters)</p>	<p><i>Different campaign, rally and postering in the community are organised by participation of children. Community can learn about DRR and they can rely on children more. Moreover, community people can understand that children are capable of working on DRR issues.</i></p> <p><i>Children applied to the authority to build a road in Mirpur. The authority accepted their application.</i></p>	
18	<p>Public hearing</p>	<p><i>Children have presented their demands before different service providers during the meeting they held. One of the demands was: Children took picture of an open dustbin and showed it to the city council and after that that open dustbin was closed. Government then organised an STC in there. Secondary Transparent System has been utilised for garbage throwing.</i></p>	

**Theme 2: What are the Barriers and Obstacles NGO Practitioners Face in Implementing CC-DRR Programs?**

The image shows handwritten notes on barriers and obstacles in CC-DRR program implementation. It consists of four pages of notes, each with a table structure. The tables have columns for 'SL', 'Barriers', 'How to overcome', and 'Comments'. The notes are written in Bengali and include specific details about program challenges and solutions.

**Table 6.4. Barriers and obstacles in implementation of CC-DRR Programs**

SL	Barriers	How to overcome	Comments
1	Parents are not willing to let their children participate in Programme	Parents drop off their children at schools and pick up them up. Parents come to school to pick up their children around 10- 15 mints before. So if I want to conduct a training or session with this children they do not want to give tie. What will we do then, how is it possible? As everyone says that it is a big challenge to work in Bangladesh context, we made a plan. For that, we conducted a research involving the Resilience Director. The research was about when kids free time, among the 24 hours how much time a child spends in studying, how long they stay at home, how long they spend in playing and what they do on	

		<i>the weekend day which is Friday. (2.4 MM)</i>	
2	<i>Those who are Planner or programme designer are not from the root level.</i>	<i>Those who come to Bangladesh as advisor(s) do not have experience. But they give us advice. When they hear that I have 16 year working experience, they become surprised and understand that they do not have experience in this work. They do not have any contribution on the work in our country, neither do have any contribution in implementation. I do not feel good when they advise me. (2.4 MM)</i>	
3	<i>Lack of coordination among NGOs</i>	<i>For sustainability, it is not only the governments, but also the NGOs should keep a good coordination among them. In this case donors can also take an important role. This means there should be coordination and cooperation among government, NGOs and donors.</i>	
4	<i>It does not involve any child psychologist during programme design and direction</i>	<p>⇒ <i>Some of the NGO interviewees (6 out of 10) think that there is no need of child phycologist. Their staff understand children enough</i></p> <p>⇒ <i>But the rest think that in child program designing, it is important to involve psychologists. (2.4. MM)</i></p>	<i>It is needed to have Psychologists</i>
5	<i>The main focus is project purpose serve than the benefit of children</i>	<i>We bring a bunch of children to include in CC-DRR programs. When during a round table discussion or in a meeting, a minister or policy makers comes, we bring some children by teaching them to say that they need this and that. But we never think to let them think what actually they want or what we consider they need whether they need that at all.</i>	<i>Children should be given chance to speak of their own.</i>
6	<i>Projects are not being sustainable</i>	<p><i>Projects do not sustain because of their (short) duration. But if the projects are long-term instead of (short) duration based they will sustain.</i></p> <p><i>Organisation(s) can take three more years to follow up even after finishing a project. Another way is if there is a commitment from the community people, local organisation, student council, care group, volunteer, local organizer (organisers) and they take some responsibility. If a project is for 5 years, donors can take 10 years to see the outcome. It is also needed to ensure to monitor and evaluate the condition of kid's knowledge after 10 years.</i></p>	<i>If the community become aware it is possible that the projects will be sustainable.</i>
7	<i>The participation of teachers should be increased in the prog. (program)</i>	<i>Teachers are necessary to be included in the children's programs. Because, program's class is only for one day, but teachers can monitor children 6 days of a week.</i>	
8	<i>Adult mind set</i>	<p><i>Often it has been observed that children's gradians or the elderly people in the society believe that kids are not capable of doing anything specially, they cannot contribute in disaster management by working on this.</i></p> <p><i>But they work together with children they agree that children also can do. To change their such conception, the they also should be in involved. (2.7 SP)</i></p>	

9	<i>CC-DRR is not working in Madrasa and English-medium</i>	<i>CC-DRR's works are not involving the Madrasa and the English-medium. For this reason, a big Target is being Miss (missed). And, as Madrasa is not Mainstreaming, they are not included.</i>	
10	<i>Lack of skill of the Designated person for Monitoring.</i>	<i>The responsible person for monitoring of program's quality and outcome has to be made skilled by giving them proper training.</i>	
11	<i>Gender Discrimination</i>	<i>Gender discrimination must be stopped. Many parents are not willing to let their daughters participate, girls and boys do not want to work together is it is a combined school. Such problems are not faced if in a Girls school. To work in DRR, gender discrimination must be tackled.</i>	
12	<i>Addiction to Mobile and Internet</i>	<i>At present, there are many sorts of entertainment through Mobile and Internet. For this reason, children have very less interest in CC-DRR program. So, this program must be designed to create full of fun and joyful learning for kids.</i>	
13	<i>The obstacle against involving teachers-  Overload of duties- taking class, Election duty, Counting of Population, etc.</i>	<i>In our Bangladesh context, teachers take different trainings after joining their jobs.  For example: CCDRR, SRHR. We try to provide different trainings for some teachers from few schools, like how to take class, how to give lesson, etc. By doing this we try to decrease their load so that they can change their old ways of teaching. They can participate in programs like CC-DRR with pleasure. (2.7 SP pg- 7 NGO/Plan) ⇒ There are some advantages in getting opinions from the teachers but there are disadvantages as well. They need to be given motivation, some of them do not want to involve, some want to do with the hope of some benefit but get demoralised if not get any benefit. (2.4 MM pg 14 NGO/Mus aid)</i>	
14	<i>DRR Education is not a separate subject in the schools (though there are some DRR topics across different subjects)</i>	<i>Some teachers understand the matter and they get interested. It is necessary to allocate a Disaster related teacher in schools. In a school there will be a designated teacher only when there will be a designated subject. When it is included in the school curriculum, there will be teacher for it, if there is no particular subject, there is no particular teacher, for example, a Mathematics teacher is for the Mathematics subject, Physical Education teacher is for the Physical Education subject. Ultimately, it has to be in the curriculum then there will be designated teacher. (2.4. MM pg-14 NGO/Mus aid)</i>	

### Theme 3: Role of Schools and Teachers in Implementing CC-DRR program

**NGO INTERVIEW (Role of school & role of teachers)**

Sl. No	QUESTIONS	ANSWERS	COMMENTS
01	Role of School in CC-DRR Programme?	⇒ CC-DRR এর বিভিন্ন প্রোগ্রাম স্কুলে (School safety plan, Student council, Mock Drill, knowledge sharing class, etc.) স্কুলকে কেন্দ্র করে ডিজাইন ও implementation করা হয়। কিন্তু মেসেজটা করা হয় NGO এর (STC, Plan) staff দের মাধ্যমে।	
02	Role of Teachers in CC-DRR Program?	→ শিক্ষকরা সরাসরি Program delivery কে deliver করেন না। NGO-এর staff-রাই সরাসরি প্রোগ্রাম including knowledge based lecture পরিচালনা করেন। কিন্তু শিক্ষকদের অনুমতি নেওয়া হয় (সংশোধন) জরুরি। স্কুলে যাতে তার NGO staff-এর সাথে program, facilitation এর সমন্বয় উপস্থাপিত থাকে। এবং শিক্ষকদেরকে জরুরিভাবে প্রস্তুত করে। → বেশি বেশি কাজ করেন, শিক্ষকদের চেয়ে NGO staff-রা বেশি পারদর্শী। <u>Quotation:</u> "Obviously school teacher হন Facilitation not like NGO standard. তাই বামারা আমাদেরকেই বেশি পছন্দ করে।" [Shukla Tagore. ২:1pg:৪/৫] <u>Quotation:</u> → বাংলাদেশের স্কুল শিক্ষকদের কৃপণতা অনেক বেশি। মেসেজ NGO এর CC-DRR program school curriculum এর অন্তর্ভুক্ত নয়, তাই শিক্ষকরা এখন কাজে বিনাপারিশ্রমিকেরে involve হতে মন না। [২:7 Sabina Parvin P. 6] → <u>Quotation:</u> "না, টিচারদের ডেভেলপমেন্ট জরুরি পাবনা বদলে হয় না।" [২:৪ Saibun Nahar (NGO/SEEP) pg 4]	
03	Advantage and disadvantage of involving teacher in CC-DRR program	CC-DRR program <del>শিক্ষক</del> directly involve না তবে তারা indirectly involve. অনেক মন করেন শিক্ষকরা যুক্ত থাকলে অনেক সুবিধা পাবার অনেক মন করে অধুবিধায় বেশি। program এর staff বা সময়সীমা পাত্রে অধিক কিছু শিক্ষকরা সাপোর্ট ও দিন সময় দিতে পারে। অধুবিধার মননায় সুবিধা বেশি বানানো প্রকল্প করা হয়েছে।	শিক্ষকদের Remuneration এর ব্যতীত মাঝে মাঝে → কমিউনিটি এর subject এর subject এর teacher মাঝে মাঝে।

Table 6.5. Role of schools and teachers in implementation of CC-DRR programs

SL	QUESTIONS	ANSWERS	COMMENTS
1	Role of School in CC-DRR Programme?	⇒ Different programs of CC-DRR, for example, School safety plan, Student council, Mock (Mock) Drill, Knowledge sharing class, etc. are designed and implemented centering the school. But those have been done through the staff of the NGOs (STC- Save the Children, Plan)	
2	Role of Teachers in CC-DRR Program	⇒ Teachers do not deliver the program directly. It is the NGO-Staff who facilitate all the program activities including knowledge-based lecture. But teachers' consent is taken for children's participation. Sometimes teachers stay in the classroom when NGO staff are facilitating a program in the classroom, and they motivate the children to participate.  ⇒ Some of the NGO staff think they are more skilled than	



**Table 6.6. Monitoring and evaluation system of CC- DRR programs**

<i>SL</i>	<i>M &amp; E System</i>	<i>Suggestion/ Recommendations</i>	<i>Comment</i>
1	<p>⇒ <i>There is a Monitoring-Evaluation-Accountability-Learning (MEAL) system. There are three main parts in in-</i></p> <p><i>i) Complain box: students can present the things they like and dislike.</i></p> <p><i>ii) Hotline Number: Children can inform about their complaints through this phone number.</i></p> <p><i>iii) Impact Analysis: After completing a project impact analysis is done through FGD (focus group discussion).</i></p>	<p><i>What we have in place for monitoring and evaluations is workable. But there is more space to work regarding this. For example, to keep the hotline numbers running, to evaluate the complaints for the complaint box in a better way.</i></p>	
2	<p>⇒ <b><u>Process Evaluation:</u></b></p> <p><i>For process evaluation, we make a plan to quality ensure of the day to day activities of our project implementation. Under this planning, there is budget breakdown to quality ensure of each of the Activities. There is also detail outline oriented to the input of the activities and what will be the output from that. The implementation is done following this outline. After that, when we go for process monitoring, we do it according to the prescribed format.</i></p>	<p><i>We are doing many good works. It is important to be documented, shared and best practiced so that at the end of the day this can be a model.</i></p>	
3	<p>⇒ <b><u>LOG FRAME:</u></b> <i>There are different tools of monitoring in the logical frame. These issues are mentioned in the project proposal. And, different matters of the project are monitored time to time following the log frame.</i></p>	<p><i>Different types of trainings should be offered for building skills of the designated person for monitoring.</i></p>	In place
4	<p><b><u>Long term Impact Evaluation:</u></b></p> <p><i>There is no such monitoring system in practice.</i></p>	<p><i>It should be in place.</i></p>	Not in place.
5	<p><b><u>Staff training for monitoring:</u></b></p> <p><i>Monitoring is an integral part of CC-DRR programme. In our program in save the Children, we have MEAL Monitoring system in place, but all staff are not trained.</i></p>	<p><i>Not only the monitoring officers but all project staff should be properly trained for monitoring work. So that they can monitor the process implementation and outcome while they are working.</i></p>	Not in place
6	<p><b><u>Real time monitoring and information sharing:</u></b></p> <p><i>System can be built for sharing real time information by using mobile, tabs, internet, messenger, etc. for monitoring purposes. But we do not have this now.</i></p>	<p><i>This sort of things can be incorporate for better monitoring purpose.</i></p>	Not in place.
7	<p><b><u>Objective and Element wise monitoring:</u></b></p> <p><i>We have a central framework. Using that we do monitoring by selecting indicator based on the checklist. But there is not any particular or separate monitoring framework for CC-DRR. Also, there is no specific framework in the monitoring system for element wise monitoring so that different activities of CC-DSRR can be monitored separately.</i></p>	<p><i>There should be a separate monitoring system for CC-DRR where each activity will be monitored separately for objective-process-output-long term outcome.</i></p>	Not in place

**Theme 5: Other Concerning Issues in NGO-driven CC-DRR programs**

SL	ISSUES	EXPLANATION	COMMENT
01	Gender Issues	NGO কার্যক্রম বর্তমানে প্রাথমিকভাবে Girls Focus. তবে CC-DRR এর program implementation এর ক্ষেত্রে জনসমূহের participation-কে তুলি পর্যায় দেখা যাচ্ছে। কিন্তু কোন কোন ক্ষেত্রে কেবল মিস্ত্রীদেরকে program এ অংশগ্রহণ করা-রাত-দুইবা তুলি করেন। (Md Alamin Hossain (participated and did interview)) * অতিরিক্ত বলাই যেহেতু মেয়েদের তুলনায় CC-DRR এ বেশি Dedicated মেয়েদের কার্যক্রম আছে তুলি Sinaene. জগদিত্ত: -হেতু মেয়েদের মতামত জরুরি।	FGD Girls * gender discrimination তুলি comment এখানে!
02	Different Education System and Curriculum- Bangla and English Medium, Madrasa (Alia and Kaurmi)	Bangla Medium এর সুন্দরভাবে পরিচালিত CC-DRR এর program করা হয়। English Medium ও Madrasa এর program হয় না। NGO এর অধিষ্টি স্থিতি খেলা বা অফিস মত করেন এই program সুবিধা করে উন্নয়ন বা সুন্দর করা হয়। কিন্তু অফিস মত করেন না। এই বিধান English Medium এর সুন্দরভাবে পরিচালিত হয়। তবে Madrasa এর program করা হয় না। যদি এর বাধ্য করা সুন্দর করা হয়।	
03	Climate Change & DRR Should be in CC-DRR program together with DRR or not?	CC-DRR এর program is already climate change included. তাই পরিচালিত হয়। তাই suitable স্থান CC-DRR program develop করতে পারেন। তাই climate change বিধি তাই করা হয়।	

**Table 6.7. Concerning issues in CC-DRR**

SL	ISSUES	EXPLANATION	COMMENTS
1	Gender Issue	Presently most of the NGO activities are girls focused. So, in CC-DRR program implementation, girl's participation is also given much importance. But sometimes, parents do not feel confident to let their daughter participate in NGO program (2.6 MAH/NGO/Save; 2.9/MOI)  ⇒ I learned from my experience that girls are more dedicated to CC-DRR than boys. Girls are more sincere to works while boys are rather remiss.	But strong comments have about gender discrimination from FGD Girls group *

2	Different education system and Curriculum-Bangla, Madrasa (Alia and Kaumi)	Generally, CC-DRR activities are implemented in the Bangla-medium schools. These programs are not implemented in the English-medium schools and Madrasas. Many of the NGO staffs expressed that these programs are usually implemented in the underprivileged areas and schools. Considering this fact, English-medium schools are cut off from their program. And none of the programs are implemented in Madrasas though there are opportunities to do so.	
3	Climate change should be in CC-DRR program together with DRR or not?	Climate change is already included in the CC-DRR program. But all of them think that to develop a full-fledged CC-DRR program, climate change must be included with DRR.	

**Theme 6: Boys Vs Girls Issues (grownups call it gender issue) in CC-DRR**

- **Gender Issue in DRR Education: From Focus Group Discussions with Girls**

23 page: 01  
DATE: 24.08.18  
FGD Girls (Girls Vs Boys)

SL	ISSUES	EXPLANATION	COMMENTS
01	LESS GIRLS	ছেলেদের ছেলেরা জেজোর অধ্যাপনা ছেলেরা করা। Save the children এর প্রোগ্রামে ৩০ জন শিক্ষার্থীর মধ্যে মেয়েদের অধ্যাপনা ছিল ১০ জন অর্থাৎ ১:৩। প্রথমে এখানে ৩০ জনের সবাই ছেলে ছিল। তবে কোটা কারণে এ জন ছেলে হলে মাঝে ৩ জন মেয়ে হতে পারত। পাসপোর্ট: ছেলেদের পরিবার থেকে মুচকাত্তে হলে আর ছেলেরা যদি নিজেদের আধিকার কেহ জন্য দাবি করে তবে হলে সাথে সাথে নিজে হলে অহলে অসহায় অসহায় হতে পারে। আমাদের প্রোগ্রামে যোগাতে হবে যে ছেলে মেয়ে সবাই সমান ভাবে সাথে সাথে ব্যবহার করে না কেউ কোনো স্থানে হলে তা হতে না। আর বাবা-মা কেউ ছেলে আজকে কখনো নিতে চায় না তাই এ সব আলাদা করে করা হতে হবে।	Also No parti- cipation of Disabled Children
02	ছেলে/মেয়ে একসাথে কাজ করার সিদ্ধান্ত গ্রহণ অসম্ভব হচ্ছে কি?	পাসপোর্ট: না এরকম কোন সমস্যা ফের করতে হয়নি। বাইরে ও এরকম কোন সমস্যা হয় নি। আমাদের নিজেদের সমস্যা প্রদান কোন অসুবিধা হয়নি। আমরা নিজেদের কথা বলেছি ওরা ওদের কথা বলেছে। এরপর সমস্যা আমরা সিদ্ধান্ত নিয়েছি। এমনভাবে ওরা আমাদের সঙ্গে যোগে। => কথাটা কখনো ওরা আমাদের কথার গ্রহণ দেয়না। ওরা তবে আমাদের পারবে না ওরা পারবে। ওনিজেদের অধিকার কেউ নিতে চায়। অধিকার অর্থ বাস্তব জীবন তার আমাদের গ্রহণ দেয়না।	

**Table 6.8. Gender issues in DRR education: from focus group discussions with girls**

<i>SL</i>	<i>ISSUES</i>	<i>EXPLANATION</i>	<i>COMMENTS</i>
1	LESS GIRLS	<p><i>Participants of girls is comparatively lower than boys. In one of program of Save the Children (STC), number of girls was only 3 out of 30 which means 9:1. In fact, At the beginning all of the 30 participants were boys. After some time, for some reason those three boys had to leave and then when three girls joined in.</i></p> <p><i>Papri: The family should explain it to their boys. And also, if girls stand up for their rights and work with boys with the same pace without any prejudice, the problem can be solved.</i></p> <p><i>In the program, they should explain it that there is no discrimination between boys and girls, all are equal. One should not disrespect another. No one is inferior or superior to others. Moreover, as parents do not want to let girls participate in a program where boys are participating, the program people should also talk to the parents to make them understand.</i></p>	Also NO participation of Disabled Children
2	Were there any difficulties in decision making as the boys and girls were working together?	<p><i>Papri: No, there was not any problem like that. We did not face such problem other than decision making also. There was no problem in giving our opinions. We talked about our opinions and they said theirs. Then considering all these, we made our combined decision together. The listen to us like this,</i></p> <p>⇒ <i>But sometimes it happens that they do not give importance to what we say. They think they we will not be able to do something that they can do. They think about their own only. Honestly speaking, they do not give us impotence in real life.</i></p>	





**Table 6.10. Three important questions regarding DRR education: answered by the girls from focus groups**

SL	QUESTIONS	ANSWERS
1	Climate change and DRR should be together in one same subject or not?	<p>Yes, they should be together. There will be a lot of benefits if together.</p> <p>Two topics are pretty similar, and one is related to the other. So, this two should be together.</p> <p>So disaster are happening because of the climate change. So, it is best that the climate change and the DRR are kept together in one subject.</p>
2	What do you want to do with the learned DRR knowledge and skills?	<p>⇒ Want to share with disabled and other children.</p> <p>⇒ We will be aware and help other with the knowledge to be aware. (Shoilee)</p> <p>⇒ We will work to keep our environment clean. Seeing us other people will learn.</p>
3	How do you like to learn, reading books or participation?	<p>⇒ It is not fun to read textbooks. That is why we do not like to learn by reading books.</p> <p>⇒ We like to learn by participating in different things.</p> <p>⇒ We like learning by doing things practically.</p>
4	Do you know about 999?	<p>NGHS (Narayanganj Government high School) girls do not know about 999</p> <p>Only a few girls from <b>Morgan Girls High School</b> know about triple zero. But most of them do not know.</p> <p>Girls from Mirpur Ideal do not know about 999</p> <p><b>*It has been found that more boys know about 999 than the girls.</b></p>

• **Three Important Questions Regarding DRR Education: Answered by the Boys from Focus Groups**

1.4 page no-1 FGD Boys  
Different questions

Sl.No	QUESTIONS	ANSWERS
01	Climate change and DRR should be together in one same subject or not?	<p>সবার সঙ্গে সবচেয়ে ভালো পড়ানো ও দুটোই একটা করে পড়ানো ভালো। কখনো পড়ানোর বারো একটা দুটোই একসাথে পড়ানো ভালো। তাই দুটোই একসাথে পড়ানো ভালো।</p> <p>আমাদের জীবন-উন্নয়ন আমাদের দুটোই একসাথে পড়ানো ভালো। তাই আমরা যদি একটা-দুটো না পড়ানো তাহলে একটা-দুটো পড়ানো ভালো। তাই আমরা যদি একটা-দুটো পড়ানো তাহলে একটা-দুটো পড়ানো ভালো।</p> <p>কোনো কোনো দুটো একসাথে পড়ানো ভালো। তাই আমরা যদি একটা-দুটো পড়ানো তাহলে একটা-দুটো পড়ানো ভালো।</p>
02	What do you want to do with the learned DRR knowledge and skills?	<p>→ আমরা সবার সাথে শেয়ার করতে চাই।</p> <p>→ কখনো ও কখনো যদি কেউ অন্য-পাঠ্যক্রমের মনোযোগ ফলাফল ও দেখাতে চাই।</p> <p>→ Community কে contribute করতে চাই।</p> <p>→ মনে পড়লে আমাদের সবার জানাতে ও দেখাতে চাই।</p> <p>→ প্রতিদিনী-সিটিংস কমান্ডে ও দেখাতে চাই।</p> <p>→ educational কে সবার সাথে শেয়ার করতে চাই।</p>
03	কিভাবে শিখতে বেশি ভালো লাগে: বই পড়ে না অথবা প্রদর্শনের মাধ্যমে?	<p>→ বই পড়ে শিখলে বেশি ভালো লাগে না।</p> <p>→ Lecture শুনলে বেশি ভালো লাগে না।</p> <p>→ অধ্যয়নের মাধ্যমে শিখতে চাই।</p> <p>→ See suggestions/Recommendation page for detail</p>
04	Do you know about 999?	<p>→ I do know about 999.</p> <p>→ 999-এর নামে একটি সার্ভিস আছে।</p> <p>→ 999-এর নামে একটি সার্ভিস আছে।</p> <p>COMMENT: এছাড়াও 999-এর নামে একটি সার্ভিস আছে।</p> <p>999-এর নামে একটি সার্ভিস আছে।</p> <p>999-এর নামে একটি সার্ভিস আছে।</p> <p>999-এর নামে একটি সার্ভিস আছে।</p>

**Table 6.11. Three important questions regarding DRR education: answered by the boys from focus groups**

<i>SL</i>	<i>QUESTIONS</i>	<i>ANSWERS</i>
1	<i>Climate change and DRR should be together in one same subject or not?</i>	<p><i>Everyone thinks that climate change and disaster are two interrelated topics. Disaster are increasing because of the climate change. So, for reducing disaster risks, we must know about climate change.</i></p> <p><i>Ariyan: Because global warming is influencing disaster as a catalyst. So if we do not know well about both, we cannot make it any better.</i></p> <p><i>Hridoy: As the two topics are similar, there is a lot of advantages if they are together. Moreover, it will also save time.</i></p>
2	<i>What do you want to do with the learned DRR knowledge and skills?</i>	<ul style="list-style-type: none"> <li>⇒ <i>Want to teach our sibling in home.</i></li> <li>⇒ <i>Want to share our knowledge with our parents, grandparents and other members of family, and teach them.</i></li> <li>⇒ <i>Want to contribute in the community.</i></li> <li>⇒ <i>Want to share knowledge with the out of school children and teach them.</i></li> <li>⇒ <i>Want to share knowledge with the disable children and teach them.</i></li> <li>⇒ <i>Want to utilize our learning in a creative way to help, for example we can write a report in newspaper, etc.</i></li> </ul>
3	<i>How do you like to learn more, by reading books or participation?</i>	<ul style="list-style-type: none"> <li>⇒ <i>Don't like to learn by reading textbooks at all.</i></li> <li>⇒ <i>Do not like listening to those lectures at all.</i></li> <li>⇒ <i>Want to learn through participation.</i></li> <li>⇒ <i>See Suggestions/recommendation page for detail.</i></li> </ul>
4	<i>Do you know about 999?</i>	<ul style="list-style-type: none"> <li>⇒ <i>Few know but other don't</i></li> <li>⇒ <i>Came to learn about this from TV programs</i></li> <li>⇒ <i>Joy: I knew about it but didn't have a change yet to use it.</i></li> </ul> <p><i>Comment: Not all the FGD boys are aware of the 999 very well, for example, it is not clear to them why when and why to call 999, what will happen if they call.</i></p>

**Theme 8: Suggestions and Recommendations from the Children- What Should be Included and Excluded in CC-DRR Programs**

- Suggestions and Recommendations for Better a DRR Education Program: From the Girls of the Focus Groups**

Page 04 FGD Girls prog suggestion

DATE - 24.08.18

SL	Element	Suggestion/Recommendation	Comment
07	Gender Discrimination	শরীরে বুদ্ধির তুলনায় অনেক বড় ভাঙ্গা মাঝে মাঝে মেয়েদের ক্ষেত্রে পুরুষের তুলনায় কম মূল্য দেওয়া হয়। মেয়েদের ক্ষেত্রে পুরুষের তুলনায় কম মূল্য দেওয়া হয়।	শরীরে বেশি জিনিসপত্র রাখা উচিত।
08	Physical Education	শুধু বই পড়ার ক্ষেত্রে নয়, শরীরিক শিক্ষাও গুরুত্বপূর্ণ।	শারীরিক শিক্ষা গুরুত্বপূর্ণ।
09	Fire Training & Safety Hazard	শুধু বই পড়ার ক্ষেত্রে নয়, শরীরিক শিক্ষাও গুরুত্বপূর্ণ।	শারীরিক শিক্ষা গুরুত্বপূর্ণ।
10	Interactive Learning	Lecturer এবং তাদের থেকে শেখা শুধু পড়ার মাধ্যমে নয়, বরং interactive method যেমন Role play, গেম, সিমুলেশন ইত্যাদি।	শিক্ষার জন্য interactive method গুরুত্বপূর্ণ।
11	Frequency of sessions	সপ্তাহে দুই বা তিন দিন করে শিক্ষা দেওয়া উচিত।	শিক্ষার ফ্রিকোয়েন্সি গুরুত্বপূর্ণ।
12	Frequent drills/সিমুলেশন	সিমুলেশন বা ড্রিল করা উচিত।	শিক্ষার ফ্রিকোয়েন্সি গুরুত্বপূর্ণ।

Page 03 FGD Girls prog Suggestion

2.2 Page-3

SL	Element	Suggestion/Recommendation	comment
09	School safety plan	স্কুলে সুরক্ষা পরিকল্পনা তৈরি করা উচিত।	স্কুলে সুরক্ষা পরিকল্পনা গুরুত্বপূর্ণ।
05	Drowning	জলাশয়ে সুরক্ষা পরিকল্পনা তৈরি করা উচিত।	জলাশয়ে সুরক্ষা পরিকল্পনা গুরুত্বপূর্ণ।
06	Inclusion of other children	শিক্ষার ক্ষেত্রে অন্য শিশুদেরও অন্তর্ভুক্ত করা উচিত।	শিক্ষার ক্ষেত্রে অন্য শিশুদেরও অন্তর্ভুক্ত করা উচিত।

Page 02 FGD Girls Prog Suggestion

Page 02 2.2.2

SL	Element	Suggestion / Recommendation	Comment
01	DRR Topics to include	শিক্ষার ক্ষেত্রে DRR বিষয়গুলো অন্তর্ভুক্ত করা উচিত।	শিক্ষার ক্ষেত্রে DRR বিষয়গুলো অন্তর্ভুক্ত করা উচিত।
02	Interactive Learning	শিক্ষার ক্ষেত্রে interactive method গুরুত্বপূর্ণ।	শিক্ষার ক্ষেত্রে interactive method গুরুত্বপূর্ণ।
03	Frequency of sessions	সপ্তাহে দুই বা তিন দিন করে শিক্ষা দেওয়া উচিত।	শিক্ষার ফ্রিকোয়েন্সি গুরুত্বপূর্ণ।
04	Frequent drills/সিমুলেশন	সিমুলেশন বা ড্রিল করা উচিত।	শিক্ষার ফ্রিকোয়েন্সি গুরুত্বপূর্ণ।

Page 02 FGD Girls prog. Suggestion

Page 02 2.2

SL	Element	Suggestion / Recommendation	Comment
01	DRR Topics to include	শিক্ষার ক্ষেত্রে DRR বিষয়গুলো অন্তর্ভুক্ত করা উচিত।	শিক্ষার ক্ষেত্রে DRR বিষয়গুলো অন্তর্ভুক্ত করা উচিত।
02	Interactive Learning	শিক্ষার ক্ষেত্রে interactive method গুরুত্বপূর্ণ।	শিক্ষার ক্ষেত্রে interactive method গুরুত্বপূর্ণ।
03	Frequency of sessions	সপ্তাহে দুই বা তিন দিন করে শিক্ষা দেওয়া উচিত।	শিক্ষার ফ্রিকোয়েন্সি গুরুত্বপূর্ণ।
04	Frequent drills/সিমুলেশন	সিমুলেশন বা ড্রিল করা উচিত।	শিক্ষার ফ্রিকোয়েন্সি গুরুত্বপূর্ণ।

**Table 6.12. Suggestions for better DRR education program: from the girls of the focus groups**

<i>SL</i>	<i>ELEMENTS</i>	<i>SUGGESTION/RECOMMENDATION</i>	<i>COMMENT</i>
01	<p><u>DRR topic to include</u></p> <p>i) Drawing/art ii) WATER LOGGING</p>	<p>⇒ Drawing is a very interesting thing. We can imagine a disaster and express it through drawing. This way our creative intelligence also increases.</p> <p>⇒ Once we had an art competition. Everyone liked it and we were very motivated. (Roja)</p>	All girls want to include this.
02	<p><u>Inter School Competition</u></p> <p>⇒ Drama ⇒ Debate ⇒ Singing ⇒ Dance</p>	<p>⇒ Once we did a stage performance of a drama about what help we will get from tree plantation and what is the bad impact of randomly cutting down trees. There was both fun and information in that drama. (Safa)</p> <p>⇒ We had a debate competition in Save the Children's programme. The debate on how to extinguish a fire, how to fix the risky places in our school, etc.</p> <p>We had a really interesting debate on these issues (Urmi)</p> <p>During a debate competition two group present their arguments on natural disaster issues. From that people can learn a lot of things. (Urmi)</p> <p>We were able to attract people's interest through dancing, singing, palagaan (a special chorus folk song in Bangladesh) and etc. and teach them about disaster issues. So, we want to include these activities in DRR program.</p>	We want all this in our disaster education programme.
03	<p><u>Disaster Topic</u></p> <p>⇒ Tsunami ⇒ River bank erosion ⇒ Cyclone ⇒ Drought ⇒ Electrification ⇒ Earth-quick (Earthquake) ⇒ Flood ⇒ Waste management ⇒ Road-accident ⇒ Building collapse ⇒ Hill collapse (landslide)</p>	<p>⇒ Bangladesh is a disaster-prone country. The main reason for this is climate change. Almost every year our country faces the listed disasters. From that our country is affected very badly. These disasters cannot be completely prevented. But if we are aware, it is possible to reduce the impact. For this reason, we want to include this disaster topics in the DRR program.</p> <p>⇒ We used to have water logging in our school yard. Later on, many steps were taken. The ground was lifted by putting more muds and more drains were made too. Now this problem has been resolved. (Roja)</p> <p>⇒ If a person is electrified, one should not use a metal object. They should use wood or bamboo material to take the person off the electricity. This way we can help people from electrification hazards. (Roja)</p> <p>⇒ It creates a panic if people start running around during an earthquake. So it has been taught that to stay calm during a disaster and stay under the benches or stand beside the walls. (Urmi)</p> <p>⇒ One day, we went out in the street with a rally including our teachers. People were curing and asking, "for what are you doing this rally?" then we explained it to them that we were trying to build awareness about disaster. We also told them that today's rally is about how we will save us and others from the disasters. From then many people got information and were aware.</p>	All the students consider these topics to be very important and support this very much. So, these topics should be included in DRR education.

		<p>⇒ Because of people's careless activities, many toxic gases are polluting our environment. From that, people are affected by many diseases. We will work to keep our environment clean and hegemonic, and people will learn from us. (Boishakhi)</p> <p>⇒ We can often see many buildings around us which are may collapse any time. These buildings are very risky. So, to reduce the risk of our society from these risky buildings, this issue should be included in the DRR programme.</p>	
04	School Safety Plan	<b>Babli:</b> Few walls in our schools are pretty cracked. In CC-DRR programme, again and again we have been told that there cannot be cracks in the wall. Moreover, this school building is also very old. Fans are broken, doors are broken, window glasses are broken. These are not being fixed. These can create a disaster anytime. We will have to fix things in our own school first, then we can fix what is in the outside.	
05	Drowning	Often in our country we hear news about children die from drowning, especially between 2-10 year old kids. Not only this, most of our cultivating lands get flooded every year. Thus, in one hand, our economy is hampered, and on the other hand, 18 thousand kids are dying from drowning every year.	
06	Inclusion of other children ⇒ Disabled ⇒ Out of school children ⇒ Slum children ⇒ All children in school	<b>Seminar:</b> This was held in the LGD building. 15 students from our school and students from 18 more schools attended this event. The theme of the seminar was: "What children can do for disaster management." (Rupa, MIGHS)  ⇒ What we have learned about DRR till now, we want to teach the people in our community who still do not know about this. In the slum areas, people are not much educated. They do not know how to face a disaster. We can teach them this thing. (Papri, MIGHS)	
07	Gender Discrimination	<b>Because of the discrimination between boy and girls, girls often lose their motivation to do something good. For this reason, girls cannot get the opportunity to live independently and get job.</b>  ⇒ One day my brother and I were coming back from the coaching centre. We were holding our hands. I noticed that people were teasing us. So, we can say that we need to change our typical viewpoints. (Safa)	Special importance should be given on girls and women.
08	Study Tour	We cannot learn about everything by reading textbooks in school. We can gather practical knowledge by doing study tours. So, study tours should be organised in places where there has been a disaster. All the teachers, students and parents should go together in this study tours.	Study tours should be considered with importance.
09	Eve teasing and Sexual Harassment	Every time girls go out in the streets in our society, they face eve teasing. As a result, girls cannot go out independently. So, we want this issue to be included in the CC-DRR program.	Boys may not understand this issue, but it is very important to girls.

10	Use of multimedia and other participatory method instead of lectures	We feel so bored during a lecture and cannot keep concentration. So, we want to learn through multimedia and a lot and lot of participation.	It is better to use a different method other than lecture.
11	Population control	We have a very big population in Bangladesh. So, it is important to learn about it. Even in 2018, in some families in Bangladesh you can see as many as 10/11 children.	Population must be controlled.
12	Frequent Drills/A lot of simulations	We like drills very much and we learn the best by this. But we often forget the what-to-do rules as the drills taken place in very long gap. So, drills should be organise once in a month or in every three months.	We must want drills.

• **Suggestions and Recommendations for a Better DRR Education Program: From the Boys of the Focus Groups**

SL	ELEMENTS	SUGGESTION/RECOMMENDATION	COMMENT
01	<p>DRR TOPICS TO INCLUDE</p> <p>① DROWNING PREVENTION</p> <p>② WATER LOGGING</p> <p>③ ROAD ACCIDENT</p> <p>④ BUILDING COLLAPSE</p>	<p>① DROWNING:</p> <ul style="list-style-type: none"> <li>To include topics on drowning prevention.</li> <li>Teaching swimming</li> <li>How to save drowned children.</li> <li>Include swimming competition in school annual sports.</li> </ul> <p>② WATER LOGGING:</p> <ul style="list-style-type: none"> <li>বুঝি বলে অনেক জানাওয়ে নাছিল</li> <li>কমিক বাক, এছাড়া করে স্টাফ জোগ</li> <li>কমিক বই ছাড়া বা "স্বাস্থ্যকর্মী শিক্ষা"</li> <li>সামগ্রিক পত্র ছাড়া "স্বাস্থ্য" বাক।</li> <li>আজিও চলাইছে কলেক্টরী বক "সেফট"</li> <li>এই শিক্ষারি DRR এর অন্তর্ভুক্ত করলে হবে।</li> </ul> <p>③ ROAD ACCIDENT:</p> <ul style="list-style-type: none"> <li>সবচেয়ে গুরুত্বপূর্ণ বা গুরুত্বপূর্ণ।</li> <li>কমিক, পোস্টার, বা স্টাফ জোগ</li> <li>এই শিক্ষারি বাক। (স্বাস্থ্য কর্মী শিক্ষা বাক)</li> <li>স্বাস্থ্যকর্মী, স্বাস্থ্য কর্মী, স্টাফ জোগ</li> <li>স্বাস্থ্যকর্মী "স্বাস্থ্যকর্মী" বাক।</li> </ul> <p>④ BUILDING COLLAPSE:</p> <ul style="list-style-type: none"> <li>এই গুরুত্বপূর্ণ বা গুরুত্বপূর্ণ।</li> <li>কমিক, পোস্টার, বা স্টাফ জোগ</li> <li>এই শিক্ষারি বাক। (স্বাস্থ্য কর্মী শিক্ষা বাক)</li> <li>স্বাস্থ্যকর্মী, স্বাস্থ্য কর্মী, স্টাফ জোগ</li> <li>স্বাস্থ্যকর্মী "স্বাস্থ্যকর্মী" বাক।</li> </ul>	<p>১০১</p> <p>১০২</p> <p>১০৩</p> <p>১০৪</p> <p>১০৫</p>
02	INCLUSION OF OTHER CHILDREN	<p>Save the children campaign - কোন সমস্যাতে কোন সমস্যাতে</p> <p>১০১</p> <p>১০২</p> <p>১০৩</p> <p>১০৪</p> <p>১০৫</p>	<p>১০১</p> <p>১০২</p> <p>১০৩</p> <p>১০৪</p> <p>১০৫</p>
03	LECTURE	<p>১০১</p> <p>১০২</p> <p>১০৩</p> <p>১০৪</p> <p>১০৫</p>	<p>১০১</p> <p>১০২</p> <p>১০৩</p> <p>১০৪</p> <p>১০৫</p>
04	ROLE PLAY/ACTING/DRAMA ETC	<p>১০১</p> <p>১০২</p> <p>১০৩</p> <p>১০৪</p> <p>১০৫</p>	<p>১০১</p> <p>১০২</p> <p>১০৩</p> <p>১০৪</p> <p>১০৫</p>
05	DRILLS	<p>১০১</p> <p>১০২</p> <p>১০৩</p> <p>১০৪</p> <p>১০৫</p>	<p>১০১</p> <p>১০২</p> <p>১০৩</p> <p>১০৪</p> <p>১০৫</p>

**Table 6.13. Suggestions for better DRR education program: from the boys of the focus groups**

<b>SL</b>	<b>ELEMENTS</b>	<b>SUGGESTION/RECOMMENDATION</b>	<b>COMMENT</b>
01	<p><i>DRR TOPICS to include</i></p> <p>i) <i>DROWNING PREVENTIO</i></p> <p>ii) <i>WATER LOGGING</i></p> <p>iii) <i>ROAD ACCIDENT</i></p> <p>iv) <i>THUNDER/ LIGHTNING</i></p> <p>v) <i>WASTE MANAGEMENT</i></p>	<p>i) <i>DROWNING:</i></p> <ul style="list-style-type: none"> <li>⇒ <i>To include topics on drowning prevention.</i></li> <li>⇒ <i>Teaching swimming</i></li> <li>⇒ <i>How to save drowned children</i></li> <li>⇒ <i>Include swimming competition in school annual sports</i></li> </ul> <p>ii) <i>WATER LOGGING:</i></p> <ul style="list-style-type: none"> <li>⇒ <i>The streets in the city go under water when it rains. It does not only spread virus and bacteria, sometimes children also die from drowning. Moreover, it creates a big hazard to go move from place to place. So, we want to include this issue should under DRR.</i></li> </ul> <p>iii) <i>ROAD ACCIDENT</i></p> <ul style="list-style-type: none"> <li>⇒ <i>We often get news of building collapse. Even sometimes there are really serous cracks are noticed in the walls of the school's buildings. So, it is very important to follow the building codes while making a building. To increase the awareness about this in the society this topic should be included in DRR.</i></li> </ul> <p>iv) <i>Now a days, a lot of lightning are occurring in Bangladesh. So this should be included as a DRR topic as well.</i></p> <p>v) <i>To build awareness so that people do not litter and through rubbish here and there, this issue should be included in DRR. Also, awareness should be built for the use of dustbins.</i></p>	
02	<p><i>INCUSION OF OTHER CHILDREN</i></p> <ul style="list-style-type: none"> <li>⇒ <i>Disabled</i></li> <li>⇒ <i>Out of school children</i></li> <li>⇒ <i>Slum children</i></li> <li>⇒ <i>All children in school</i></li> <li>⇒ <i>Family members and parents</i></li> </ul>	<p><i>From the project of Save the Children only 30 children from our school had the chance to participate and learn. But in our school are nearly three thousand (3000) students. This means, if a disaster occurs, only these 30 kids will be alive, and the rest cannot. For this reason, it is necessary to take such a step so that all the kids in schools have the opportunity to learn about DRR. (Aditya, NGHS)</i></p> <p><i>Those kids in our society who do not come to school, for example, disable children, labour children, school dropout children, slum children we can either bring them in our school or we can go to them in one day of week and we will share with them and teach what we have learned with fun and pleasure. From that they will learn, and they will share their knowledge with other kids and their parents. (Evan, NGHS)</i></p> <p><i>We want to make family/house safety plan with parents and siblings</i></p>	<ul style="list-style-type: none"> <li>⇒ <i>All children</i></li> <li>⇒ <i>All family members</i></li> <li>⇒ <i>All community</i></li> </ul>
03	<p><i>Use of multi-media as a substitute of lecture</i></p>	<p><i>We need to know learn many things about disaster. But we do not like at all to learn by reading textbooks of listening lectures. So, if multimedia is used to show us video clips and videos of how children from other countries are learning, we can learn easily with pleasure and fun. (Hridoy, NGHS)</i></p>	

04	Learning through ROLE PLAY/ DRAMA/ Etc. ⇒ Art, Drawing	We do not want to sit for test by writing in exam sheets for the evaluation of our learning (knowledge outcome evaluation). Instead of sitting for written exam, we want to prove our knowledge by doing stage performance, for example stage drama, acting, Role play, Drama etc. or practical implementation like using a fire extinguisher, etc.	
05	Include DRR as a new compulsory subject in the syllabus	There only a tiny bit of detail on disaster in our "Bangladesh and Global Studies" book which is not enough for our real life. Moreover, our teachers also do not take this subject seriously and for this reason we do not enjoy this. We want that DRR must be included as a compulsory separate textbook in the primary, secondary and higher secondary level.	

**Theme 9: Findings from the National Curriculum and Textbook Board (NCTB)- Presnet bad curriculum monitoring system, gaps, suggestions, etc.**

- Monitoring and Evaluation System in the NCTB

GOVT. INTERVIEW (NCTB)

S/Sl. No.	Monitoring & Evaluation	Comments
01	<p>Who Monitors what? Primary School কে monitor করে primary শিক্ষা অধিদপ্তর। আর, Secondary School কে monitor করে মাধ্যমিক উচ্চ শিক্ষা অধিদপ্তর (স্বাতন্ত্র্য)।</p> <p>System &amp; Flow of Monitoring:</p> <p>Curriculum (NCTB) → Distribution &amp; execution (NCTB) → বাস্তবায়ন (স্বাতন্ত্র্য) → Monitor (প্রশাসনিক অধিদপ্তর) → Assessment (BD. Eon. Eon. (বোর্ড)) → Evaluation (বোর্ড)</p> <p>শিক্ষকদের প্রশিক্ষণ: সপ্তন বছর curriculum প্রণয়ন হয় তখন NCTB শিক্ষকদের ৫-৭ দিন জেয়ারি একটি প্রশিক্ষণ দেয়। Quotation: "এই প্রশিক্ষণ প্রকারই দেওয়া হয়। এবং এই প্রশিক্ষণ দেয়ার সব শিক্ষকেরা তো চলে যান এবং প্রশিক্ষণ তারা এই প্রশিক্ষণ সেন্টারেরই রেখে যায়।" বাক্য এর পরে NCTB থেকে আর কোন follow up করা হয় না।</p> <p>প্রশাসনিক অধিদপ্তর আসছে কী-কিন্তুই বাক্য? :</p> <ul style="list-style-type: none"> <li>* স্কুলের অবকাঠামো চিহ্ন আছে কিনা,</li> <li>* বৃক্ষ চিহ্ন আছে কিনা,</li> <li>* স্কুলের উপস্থিতি চিহ্ন আছে কিনা,</li> <li>* উপস্থিতি 100% কিনা</li> </ul> <p>তারমানে এদের যারা Monitoring administrative. Curriculum স্কুলে চিহ্নের বাস্তবায়ন হচ্ছে কিনা তাতে কোনো যেমন রাখা না। অর্থাৎ Education monitoring রন</p> <p>National Curriculum Policy Framework: বর্তমানে এটি তৈরি করে NCTB কায়ে করাছে। এই Policy framework এ বন দেওয়া থাকবে কতদিন পরপর curriculum রিভিউ করা হবে। ২০২০ এর পর ২০২২ সালে, অর্থাৎ ২৭ বছর পর curriculum রিভিউ করা হবে। তারপর আরও ৫ বছর পর হয়ে থাকবে। খুব সুতে আবার curriculum রিভিউ হবে। National Curriculum Policy Framework এ প্রস্তাব করা হচ্ছে যে monitoring and inventorying, NCTB এর অধীনে থাকবে হবে।</p> <p>Secondary Education Sector Investment Program (SESIP) এ কী BD. Eon. Eon. একটি project. এখানে school monitoring করার সময় যেমন: প্রিন্সিপাল কিয়ট কিনা, দুর্ভোগতা কেমন, feedback দেয়া এই বাস্তবায়নকে গিয়ে দেখা করা। কিছু এর সময়ও বাস্তবায়নকে তখন সম্বন্ধে গিয়ে monitoring করতে পারবে না।</p>	<p>Assessment এর কাজটা বড় ছে জার প্রায়টিই দুমিহি পানন করে স্বাতন্ত্র্য, NCTB এর curriculum প্রণয়ন এবং কিছু মাধ্যমিক শিক্ষকেরা এ তার প্রশিক্ষণ দেয় তখন curriculum এ উপল।</p>

**Table 6.14. Monitoring and evaluation system in the NCTB**

SL	Monitoring and Evaluation	Comments
01	<p>▪ <b><u>Who Monitors What?:</u></b>  <i>The Directorate of Primary School monitors all the Primary Schools. Secondary Schools are monitored by the Directorate of Secondary and Higher Education (Maushi)</i></p>	
	<p>▪ <b><u>System Flow of Monitoring:</u></b></p> <pre> graph LR     A[Curriculum development (NCTB)] --&gt; B[Distribution &amp; execution (NCTB)]     B --&gt; C[Implementation Directorate of Secondary and Higher Education]     C --&gt; D[Monitor Administrative Department]     D --&gt; E[Assessment BD Exam Board (Bedu)]     D --&gt; F[Evaluation (Bedu)]     </pre>	<p><i>The assessment job is done by Bedu and overall responsibility is carried out by Maushi.</i></p> <p><i>NCTB develops the curriculum and conducts training for few teachers for one-time basis on new curriculum.</i></p>
	<p>▪ <b><u>Training of Teachers</u></b>  <i>When a new curriculum is developed, NCTB conduct a 5-7day training for some teachers. <b>Quotation:</b> “This training is given only once. And it end here. After the trining, the teachers leave the training centre and leave the training knowledge in the centre as well.” Because, no follow-up is taken from NCTB after the training.</i></p>	
	<p>▪ <b><u>What does actually the Administrative Department monitor?</u></b></p> <ul style="list-style-type: none"> <li>• If the school’s logistics are fine</li> <li>• If the benches are okay</li> <li>• If the student’s attendance is fine</li> <li>• If the ettendence is 100%</li> </ul> <p><i>Which means their monitoring covers only the adminstative part in school. They do not look into whether the curriculum is properly implemented in schools. This means, they do not monitor education.</i></p>	
	<p>▪ <b><u>National Curriculum Policy Framework:</u></b>  <i>Currently NCTB is working for developing this. It will be advised in the the policy framework after how long the curriculum should be revised. The current curriculum has been revised in 2012 after 1995. This means it was revised after 17 years. It has been roposed the the National Curriculum Policy Framework that NCTB will have the autorty of Monitoring and Inventoring.</i></p>	
	<p>▪ <b><u>Secondary Education sector Investment Program (SESIO):</u></b>  <i>This is a project from Bangladesh Government. This project people got the responsibility of school monitoring, for example to look into if the classes are conducted properly, where is the weakness, taking feedback and etc. But they have not yet been able to conduct monitoring at school level to the level of expectation.</i></p>	

- Curriculum Monitoring Gap and Suggestions/Recommendations identified by the NCTB

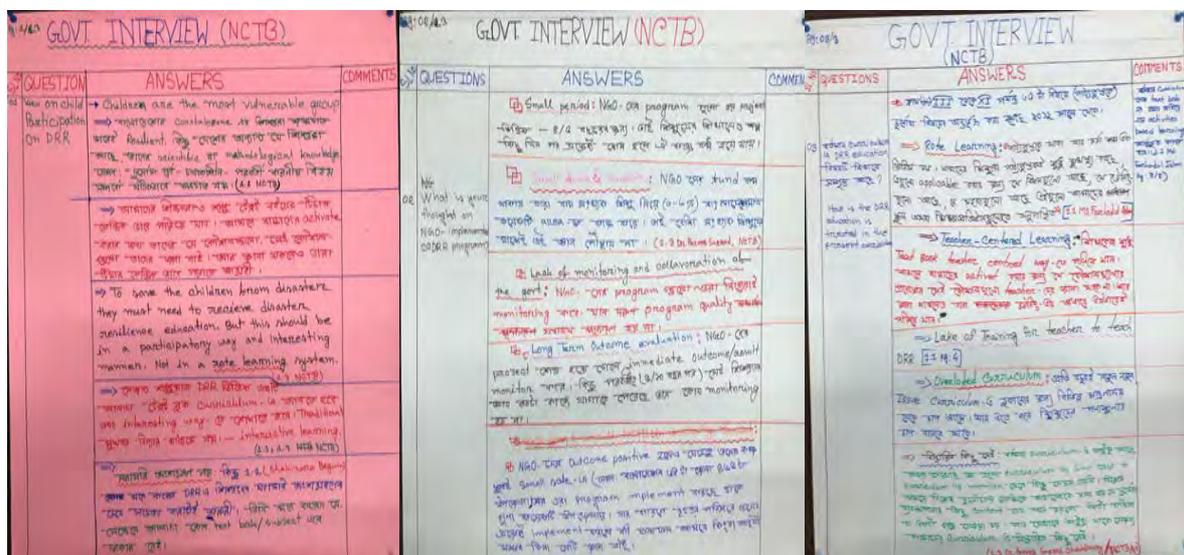
SL No	TOPICS	Comments
	<p><b>Monitoring Gap:</b></p> <p>* ① NCTB Curriculum প্রণয়ন করে কিন্তু বাস্তবায়ন বা মনিটরিং করেন না। তারা যারা বাস্তবায়ন ও মনিটরিং করে তাদের Curriculum কে বোন ধরানাই করে। আর তারা NCTB-র সাথে coordination ও করেন না। যার ফলে এখনকার একটি বিশাল monitoring gap এর সৃষ্টি হয়েছে।</p> <p><b>Suggestion:</b> NCTB-র Curriculum specialists এর মত করেন monitoring &amp; evaluation এর কার্যক্রম NCTB-তে স্থানান্তরিত।</p> <p>② বর্তমান স্কুলে education এর quantitative assessment হয়। Quality গুরুত্ব পায় না।</p> <p><b>Suggestion:</b> Quality assessment এর প্রতি বেশি জোর দিতে হবে।</p>	
	<p><b>Recommended Monitoring System For CDDR Program in the Curriculum:</b> বর্তমান Curriculum এ DRR এর যে topics বিভিন্ন Subject এ অন্তর্ভুক্ত করা হয়েছে প্রত্যেক Curriculum Specialist রা করে করেন তা পরামর্শ না করে এটি শেখাতার জন্য শিক্ষকদের proper Skill করে, তারা করে করেন প্রকৃত CDDR এর approach এর স্বার্থেরে একটি সবার Subject হিসেবে DRR education Curriculum এর অন্তর্ভুক্ত করা উচিত। মেরু Curriculum revision করা প্রয়োজন। আর এর সাথে প্রয়োজন একটি মনিটরিং practice framework.</p>	<p>Subject এর activities এর জন্য Community School Disaster Management Committee (এস ডিএমসি, community members) গঠন করা যেতে পারে।</p> <p>⇒ DRR Lab গঠন করা যেতে পারে।</p> <p>অন্যদিকে disaster related audio video collection করতে পারবে।</p>
	<p><b>Teacher Training Curriculum change:</b> প্রকৃত স্কুলে School এর Curriculum নয় Teacher training এর Curriculum এর পরিবর্তন আনতে হবে। PTI, HHTI এর institute শিক্ষক প্রশিক্ষণে DRR বিষয়টি সন্নিবেশিত করা হবে। কোর্সে হবে শিক্ষকদের কাজের সেমিনার implement করে দেয়া হবে।</p>	<p>⇒ কোনো স্কুলে যে কোনো-কোনো বিষয় নিয়ে সেমিনার করতে হবে। বিশেষ করে DRR বিষয়টি গুরুত্ব পাবে।</p>
	<p><b>Two Level Assessment:</b> Monitoring system এর দুটি level এর outcome assessment এর ক্ষেত্রে 1 term teacher and 1 term top level management.</p>	
	<p><b>Process &amp; outcome oriented Curriculum Development:</b> বর্তমান সময়ের একটি monitoring system এর 1 (1, 2, 2, 1, 2) specific outcome set করে এর মধ্যে long term outcome set করে দিবে। এর সাথে অন্যান্য proper monitoring system এর 1 (1, 2, 2, 1, 2)</p>	

Table 6.15. Monitoring gap in school curriculum and suggestions from the experts

SL	TOPICS	Comments
	<p><b>Monitoring Gap:</b></p> <p>i) NCTB develops the curriculum but they do not implement it or monitor the implementation. On the other hand, who are responsible in curriculum implementation and monitoring, they do not have any knowledge about curriculum. Also, they do not coordinate with NCTB regarding this. For this reason, a big monitoring gap has been created here.</p> <p><b>Suggestion:</b> The curriculum specialists at NCTB consider that the responsibility of curriculum monitoring and evaluation should be on NCTB.</p>	
	<p>ii) The current practice is only doing the quantitative assessment of education and the quality is less focused.</p> <p><b>Suggestion:</b> Much emphasis should be given on the quality of education.</p>	

<ul style="list-style-type: none"> <li>▪ <b>Recommended Monitoring System for CC-DRR Program in the Curriculum:</b> All the curriculum specialists at NCTB think it is not enough that the way some topics of DRR are included in different textbooks under present curriculum. They also think that the teachers do not have proper skills to teach that. In this case, they suggest that DRR education should be treated as a single subject and it should be included in the curriculum with a CC-DRR approach. To make it possible, the current curriculum needs to be revised. And with that, a proper monitoring practice framework is also needed.</li> <li>▪ <b>Teacher Training Curriculum Change:</b> In this case, changing the school curriculum is not enough. The teacher training curriculum needs to be changed as well. DRR should be treated with equal importance in the teacher training at the PTI and HHTI and other institutes like these. Teachers need to be taught how to implement and deliver the lesson in the classroom.</li> <li>▪ <b>Two level Assessment:</b> There will have to be two levels in the monitoring system for outcome assessment: 1 from teacher and 1 from top level management.</li> <li>▪ <b>Process, Objective and Outcome Oriented Curriculum Development:</b> Short-term element specific objective has to be set. And another long-term outcome has to be set. And according to that, proper monitoring needs to be conducted. (1.1, 1.2, 1.3)</li> </ul>	<p>⇒ As an activity in the DRR subject a community school disaster management committee can be formed (which will include students, teachers &amp; community members)</p> <p>⇒ A DRR lab can be formed in school where there will be a collection of disaster related audio, video, etc.</p> <p>⇒ Drills should be organized frequently and that can be done with few schools together.</p>
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**Theme 10: Three Important Questions Answered by NCTB**



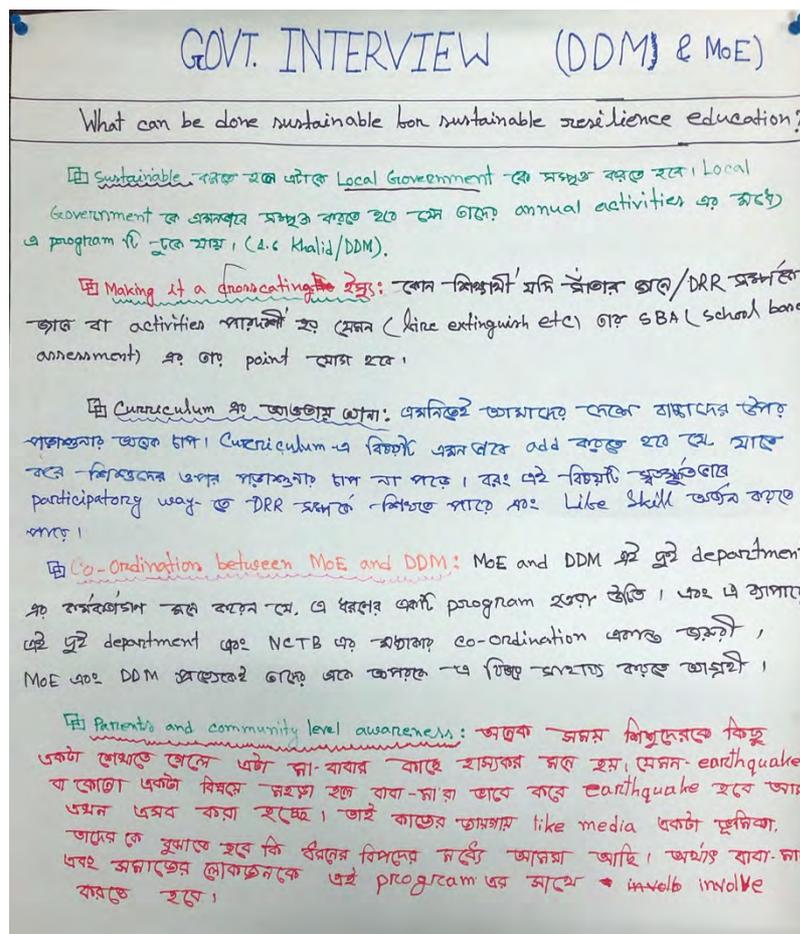
**Table 6.16. Three important questions answered by the NCTB**

SL	QUESTIONS	ANSWERS	COMMENTS
01	View on Child Participation on DRR	<p>⇒ Children are the most vulnerable group.</p> <p>⇒ Children from the coastal zone in Bangladesh are resilient by birth. But the other children do not have scientific or methodological knowledge, for example they are not aware of what to do before-during and after a disaster. (1.1 NCTB)</p>	

		<p>⇒ <i>Our teachers typical teaches from the textbooks in a teacher-centred method. Actually, they do not have the skills to apply techniques to activate children. Even if they know, they are more interested in teaching in the teacher centric method.</i></p>	
		<p>⇒ <i>To save the children from disaster they must need to receive disaster resilience education. But this should be in a participatory way and interesting manner. Not in a <b>rote learning</b> system. (1.3 NCTB)</i></p>	
		<p>⇒ <i>For that, a separate DRR related textbook will have to be included in the curriculum. And children should be taught in an enjoyable manner. Not in the traditional memorization method. - <b>Interactive learning</b></i></p>	
		<p>⇒ <b>Not Direct Participation:</b> <i>But 1.2 (SB) think that it is more important to make children aware than involving them directly in DRR activities. He/she also thinks that for that there is no need for separate textbook/subject.</i></p>	
02	What is your thought on NGO implemented CC-DRR program?	<ul style="list-style-type: none"> <li>▪ <b>Small Period:</b> <i>NGO's programs are project-based- for 4/5 years. So though they teach children, very soon when their project finishes, their works finish as well.</i></li> <li>▪ <b>Small Area and number:</b> <i>As NGOs have limited fund, they only pick a few children (3-6%) for their project and work only in a few areas in Bangladesh. For that reason, the large number of children remains out of that knowledge. (1.3. PS, NCTB)</i></li> <li>▪ <b>Lack of monitoring and collavoration (collaboration) of the govt.:</b> <i>NGO's programs are monitored by themselves. For this reason, program quality I not properly evaluated.</i></li> <li>▪ <b>Long Term Outcome Evaluation:</b> <i>NGO's only monitor the immediate outcome/result. But after that, they do not do any monitoring on how much those kids are able to use this knowledge in the long run (5/10 years later)</i></li> <li>▪ <i>Though NGO's have positive outcomes from their projects, their works are small scale. For example, in Bangladesh there are 68 districts and 865 upazilas (subdistricts). But NGOs are implementing this project only in very few upazilas. As a result, it is still known what outcome it will bring if this project is implemented in a large scale, or whether it is at all possible to do so.</i></li> </ul>	
03	How is the DRR Education treated in the present curriculum?	<p>⇒ <i>From 2012, disaster has been included in textbooks for grade III to VI across 35 books.</i></p> <p>⇒ <b>Rote learning:</b> <i>"It is not same to have them in the textbooks and have them in practice. Our children keep only memorizing those textbooks. But the things that requires application of that knowledge, the training that it requires, the drills that is necessary are missing in our schools and educational institutes." (1.1. MFI)</i></p> <p>⇒ <b>Teacher-centred Learning:</b> <i>teachers only teaches from the textbooks in a teacher-centred way. Actually, they do not know the methods to engage children actively. Even if they know, they cannot do otherwise because they do not get any training on that.</i></p> <p>⇒ <i>Lake of Training for teacher to teach DRR (1.1 pg:4)</i></p> <p>⇒ <b>Overload Curriculum:</b> <i>Every time there are some pressure from different ministries to include different new topics in the curriculum. As a result, the study load on children keeps increasing.</i></p> <p>⇒ <b>Nothing in detail:</b> <i>The way the disaster topics are included in the curriculum now, it is not in line with the curriculum rules or intention. We are asked to include certain disaster related content on some special occasions based on a current disaster occurrence or so. Then we put a poem or story in the textbook related to disaster. That's all and that's the way they are in the curriculum. They are not presented in broad detail. (1.3. PSC/NCTB, pg.3)</i></p>	

**Theme 11: Policy Space for Sustainable CC-DRR in School- Findings from the Ministry of Education (MoE), Department of Primary & Mass Education, Department of Disaster Management (DDM) and Local Governments**

- **What can be Done for Sustainable Disaster Resilience Education?**



**Table 6.17. What can be done for sustainable disaster resilience education?**

<b>What can be done for sustainable resilience education?</b>
<ul style="list-style-type: none"> <li>▪ <b>Sustainable:</b> To make it sustainable the local Government must be involved. The local government should be engaged in such a way that the program will be included as part of their annual activities. (1.6 KM/DDM)</li> <li>▪ <b>Making it a crosscutting (cross-cutting) issue:</b> If a student knows how to swim/has knowledge about DRR or can perform activities for example, fire extinguish, etc., they will have extra points added to their SBA (School based assessment).</li> <li>▪ <b>Include in the curriculum:</b> Generally, he kids in our country have a lot of study pressure. The subject should be included in the curriculum in such a way that it does not create more study pressure on the kids. On the other hand, they get to learn about DRR spontaneously in a participatory way and can acquire life</li> </ul>

skills.

- **Co-ordinations between MoE and DDM:** Officials from MoE and DDM have the opinion there should be a program like this. And regarding this it is extremely important to have proper co-ordination among this two departments and NCTB. MoE and DDM are both willing to help each other regarding this.
- **Parents and Community level awareness:** Sometimes, if you want to teach children about something, parents find it unnecessary and funny. For example, if there is an earthquake drill for kids, parents think that there an earthquake is not happening now, and they are wasting my kid's time doing this. So, in it is important to explain it to the parents in what kind of earthquake hazards we are living on, and media can play a role here regarding this. Which means, the parents and all the members of the society will have to be involved in this program.

• **Policies and Opportunities (for sustainable disaster resilience education): Findings from the Ministry of Education**

Sl	POLICY & OPPORTUNITIES	Comments
01	দুর্ঘটনা বিপত্তি প্রশমিত করার অনেক ধরনের মানুশেরিং করার পাঠ্যক্রম প্রস্তুত করা হয়েছে। Disaster risk reduction and education নাজ একটি framework approve করা হয়েছে। education emergency নাজ একটি সিস্টেমের তৈরী করা approve করা হয়েছে।	[7.9 Shaheen Mia pg-1]
02	National Disaster Management policy: Is very much child centred, also recognised gender diversity and disability issue.	
03	standing Order on Disaster Management: Is a major document on DRR and also support child education and participation in DRR.	
04	Shorokhohose Program: Is প্রাথমিক মূলত বিপত্তি প্রায়, বান্ধবিকা, ইক্সট্রিম, sexual abuse, human trafficking বিষয়গুলো অন্তর্ভুক্ত। এখান একটি প্রকল্প রয়েছে DRR কে include করার।	
05	Student Cabinet: প্রাথমিক ও মাধ্যমিক বিদ্যালয়ে student cabinet বাস্তবায়ন করা হবে। সচিব করা হয়। এটি DRR ISSUE এ কাজ নাটানো যেতে পারে।	Madrasa বা বিষয়টি নিয়ে কাজ হবে। পাঠ্যপুস্তক- English Medium কে নিয়ে কাজ হবে।
06	PEDP4 (Primary Education Development Program): এখান curriculum review করার সুযোগ রয়েছে। এতে প্রাথমিক curriculum সংশোধন করা হবে। এতে DRR যোগ করা যেতে পারে।	এটি ৩ বছর মেয়াদি পাঠ্যক্রম। দুই বছর স্কুলে আনতে হবে।
07	Toll free number 1090: এই নম্বরটি weather forecast ওর জন্য সরকারি স্ট্রিক্ট (খানা) রয়েছে। এটি ব্যবহার করে যেট বড় সফল cyclone, flood, ইত্যাদি খবর খবর জানতে পারে। এই নম্বরটি সংস্কৃত আরও সহজভাবে বুঝি করতে হবে। এবং এটি একটি DRR মিনিস্টার অফিস হতে পারে।	
08	Ma মকুতব ও চামাদিদ: যেহেতু ইমাম সাহাবকে সবাই শ্রদ্ধা করে। তাই তাদের ইমাম সাহাব বান্ধবের আবি পড়ায়। তাই ইমাম সাহাবের মধ্যমে DRR এর প্রচারণা করা যেতে পারে।	
09	আমাদের Government এর policy অনুযায়ী national curriculum এ already incorporate করা আছে, আমাদের program যেন computer মডুল আমের গার্ম 3 থেকে 12 পর্যন্ত কারিকুলাম এ disaster management বিষয় chapter include করা আছে। এমন national policy কে আরও আর national training institution এর অন্য department বা Go NCTB এর মধ্য training institution করা পরিচালনা করে। disaster management module introduce করা হয়েছে। [1.6 Khalid Mahmud pg-37]	ছাত্রদের আমের মনে হয় না। ওগুলো বাধ্য।
10	Parents Teachers Meeting: School এটি একটি mandatory বিষয়। এখানে DRR এর issue হতে পারে। তাহলে parents ও community এর লোকদের মধ্য সহযোগিতা হুই হবে। সবই DRR সংস্কৃত আনতে পারে।	

The End

Shaily, Shanta, Purnima, Mukta, Kabita, Tanna, Eti, Rina, Fardusa, Mayada, Pragati

**Table 6.18. Policies and opportunities for sustainable DRR education program for kids**

<b>SL</b>	<b>POLICY &amp; OPPORTUNITIES</b>	<b>COMMENTS</b>
01	<i>Steps have been taken to mainstream disaster topic in the primary education sector. In this regard, a framework in the name of “Disaster risk reduction and education” has been approved. Also, a new policy- “education emergency” has been approved centrally.</i>	(1.8 SM pg-1)
02	<i>National Disaster Management policy: Is very much child centred, also recognized Gender diversity and disability issue.</i>	
03	<i>Standing Order on Disaster Management: Is a major document on DRR and also support child education and participation in DRR.</i>	
04	<i>Shorno kishoree Program: In this program they cover the following issues: adolescent girl health, child marriage, eve teasing, sexual abuse and human trafficking. But there is an opportunity to include DRR in this program.</i>	
05	<i>Student Council: It is mandatory in the Primary and the Secondary schools to do Student Cabinet. This can be utilized to include DRR.</i>	It is important to think about Madrasa. Also, we should think about English-medium school system.
06	<i>PEDP 4 (Primary Education Development Program): This is a 5-year long program. This will start working from July 2018. There is an opportunity of curriculum review here. Primary curriculum is going to be revised through this. So, there is an opportunity to include DRR in the primary curriculum through this.</i>	
07	<i>Toll free number 1090: This hotline number has been open by the government initiative. All the people in the society both children and adult can know about weather forecast, cyclone, flood and etc. It is important to raise awareness about this number. This can be an item for DRR education as well.</i>	
08	<i>Maktab and Mosques (Maktab is an early morning Arabic/Quoran reading learning class for kids taken by the Imam in the mosque setting): Imams teach Arabic to children and everyone respects Imam. So, DRR awareness and campaign can be built through the Imam.</i>	
09	<i>“According to our Government policy DRR is already incorporated in the national curriculum. We had a program named CDMP, through which disaster management has been include in the curriculum between grade 3 to grade 12. Now according to the national policy, disaster management training module has been introduced in the national training institution, other departments and other training institutions run by the GOs and NGOs.” (1.6. KM, pg-3)</i>	<i>As students we do not think this is enough at ll.</i>
10	<i>Parents Teachers Meeting: It is a mandatory thing in schools. DRR can be also included within this. This way, awareness can be built among parents and the community. Everyone will know about DRR.</i>	
<b>THE END</b>		
<i>Shiuly, Shanta, Purnima, Mukta, Kabita, Tanni, Eti, Runa, Ferdousa, Mayeda, Progoti</i>		

## ***Recommendations for a Sustainable Disaster Risk Reduction Education Program***

*From all the data we analysed we also made a recommendations for a program so that all kids in Bangladesh can learn better DRR. Kids, NGO people and Government people had many suggestions what can be do for better DRR education for kids. Kids in focus group also talked about so many exciting things, especially what they like in the CC-DRR programs and what they do not like. They also talked about school DRR education which is all about why they do not like. We could relate with them. Because in school we never have any DRR education from textbooks, because we do not even know that there are some texts in your books about DRR, not even our teachers talked about it. From participating in this study, we knew that there are actually things about DRR in our textbooks. We might have read those chapters in our textbooks, but we were not aware that those are for DRR. How funny!*

*But anyway, from all the study findings we designed a program. Mayeda explained us about her friends' research study that Dr Briony Towers and her other friends did. They designed a Disaster Resilience Education program framework. Thank you, Dr Briony Towers and friends! So, we follow the structure and put the findings in the table following the structure. It was a little bit hard and tricky but we made it at the end! We are still working with Mayeda to refine that translate it. We to td Mayeda that she can include this in another chapter in her PhD thesis book. You can read it later chapters.*

### ***What we have been Doing after the Data Analysis Workshop***

*We made an existing idea after the workshop. We decided to work for DRR in our school, in our home and in our community as we have been learning from our workshop. We also wanted to share this with Mayeda. So, we talked to our teachers and we decided to make a Whatsapp group where we and our teachers can share pictures and videos with Mayeda. We have been doing a lot of things after that. All this was very much fun! Here we will tell you about some of our successful achievements of DRR works:*

#### ***i) A Little boy died by drowning and we are campaigning for pond fencing:***

*24<sup>th</sup> March 2019, it was the next day of our big school event when we shared our data analysis workshop experience. Eti, one of us, her neighbour's three-year-old son died from drowning. It was so sad. Eti was very upset. Actually, from data analysis we also learned about drowning. Every year too many children die from drowning in Bangladesh. We felt we should do something for that. So, when Eti called us we made a plan. We decided to talk to the family members to know how it happened. This is what happened: They have a pond close to their house. In the afternoon mother was busy cooking in the kitchen. His elder brother was in school. When his father left for market, he followed his father. But his father did not notice that. After a while when mother was looking for the little boy, she found him nowhere. Then after two hours they discovered him in the pond. By the time little boy was dead. As there was no fence around the pond, somehow, he slipped in the pond from the narrow bank. He did not know swimming.*

*After that incident we decided to build awareness about building fence around the pond. We are going to houses and telling them to do it. We talked to the Union Council lady member about it. She said this is a good idea. She will also keep telling people to do it. We shared this with our friend and teachers in school. All of us are now doing this together. In few houses they have put*

fences after that. But we are still working for this. We hope people in our village will make fences around the pond or will fill them up if not needed the pond.

**ii) We had a big pond in front of our school which has been filled out with mud after our campaign and now we have a playground there:**

We had a very big pond in front of our school. We identified it as one of the big risks for us and community kids and people. So, we started to talk to our teachers about it. Our ex-Headmaster Nusrat Jahan also supported us lot with everything we were doing. She also joined us with our work. Together with all the school kids We made a big rally with all the school kids and teachers in front of our school around the pond. We wanted to people look at us and we told them what a hazard this pond is. Community people also agree with us.



**Photo 6.9. We are doing Rally for closing the pond-all the teachers and kids**

Then we talked to the local Union Council people. Their office is very close to our school. We also requested our school management committee about the pond hazard and also that we do not have a playground we can have a playground instead of the pond. We started this in March 2018. Finally, all our hard works became successful. School management committee and union council people agreed to close the pond and make a playground for us. At the end of 2018, the pond has been covered up with sand. First, they drained out all the water in the crops filed ad then big trucks came with loads of sands and pour it all there. We will show you here before and after pictures. The before picture is taken from Google map. All these pictures we collected from our Computer Science teacher. We also shared all these photos in our Whatsapp group with Mayeda.

By the end of December 2019, the pond was completely filled in with sands. All the students, teachers and community people were very happy. After that we organised a cultural program and our annual sports competition in our new playground to celebrate this



**Photo 6.10. Before filling the pond in front of our school**



**Photo 6.11. After filling the pond in front of our school**



**Photo 6.12. During filling the pond in front of our school**



**Photo 6.13. Some of us giving a thank you speech**



**Photo 6.14. Some of us are dancing to celebrate our achievement for DRR and new playground**

**iii) *Child-centred DRR art competition and Get-together:***

*This has been fully organised by Progoti during the time of Eid vacation in 2018. Her mother supported her. She saved her pocket money and Edi (Edi is the money that kids get on Eid festival day as gifts from the grownup relatives in Bangladesh). Progoti invited all her friends-the primary school kids, their parents and brother sister, her friends those do not go to school. She also invited us and all the kids and teachers in our school. She also invited her relatives and neighbours, both kids and grownups. She and her friends made invitation cards. She saved up all her money to buy prizes and snacks for kids. She also got some more money from her mother to do this. For kids there was DRR art competition. There were also songs, poem recitation and dance competition for kids. There was also a musical chair game for the grownups who attended. There were about 70-80 people attended the evens including kids and grownups. Those who got first-second -third got prizes. But everyone who attend any competition got a joy prize.*



**Photo 6.15. DRR Art competition for kids**



**Photo 6.16. A Kid's Drawing from Progoti's DRR Art competition. The drawing is about "Flood in my House"**

**iv) *We are planting trees in schools, houses and around:***

*We are planting trees in our school. We have been telling all the school kids in our school and Progoti and her friend told all the Primary school kids and Runa and Ferdousi (they are in our data analysis workshop team, they do not go to school; but recently they have started going to school as their friend Progoti and we all have been motivation them they started school again in January 2019)also told their other friend and neighbours. All the kids in our village are planting trees in their houses and school. In Tarua Girls High School, we celebrated a three-plantation day during October 2018. We are also planning to make a nursery in our school like some of the focus group kids did in their school. This is exciting!*

**v) *Weekly clean school day:***

*We found that we have lots of dust in our benches and classroom. In our school area sometimes, there is water and wet areas which make nest of insects and nasty mosquitoes. We even get mosquito bites in the classroom sometimes. So, we spoke with all the kids in our school and our Physical Education (PE) Teacher and the Headmaster. We have decided to make a day in week as weekly clean school day. We decided to make it on Thursday as this is the last day of the week and also, we have half school day. On every Thursday we clean our classroom and veranda and*

outsides. We have started doing this from January 2019. First time we decided to do it, we also invited school management committee as our teachers suggested. They also appreciated our plan and helped us cleaning. Here are two pictures from that day.

**vi) Fire and Earthquake drill:**

We are talking to our friends and teachers about organising earthquake and drill. Now from the workshop we know how important it is. We talked to our PE Teachers, Headmaster and other teachers. Our teachers are encouraging us. They said that they are going to contact the local government and Upazila office to organise drill with their support. We are very much looking forward to that.



**Photo 6.17. Introducing weekly clean school day at Tarua Girls High School.**

### **Conclusion**

*Thank you for reading our story. Working in this research has changed our views and life. Now we are working all together for DRR – our friends, teachers, parents and the community. Hope someday you will come to visit us and see how we are changing our village. Goodbye!*

## **Epilogue: From the Adult Researcher**

This chapter documented the findings of the study in the eyes of children, through the voice of children and with the words of children. The chapter has been constructed by the researcher between March and April 2019. To interact with the fledgling young researchers, several conference calls via Skype were conducted with the children and their teachers (the Headmaster, Computer Science teacher and Physical Education teacher) in this period. During these calls, the children devised their own plan about how they wanted to shape this chapter and conveyed their schemes and ideas with the researcher. Except two sections- "*Findings from the Data*" and "*What We have been doing after the Data Analysis Workshop*", all other sections have been spoken by the children in Bengali over Skype, the researcher translated them into English and read it aloud to the children and the teachers. Then it was modified according to the children's suggestions.

The section "*Findings from the Data*" has been directly translated from Bengali to English from the series of charts the children co-researchers produced during the data analysis workshop in early 2018. But as adult the researcher translated, she also shared that with the children for their suggestions and recommendations.

The section "*What We have been doing after the Data Analysis Workshop*" has been mostly translated from WhatsApp Group texts which was created by the children to share their activities with the researcher. However, children added more words and pictures to their stories after the chapter had been written and through Skype conversations.

For the entirety of the section, the children decided what photos they would fancy to include and likewise where to place them. For that, they also consulted with their teachers. They also

advocated the captions for the aforementioned photos. In addition to all these, they also decided the titles of the different sections.

This chapter would not have materialised without the immense support from the Headmaster and the teachers from Tarua Girls' High School. Through the entire process, the Computer Science teacher provided all the necessary technical supports including arranging video conference with children through Skype, sending photos from the children, scheduling next call and moderating the conference calls. The Headmaster supported tremendously by arranging time and cooperating with the children and the researcher. The Physical Education teacher was also present during all the Skype sessions for providing the crucial moral and psychological support to the children.

While this chapter portrays the findings from the children researcher's view, the next chapter will depict the findings from the perspective of the adult researcher.

## CHAPTER 7

### FINDINGS: FROM THE PERSPECTIVE OF THE ADULT RESEARCHER

*Un scientifique dans son laboratoire est non seulement un technicien: il est aussi **un enfant** placé devant des phénomènes naturels qui l'impressionnent comme des contes de fées.*

*(A scientist in his laboratory is not a mere technician: he is also **a child** confronting natural phenomena that impress him as though they were fairy tales.)*

~ Madame Curie: A Biography (1937)

#### 7.1. Introduction

This chapter presents the findings from the view of the adult researcher, a PhD candidate. The findings derived from the study on DRR education for children in Bangladesh are portrayed according to the structure of Activity theoretical framework (Engeström, 1987). Projecting an Activity Theory lens in data analysis helped to depict a detailed picture of the implementation process and outcomes of DRR education for children in Bangladesh, including a) NGO-driven CC-DRR programs, and b) Bangladeshi government's initiatives for DRR education for primary- and secondary-level children, referred to here as School DRR.

#### 7.2. DRR Education for Children in Bangladesh: CC-DRR and School DRR

The study investigates the current practice of DRR education for children in Bangladesh. At present, two sectors are working for DRR education for children: the NGOs and the government. Following the framework of Activity Theory (Engeström, 1987), the study investigates the current practice of DRR education as an organisational process that involves teamwork and participation of individuals as groups, rather than following an individualistic approach. Thus, from a broad viewpoint, there are two activity systems that exist within the larger activity system of DRR education for children in Bangladesh: CC-DRR and School

DRR. Within the implementation process for these two activity systems, four distinct aspects have been identified from the data:

- i) Design and development;
- ii) Training of Staff/Teachers;
- iii) Delivery/Facilitation; and
- iv) Monitoring and Evaluation.

Each of these aspects has an independent yet interlinked activity system of its own. In Activity Theory such a characteristic is known as “multi-voicedness” (Engeström, 1987). The following sections review the findings on these four aspects for both CC-DRR and school DRR through the Activity Theory framework from the following perspectives:

- i) Subjects and Objects;
- ii) Rules and Tools; and
- iii) Community and Division of Labour.

Figure 7.1. shows a flowchart of the data analysis process and the relationship of the interlinked activity systems.

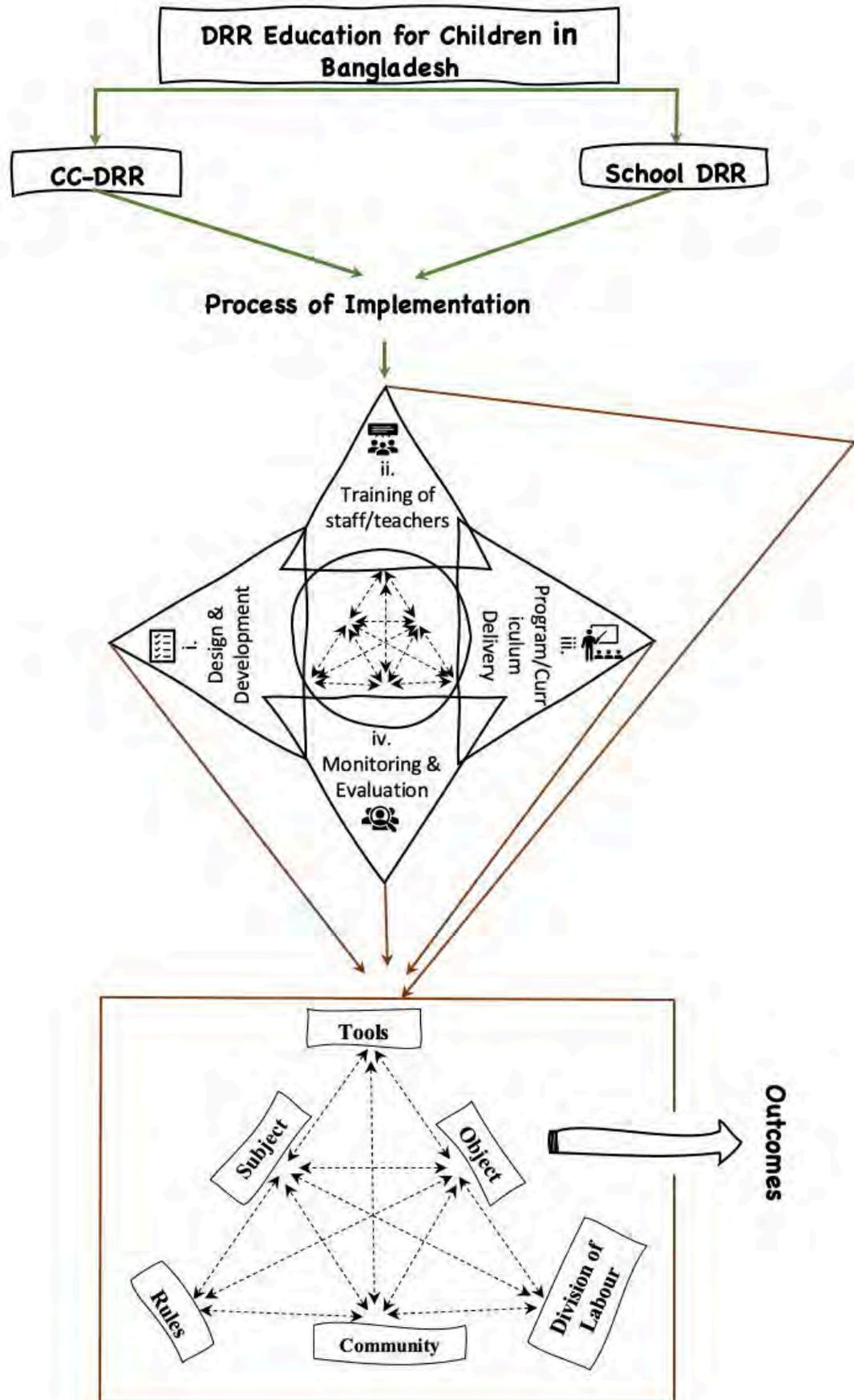


Figure 7.1. Activity Framework of DRR Education for children in Bangladesh

### **7.2.1. Design and Development**

In Bangladesh, while the government's initiatives on DRR education for children involves integrating DRR in the school curriculum (School DRR), NGOs' initiatives include implementation of CC-DRR programs in school and community settings. NGOs are involved in designing DRR programs for children that are aligned with their existing organisational policies, while the government focuses on including DRR topics in textbooks. NGOs programs are project-based. Thus, typically, a CC-DRR project is run from between one and five years. Projects are also implemented in small geographical areas, while the curriculum covers the whole country at primary and secondary schools. Sometimes, both their works overlap, such as when NGO programs include school-based lessons which are similar to those of school DRR.

#### **7.2.1.1. Subjects and Objects in Design and Development of CC-DRR Program and School DRR**

Here, 'Subject' indicates the individuals who are involved in designing the program, projects or the curriculum. 'Object' applies to the group of people responsible for the implementation of the programs.

Staff members from the leading CC-DRR-implementing NGOs in Bangladesh reported that, although children were involved in various DRR-related projects, only after 2010 had they started implementing CC-DRR projects. Before that there were other DRR projects for children, known as child-led DRR or community-based DRR with children, etc. However, CC-DRR programs are being developed by the CC-DRR practitioners, including regular staff and consultants, focusing on the requirements of the particular projects and their organisational policies.

The participants involved in design and development of CC-DRR programs are staff from the particular NGO, representatives from the donor agency, local and international consultants but with very little consultation (sometimes none) with children. Sometimes NGOs also involve advisors from the Department of Disaster Management (DDM), the Ministry of Disaster Management and Relief (MoDMR), the Directorate of Primary Education (DPE) and the National Academy for Primary Education (NAPE). As the funding comes from the donor agencies, NGOs first design a CC-DRR project and submit it as a proposal to the donor agency. If their project is accepted for funding, the next step is recruiting the project staff for implementation. Most times, project staff are recruited internally within the organisation, but sometimes it also recruits new staff. If the project covers larger geographical areas, NGOs also make partnerships with one or a few other local NGOs for implementation of CC-DRR programs. For example, the study found that for a CC-DRR project's implementation, Save the Children had a partnership with Plan International, Muslim Aid, Community Participation and Development (CPD), and the Social and Economic Enhancement Program (SEEP).

Some NGO staff expressed concern about involvement of international consultants in designing CC-DRR projects in Bangladesh. They believed that those international consultants might not have the right knowledge about the geographical and socio-cultural situation and the needs of children in the context of Bangladesh; as expressed by a local CC-DRR staff member:

They [international consultants] design CC-DRR programs which we implement in various locations in Bangladesh. Do they know better than us about our culture? Our geographical situation? I would say even our national consultants or head office boss, who are also involved in CC-DR project design, often do not have good knowledge

about the local situation. It is best that they involve local staff and community people in project design. (AH, Dhaka)

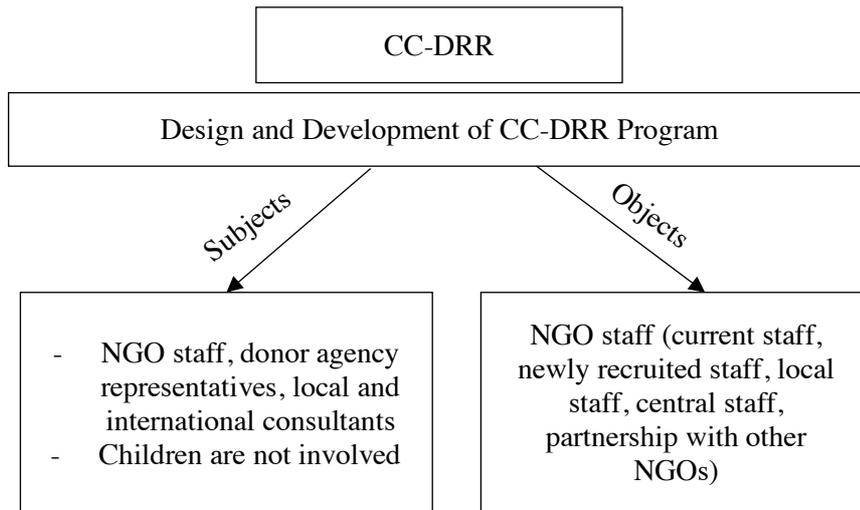
Thus, programs are designed and developed by the staff at central level, mostly based in Dhaka, together with national and international consultants.

NGO staff involved in delivering a program at grassroots level consider that they should also have the opportunity to get involved actively in the design phase, as they consider themselves to have more experience and knowledge at that level where ultimately the programs are implemented.

The focus group with children also revealed the absence of child participation at CC-DRR design phase:

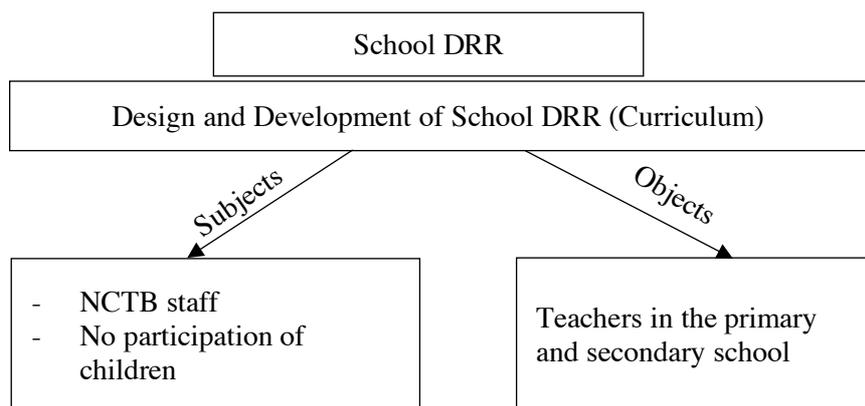
I wish we had any chance to participate in designing our own disaster education program. We have so many ideas to do things in more interesting way. (Aysha, age 13, Grade VII, Dhaka)

We like many things in CC-DRR program but there are also other things which we would like to be designed differently. (Kanta, age 15, Grade IX, Narayanganj)



**Figure 7.2. Subjects and objects in design and development of CC-DRR program**

Government initiatives on DRR and disaster resilience education for children are mostly based on integrating DRR into the curriculum (in existing textbooks), both at primary and secondary level. Integration started from 2004 DRR when DRR topics were incorporated into textbooks. The sole responsible department working in designing and developing the curriculum is the National Curriculum and Textbook Board (NCTB). NCTB works as an autonomous organization under the Ministry of Education. NCTB is responsible for designing the primary and secondary curriculum. They also design, develop and publish textbooks according to the curriculum. While the curriculum experts from NCTB are involved in designing the curriculum as subjects, the objects are the teachers in primary and secondary schools who deliver the lessons to children. The ultimate objects or end-users are the students (children) at primary and secondary level.



**Figure 7.3. Subjects and objects in design and development of School DRR**

### **7.2.1.2. Rules and Tools in CC-DRR Program Designing and Curriculum Development**

In program design and curriculum development the rules indicate the contents, elements and activities included in the program and curriculum; the tools refer to the techniques and logistics involved.

The study found that CC-DRR programs are spread within different projects. That is, CC-DRR does not exist as a standalone program; rather different elements of CC-DRR are included through different programs. The study identified the following elements in practice of CC-DRR programs in Bangladesh:

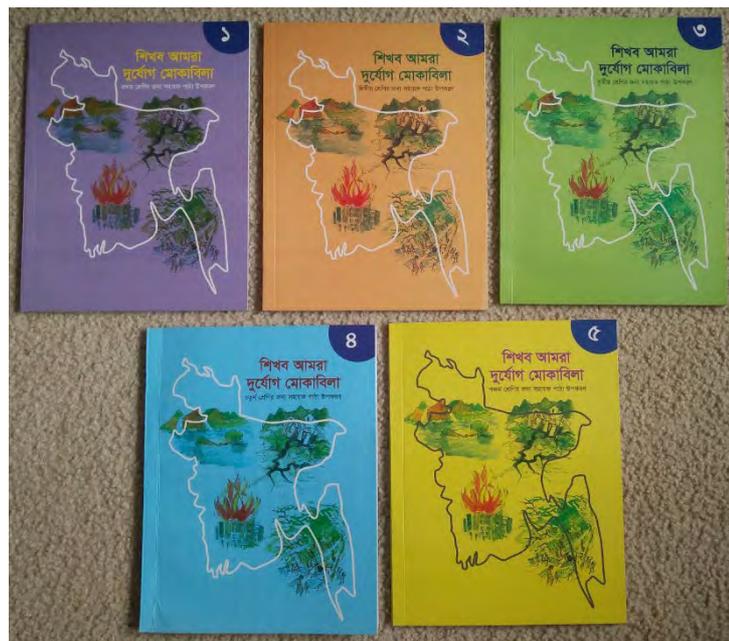
- i) Tree planting;
- ii) Drill/Simulation for earthquake and fire;
- iii) Debate on DRR-related topics;
- iv) Group discussion among children;
- v) Cultural activities: singing, drama, art, etc;
- vi) Keeping First Aid box in School and giving children first aid training;
- vii) School Risk Assessment;
- viii) Community Risk Assessment;

- ix) Lectures: classroom session DRR knowledge;
- x) Day observation;
- xi) Theatre for Development (TFD);
- xii) Hygiene knowledge;
- xiii) Community awareness;
- xiv) Supplementary primary-level textbooks developed by Save the Children;
- xv) Rallies, human chains, processions; and
- xvi) Complaint box and toll free telephone numbers for complaints.

As the staff reported, these elements are influenced by international frameworks, namely, Sendai Framework for Disaster Risk Reduction 2015-2030, Millennium Development Goals (MDGs) and the Sustainable Development Goals (SDGs), and international networks associations such as the Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector (GADRRRES) and the Worldwide Initiative for Safe Schools (WISS). However, all these elements are not included in a single program. The study found that elements are spread across different projects focused on different issues, namely, community-based DRR, climate change, school safety plans, safe school programs, child parliament, etc. However, the projects are implemented only for a short period of time, usually between two to five years. Therefore, the main tool involved in CC-DRR program design and development is the distribution of different elements across projects. Thus, a CC-DRR program is a collection of many different elements and activities spread over many different projects run by NGOs in Bangladesh. For implementation guidelines of CC-DRR programming, all the NGOs follow the “Child-Centred DRR Toolkit”, developed by Plan International in 2010.

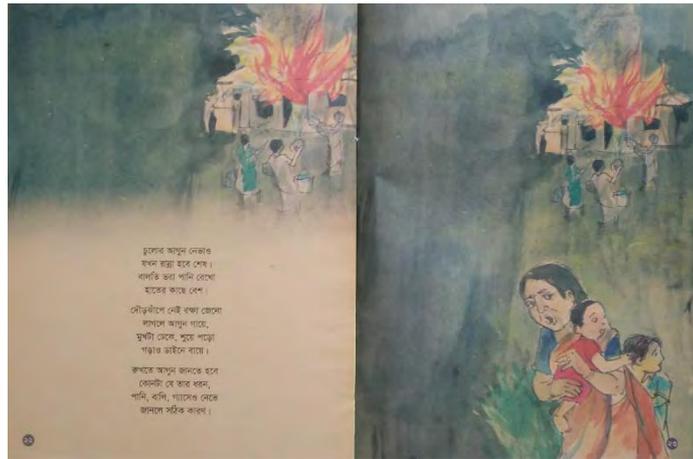
As an initiative of the CC-DRR program, Save the Children Bangladesh has also developed a series of supplementary DRR textbooks for primary school (from Grade I to V) in early 2017.

The title of the book series is “শিখব আমরা দুর্যোগ মোকাবিলা”, translated as “We Will Learn Disaster Management” (See figure 7.4 and 7.5).



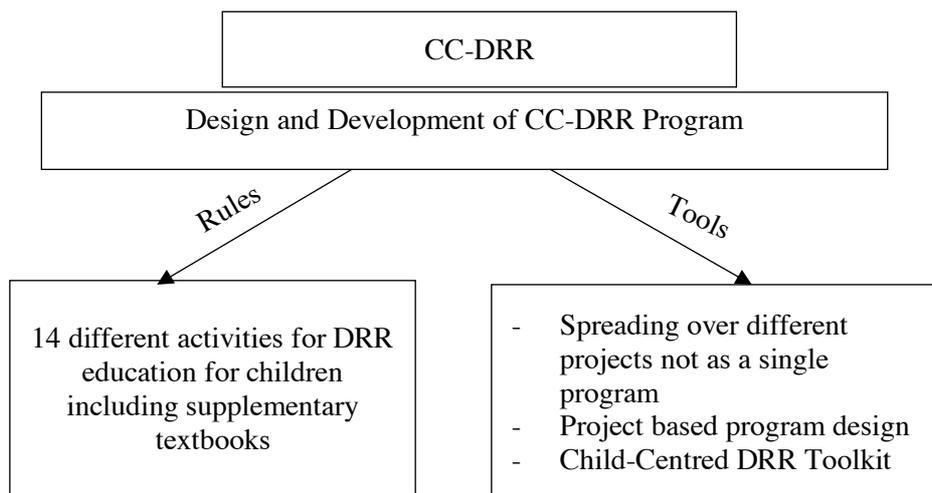
**Figure 7.4. Supplementary primary textbooks for DRR education developed by Save the Children Bangladesh**

Each textbook includes seven short stories and poems with illustrated drawings. The book series covers the following topics: fire safety, earthquake, flood, storm, thunder and lightning, and other common hazards in Bangladesh. These books are written in Bengali.



**Figure 7.5. A poem about fire safety from the book designed for Grade II**

But up to now, these books have not yet been introduced to children in school. NGO staff have expressed concern that delivering lessons from these supplementary textbooks in the classroom will require proper training and skills for teachers. While they have not yet developed any teacher training module for implementing these textbooks in the classroom, some of the staff considered them “one of those project-based outputs that may not lead anywhere in the long term.”



**Figure 7.6. Rules and tools in design and development of CC-DRR program**

Since the government's initiative for DRR education for children only includes integrating DRR in the curriculum, textbooks are the main tools for school DRR. Teachers deliver the lesson to children in the classroom setting.

The study found that DRR occupies only a little space in textbooks, mostly through the "Bangladesh and Global Studies" subject (from Grade III to Grade X). Moreover, DRR is also integrated in other textbooks on a very small scale, e.g., through poems and stories regarding disasters, emergency and climate change (such as flood, fire, earthquake, storms, etc.), mostly in Bengali and English textbooks, and some in Social Sciences and Geography. But the curriculum experts consider the current DRR inclusion situation in the curriculum is a "tiny portion" and "insufficient." They are also concerned about how much appeal DRR has for children and teachers through the integrated materials because the focus is often diverted to the core subject matter, such as the literary significance of a poem rather than the DRR content of a poem or in a mathematical problem referring to DRR focuses more on mathematics than on DRR content. The study noted the same findings from the focus group with children, who said that the children and teachers are often unaware of the DRR reference in poems. Therefore, the curriculum experts suggested that more emphasis should be given to including DRR as a separate textbook in the curriculum. A teacher training module would also have to be developed for teaching DRR in primary and secondary schools, and teachers should be given training accordingly.

The study found that inclusion of DRR in the curriculum is on an *ad hoc* basis. For example, when the government signs an international treaty such as the UN's Sustainable Development Goals or the previous Millennium Development Goals, or if there is a recent disaster, NCTB

is instructed by the government (via the Ministry of Education) to include certain DRR issues in textbooks.

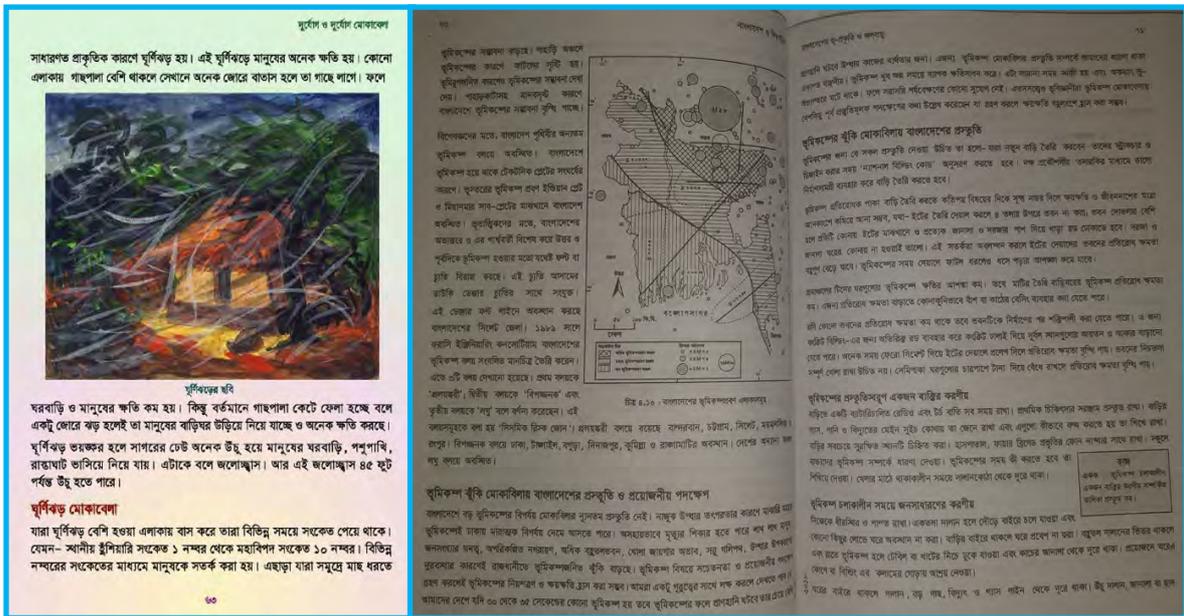
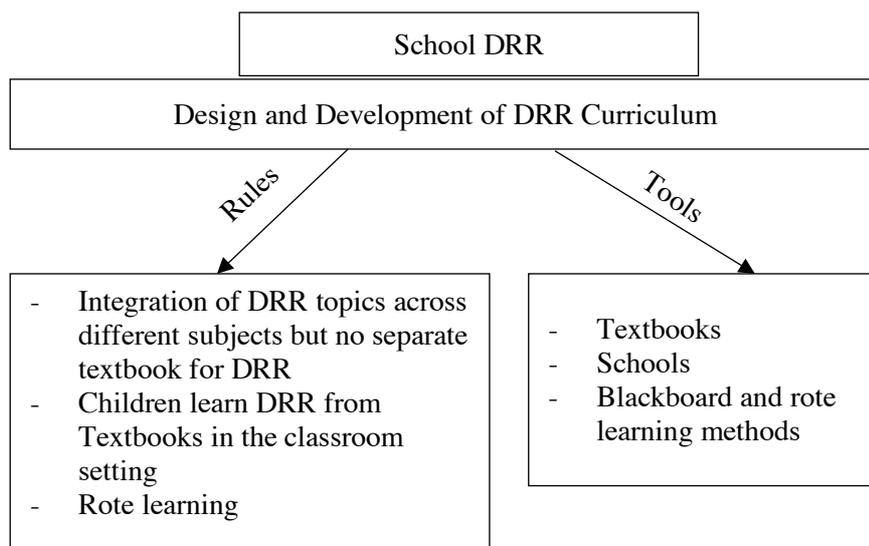


Figure 7.7. Pages from DRR chapters in Textbooks.  
 Left: Grade IV, about cyclones; right: Grade IX-X, about earthquakes

As there is no separate textbook for DRR, what NCTB does is incorporate certain DRR topics in existing textbooks to the extent that it can fit within that particular subject but at the same time the curriculum experts considering this “not sequenced, scattered but at the same time insufficient for proper learning of DRR.” NCTB also expressed concern that they do not have DRR experts in their team. However, to date they have not yet developed any particular guidelines or teacher training module for teaching DRR in the classroom. The subject teachers cover the integrated DRR topics in textbooks in the same manner they do other topics. But curriculum experts are concerned that textbook-based rote learning is not very effective for DRR because it has no option for interactive learning or child participation.



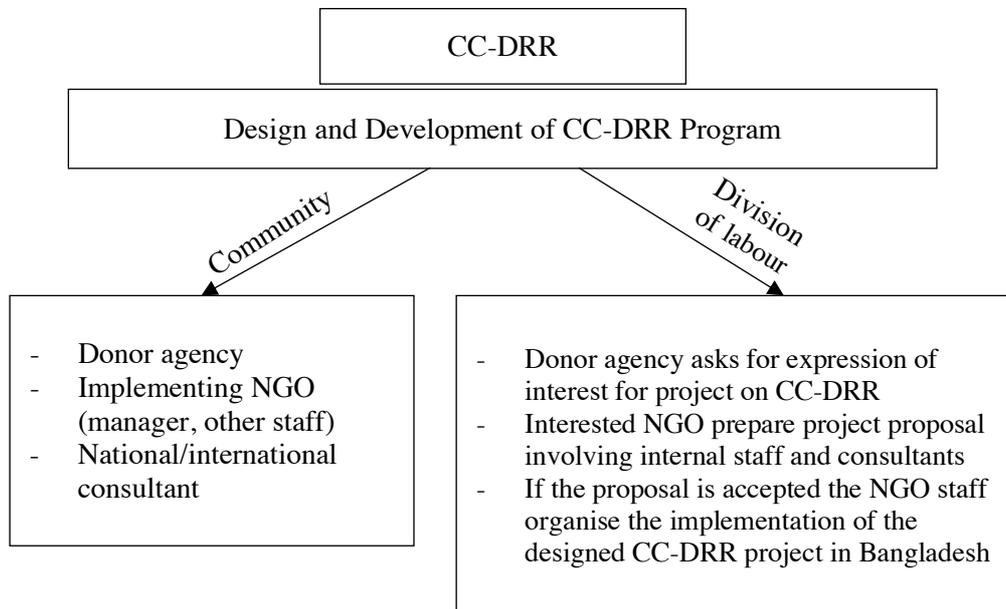
**Figure 7.8. Rules and tools in design and development of School DRR**

### **7.2.1.3. Community and Division of Labour in Design and Development of CC-DRR program and School DRR**

Here the community refers to the organisations and people involved in the task of designing the program and curriculum. The division of labour indicates the order of responsibilities and participation of this community.

The design phase involves the donor agency and the implementing NGOs. Often it also includes national and/or international consultants. As already mentioned, CC-DRR is spread around different projects, in designing a particular project focusing CC-DRR elements, the NGO managers, staff and external consultant work together to design where the focus remains to develop the objectives of the project that fit with the interest of the donor. Thus, children do not have a space to participate in design phase of the CC-DRR program. However, while

designing a project, NGO staff involved in designing consider about the liking and disliking of children from their previous experience.



**Figure 7.9. Community and division of labour in design and development of CC-DRR program**

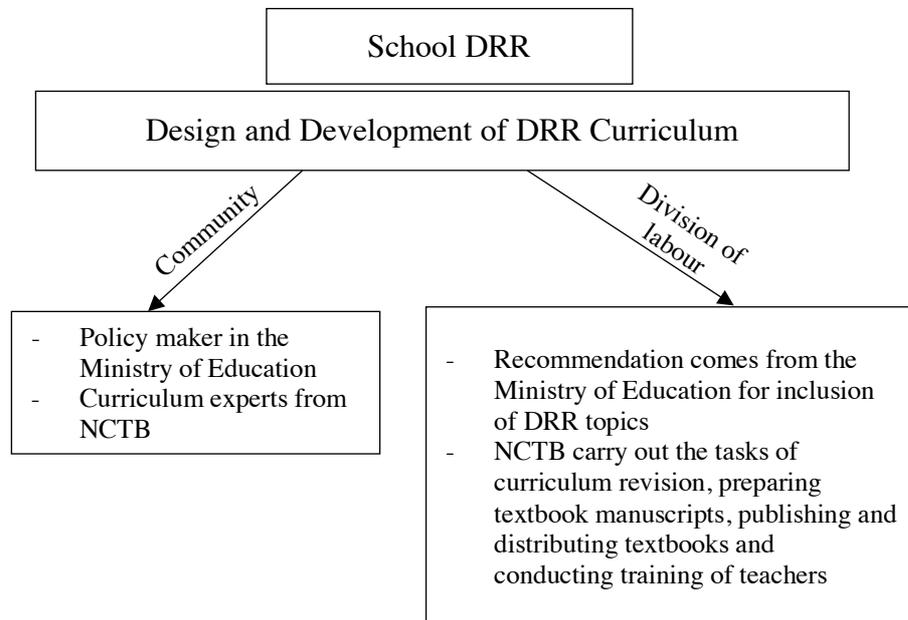
It is important to keep in mind that DRR occupies only a very small part of the curriculum and textbooks. The two organisations involved in designing and development of the curriculum are the MoE and NCTB. The study found that the DDM is not engaged in developing curriculum for DRR education for children. But they have expressed an interest to cooperate and coordinate with MoE and NCTB in future for inclusion of DRR as a separate subject. The DDM is cooperating and supporting Save the Children and Plan International in implementing CC-DRR programs.

In curriculum design and development, the division of labour involves a quite simple process. While the MoE provides recommendations for inclusion of DRR in the curriculum, curriculum

experts at the NCTB take on the rest of the job. The study identified the following responsibilities carried out by NCTB:

- a) designing the curriculum (inclusion of DRR)
- b) reviewing the curriculum and introducing changes
- c) preparing manuscripts for the textbooks according to the curriculum
- d) approving textbooks
- e) publishing and distributing of textbooks in district and *Upazila* level
- f) training of teachers for classroom delivery (on a very small scale; it does not cover any particular attention to DRR lesson).

The study did not find any participation of children in the process of curriculum design and development.



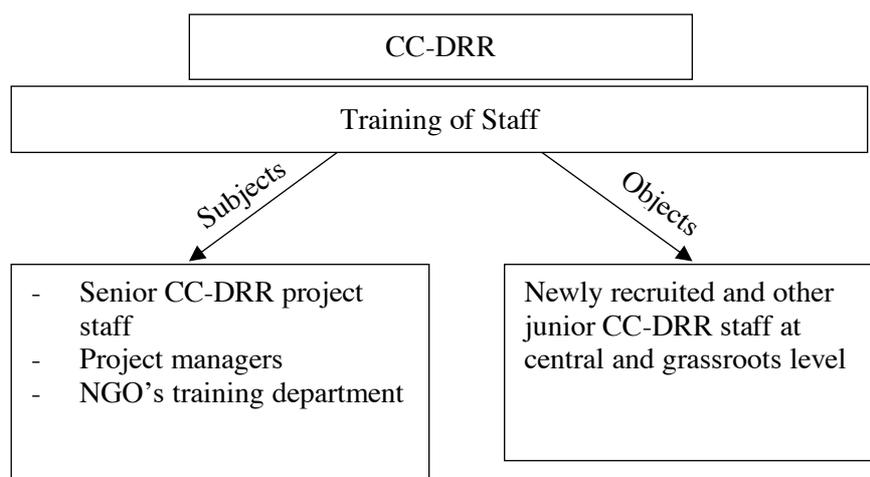
**Figure 7.10. Community and division of labour in design and development of School DRR**

## **7.2.2. Training of Staff/Teachers**

The next step after design and development of a CC-DRR project or DRR curriculum is training of the staff and teachers. Like the design phase, the training phase also comprises subjects and objects, rules and tools, and community and division of labour.

### **7.2.2.1. Subjects and Objects in Training of Staff/Teachers**

Once a CC-DRR project has been designed and staff have been recruited, it is time for training of staff for implementing the project. However, it is only the newly recruited staff who receive training about the project although all the project staff have an orientation at the beginning of a new CC-DRR project. The senior staff and managers take responsibility for conducting training for new CC-DRR staff both at central and grassroots levels. Most times, training is organised in a workshop system. In the CC-DRR-implementing NGOs like Save the Children and Plan International there are dedicated departments for training and development that conduct training for staff on issues time to time. However, this does not particularly provide training for CC-DRR implantation although it does separately involve child rights, education, DRR, etc. Thus, the study found that, in the NGO sector, for CC-DRR staff training the subjects are the senior staff, managers and training department, while the objects are newly recruited CC-DRR staff at central and grassroots levels.



**Figure 7.11. Subjects and objects in training of staff of CC-DRR program**

The study found that the senior staff involved in implementing CC-DRR programs for more than five years are generally more confident than new staff who are comparatively less experienced. However, all staff are concerned that the training they receive is more focused on achieving the goals and objectives of the project rather than facilitation and pedagogical skills; according to a junior CC-DRR staff in Dhaka:

Sometimes I really struggle how to deliver an activity with children confidently. Although I have received training about A to Z of my project goals and timelines and targets, I did not receive thorough training about dealing things with children and deliver these DRR lessons and activities in a more child-friendly manner. (AK, Dhaka)

In regard to school DRR, although NCTB is responsible for developing the curriculum it is not responsible for training teachers. However, after a revision of the curriculum NCTB sometimes organises training for a very few teachers from each district (usually Headmasters) with an aim to prepare them as trainers of other teachers. But this training does not cover delivery of DRR lessons and NCTB also does not have responsibility to follow up the training. There are four

major institutes in Bangladesh which provide training to primary- and secondary-level teachers:

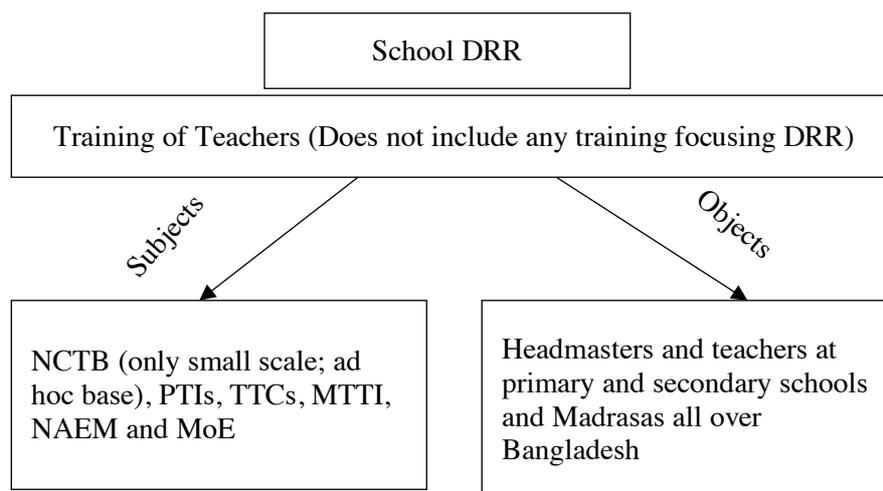
- a) **Primary Teachers Training Institutes (PTIs):** PTIs provide in-service training for primary school teachers – the Certificate in Education (C-in-Ed). Nationally there are 67 government-owned PTIs and one private PTI. Every year more than 15,000 primary school teachers enroll in these institutes for the C-in-Ed course. There are also 482 *Upazila* resource centres for short-term training for in-service primary school teachers. However, the study found that DRR is not covered in their teacher training module.
- b) **Teachers Training Colleges (TTCs):** TTCs provide training through the Bachelor of Education (BEd) for secondary-level teachers at government and non-government secondary schools. There are 118 TTCs in total, including 14 government-owned TTIs. The BEd is not exclusively an in-service training program; it is also open as pre-service training to anyone who wants to have a secondary school teaching career. DRR is not included in their training module.
- c) **Madrassa Teacher Training Institute (MTTI):** There is only one MTTI in Bangladesh and it is state-owned. This institute provides training for Madrasa teachers at both primary and secondary level, as Madrasas have a different education system, based on Islamic religious studies.
- d) **National Academy for Educational Management (NAEM):** This state-owned academy also provides various short- and medium-duration training to primary- and secondary-level teachers on issues including administration and management. They do not provide any training to teachers that focuses on DRR lesson delivery.

Apart from these formal teacher training institutes, projects under the MoE are often organised as in-service, short-term training programs for the professional development of primary and

secondary school teachers all year round. This training can run from a single day to six weeks. However, interviews show that that none was DRR-focused nor has any training yet been provided to teachers or trainers of teachers, nor there is any plan to do so in the near future. An Education Officer from the Directorate of Primary Education stated:

I have never received any training myself on children’s DRR curriculum. I never received any instruction to train my teachers about it. Even now when we are drafting the next five-year plan, there is no agenda for this in there either.

Thus, the core subjects included in teacher training are NCTB, PTIs, TTCs, MTTI, NAEM and MoE; the objects are the teachers of primary and secondary schools and Madrasas. The study findings show that, although the curriculum integrates DRR at primary and secondary levels, the teachers do not receive any training on how to facilitate a DRR lesson. NCTB has raised concern that, since it is the responsible body for curriculum design and development, teacher training institutes should involve it to advise in designing training modules and programs.



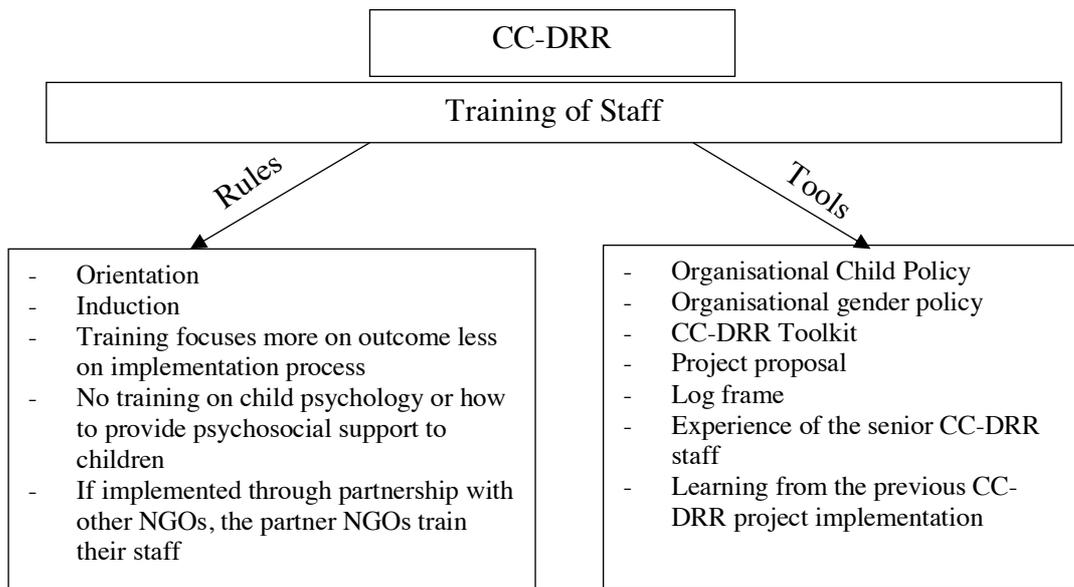
**Figure 7.12. Subjects and objects in training of teachers of School DRR**

### **7.2.2.2. Rules and Tools in Training of CC-DRR Staff/ School Teachers**

There are certain rules and tools associated with the training phase applicable to NGOs and the government sector.

The study found that, in the NGO sector, all the CC-DRR-implementing NGOs, including Save the Children and Plan International, follow the same strategy: the main rule is that all staff associated with CC-DRR project implementation undergo primary induction or orientation at the beginning. Most of the time the training is conducted by senior CC-DRR staff, including project managers. This orientation covers the particular CC-DRR project plan, the log frame, and geographical information on implementation areas. The staff are also introduced to organisational child and gender policies. After the initial introduction, the training goes deeper into the listed activities in the project. Most CC-DRR practitioners consider that this sort of training is more focused on how to achieve the outcomes of listed objectives in the project rather than quality facilitation and implementation. One NGO staff member explained:

When there is an objective in a CC-DRR project such as, more or a certain target number of children will have better DRR knowledge and skills, our training focus on how to achieve the number of children and how to access the children and cover them under project. But they often miss how as implementing staff we can better deliver the lesson to children. As a result, we just typically discuss DRR issues in the classroom. But I can often see that children find it hard to concentrate on speech from us. I think our training should be more focused on quality implementation techniques so that we are able to facilitate session with kids in an interesting and fruitful manner.

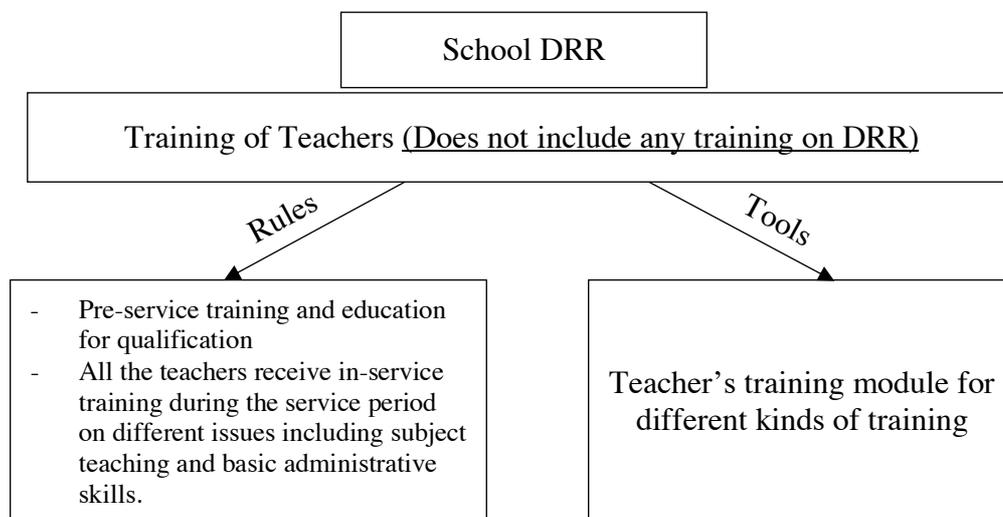


**Figure 7.13. Rules and tools in training of staff of CC-DRR programs**

Moreover, many staff are also concerned about having no training on how to provide psychological support to children. New, young, grassroots-level staff find it more challenging to deal with children’s psychology and emotional reactions during CC-DRR facilitation; senior staff, although finding it hard, are able to manage by utilising their learning from experience. The study also found that a CC-DRR project team does not include any child psychology expert. Some staff are confident about their ability to understand child psychology although they did not have previous formal education on child psychology, nor had they received training from their NGO on this. However, most staff consider that they lack knowledge and skill to provide psycho-social support to children. CC-DRR staff also suggested including disaster-related stress management techniques for children in CC-DRR programs.

Although in the Government sector there is scope for providing DRR-focused training to teachers, unfortunately this is not yet in practice. Teachers at primary and secondary schools

receive considerable training, in-service and pre-service, from institutes but none of these have any focus on DRR lessons. Thus, the typical rules are that teachers will have the required general training and education received as a qualification for undertaking a teaching career. But once they start their teaching career, they keep receiving training such as subject teacher training, general administrative skills, information and technology training, etc. Each of these training units has specific modules which can be regarded as the main tool here.



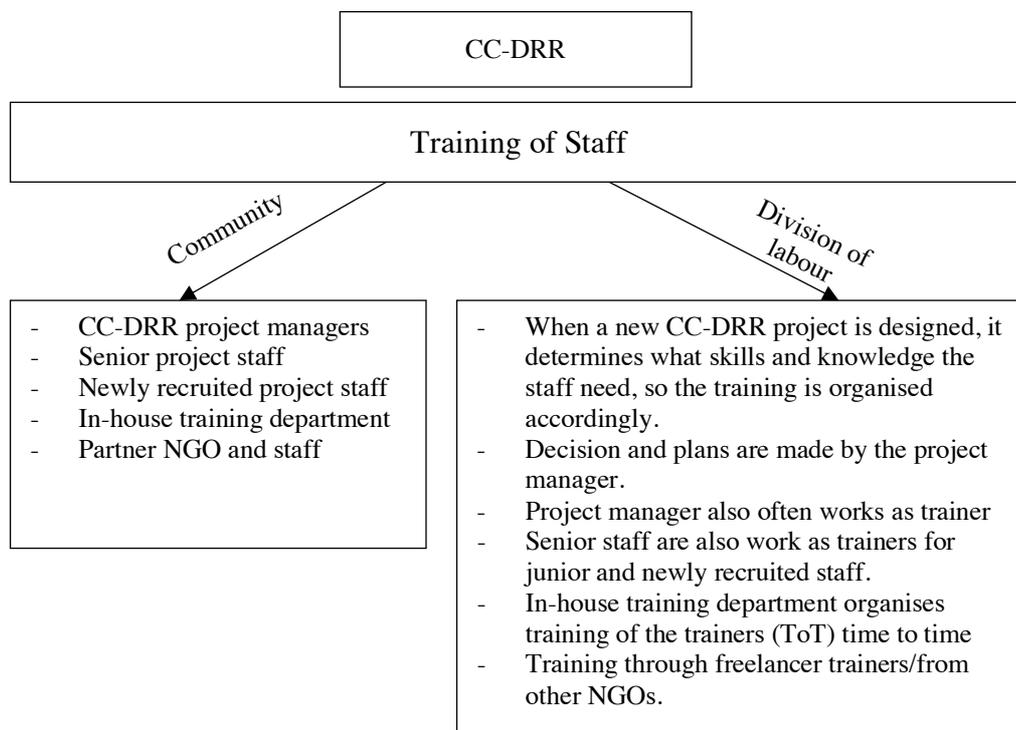
**Figure 7.14. Rules and tools in training of teachers of School DRR**

### **7.2.2.3. Community and Division of Labour in Training of CC-DRR Staff/School Teachers**

‘Community’ here indicates the whole group of people, departments and organisations engaged in training of staff of CC-DRR programs and teachers at school level.

Although it may seem that the community and division of labour for CC-DRR staff training is quite simple and revolves around trainee and trainer relationships, the study found that, in the NGO sector, it involves a multi-functional community and distribution of labour among community members. The community for staff training typically involves all the staff of the

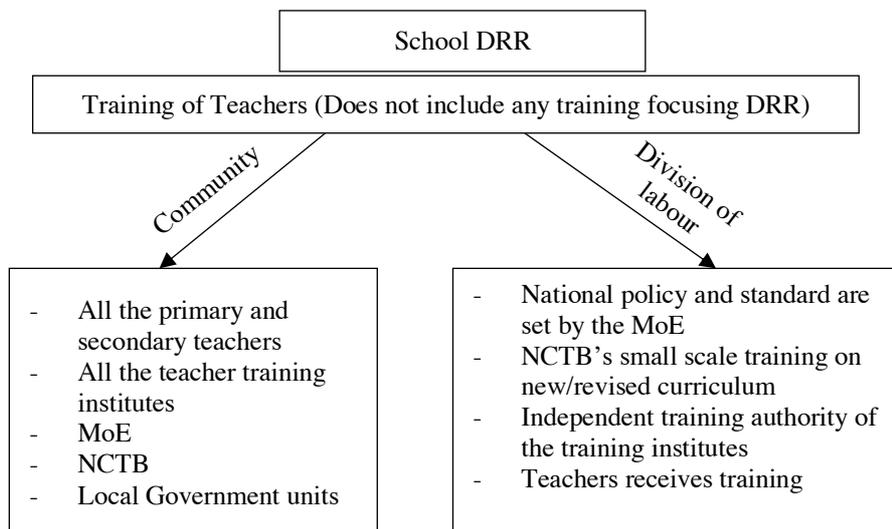
particular CC-DRR project. However, it also includes NGOs’ internal training departments as well as partner NGOs. There are times when certain training is organised by the implementing NGO by hiring freelancer trainers or trainers from other NGOs. In the labour division for training, it is the project manager who has responsibility for identifying training requirements, making decisions and organising training. Managers also often have to act as a trainer for other project staff. At the second level, it is the senior staff who have the responsibility of training new staff at central and grassroots levels. A CC-DRR project also depends on implementing NGO internal training departments for receiving training. If a CC-DRR project has a partnership with another NGO, the project managers sends the requirements of the project staff’s knowledge and skills to the partner NGO. The partner NGO then organises the required training for the project staff.



**Figure 7.15. Community and division of labour in training of staff of CC-DRR program**

In School DRR, the teacher training community is quite large. While teachers from all primary and secondary schools in Bangladesh receive training, trainer bodies and institutes engaged in

the community are the teacher training institutes, the MoE, their projects and NCTB. However, apart from training institutions, project-based training responsibility is often taken by the local government unit such as *Upazila Parishad* (Sub-divisional council) and District Council. The training institutions are independent organisations for providing training, yet they also have to abide by national policies and requirements set by the MoE. Still, although in the government sector, a strong community and structured division of labour is in place for teacher training, unfortunately DRR has not yet been included in the training module.



**Figure 7.16. Community and division of labour in training of teachers of School DRR**

### 7.2.3. Delivery of the CC-DRR Program and School DRR

In this phase the CC-DRR project and DRR curriculum are finally brought to children. All the participants in the study considered it the most important part of DRR education because this

is where the CC-DRR programs and DRR curriculum are “actually implemented [delivered] to the children.” The subjects and objects, rules and tools, and community and division of labour associated with delivery are presented in the following three sections.

### **7.2.3.1. Subjects and Objects in CC-DRR Program/DRR Curriculum Delivery**

For CC-DRR program delivery, NGO staff are the solely responsible subjects for delivering the pre-designed program to children. CC-DRR program activities are implemented both in school and community settings. Some CC-DRR projects are designed to be implemented only in school settings, some for community settings and some involve children in both. Likewise, some projects are delivered in urban areas, some in rural areas and the rest in both settings. Some CC-DRR projects are designed for low socio-economic areas, such as slum, and some are designed for children from middle-income backgrounds. However, the study found that for some reason CC-DRR projects are generally not delivered to children belonging to high-income families. In addition, from participant observations and the focus group discussions it has been observed that, when CC-DRR programs are implemented in co-education school settings, the number of girl participants is considerably lower than number of boys. The study found that children with a disability were not yet able to receive much attention in the delivery phase. The staff think that it is hard to get access to children with disabilities to have them participate in CC-DRR program. Although all the NGO staff participating in the study could give examples of achievements regarding people with disabilities, including young adult from other projects other than the CC-DRR project, none had experience in dealing with children with a disability in a CCDRR project. A CC-DRR staff member in Dhaka stated:

We do not necessarily focus on children with disability in terms of CC-DRR. I cannot really recall any CC-DRR activities including children with special needs. But they are certainly welcome to participate in our program. I think in the program design they

should specially include this issue and put this in our training. (Ms A, CC-DRR project staff, Dhaka)

In addition, CC-DRR does not show any evidence of including any child from the *hijra* (transgender) group. CC-DRR practitioners stated that this issue never crossed their minds – involving *hijra* in the program with other ‘normal’ children:

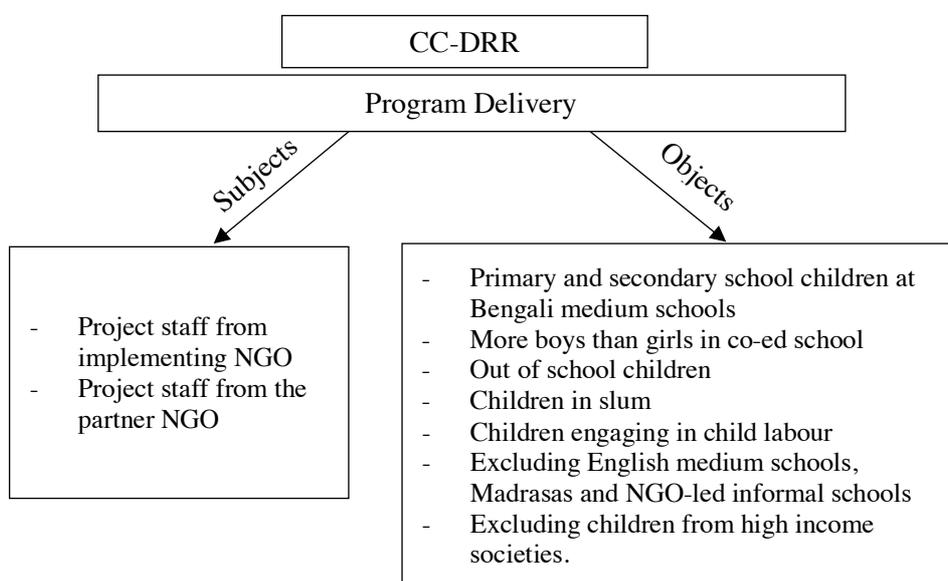
We actually never thought of them, *Hijras*, for CC-DRR, not that the project proposal includes anything about them, not that I saw in my eight years’ experience. Typically, at the age of 12 or 13 when their behaviour and physical differences are observable, they usually left school and most of them join the *hijra* community. Some of them do not even ever start school, I must say, honestly, and parents abandon them to the *hijra* community due to social and cultural pressure. (AH, CC-DRR project staff, Dhaka)

Then again, although there some differences between boys’ and girl’s participation were identified through the focus groups, the CC-DRR staff did not mention any concern regarding this. CC-DRR programs are implemented both in co-education and single-sex schools. However, focus groups with children show that when CC-DRR programs are implemented in co-educational schools, the number of girl participating is significantly lower than that of boys.

Moreover, although CC-DRR projects are implemented for children at primary and secondary schools, the programs are limited within Bengali-Medium Schools (both public and private). Therefore, the four other streams of education in Bangladesh – Madrasas, English-medium schools, vocational/polytechnical schools and NGO-led informal schools – are out of CC-DRR project coverage.

However, regardless of the geographical areas and settings, all projects are delivered to children, thus making children core objects of CC-DRR project implementation. Yet the study found that, in NGO culture in Bangladesh, the staff treat the children as project “beneficiaries” rather than participants. Thus, the interviews show that most project staff are confused about the term ‘participation of children’ because they see children as project beneficiaries and consider participation as the number of the beneficiaries:

Children are beneficiaries of CC-DRR projects, we are implementers. Our responsibility is to deliver the project to the children for their benefit and we let them participate in the project so that they can take benefit by learning DRR and help community. (AH, Dhaka)

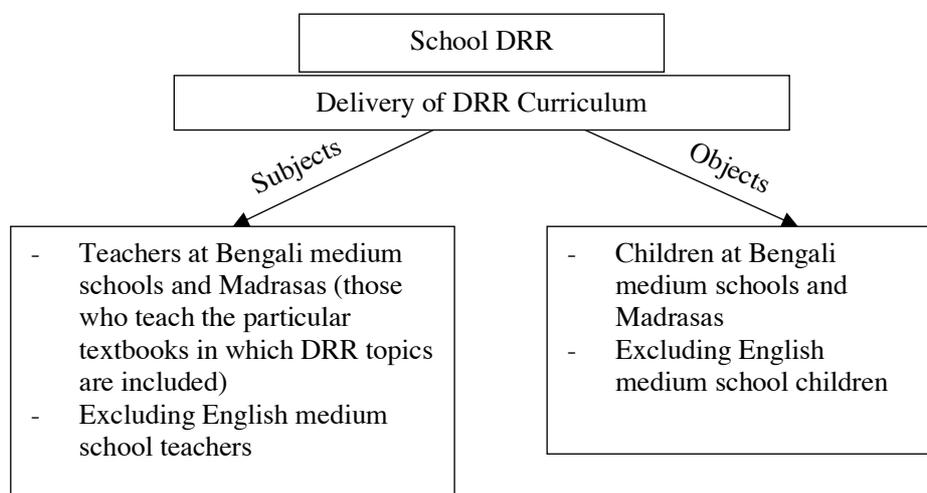


**Figure 7.17. Subjects and objects in delivery of CC-DRR program**

Also, although CC-DRR project activities involve learning sessions in classroom settings, teachers are not involved in facilitation. Rather, the NGO staff deliver the session in a set-time

with some children, either in after-school sessions or during the leisure break. Hence the NGO staff are the only subjects in program delivery. Further techniques of program facilitation and lesson delivery can be found in the Rule and Tools section (7.2.3.2).

For delivering the DRR curriculum in the classroom setting, school teachers have the function of subjects and students serve as the objects. As already explained, DRR is integrated in the curriculum through some textbooks by including some topics, so that, to have a clear idea about the subject's role, it is important to note that here the subjects are the teachers only, teaching from those textbooks. Moreover, as government's initiatives in integrating DRR into the curriculum do not include English-medium schools, both teachers and children at English-medium schools are excluded from DRR education. It is also important to know that generally children from high- or higher-middle income families attend such schools.



**Figure 7.18. Subjects and objects in delivery of School DRR**

### **7.2.3.2. Rules and Tools in CC-DRR Program/DRR Curriculum Delivery**

The first rule of CC-DRR program delivery is that only the project staff deliver the program. Although CC-DRR activities are implemented in school settings, teachers are not allowed to participate in facilitation.

The second important thing, as the study found, is that while delivering program activities, especially in the community setting, the focus is to involve not only children but also their community and local government. A staff member from Save the Children explained this rule:

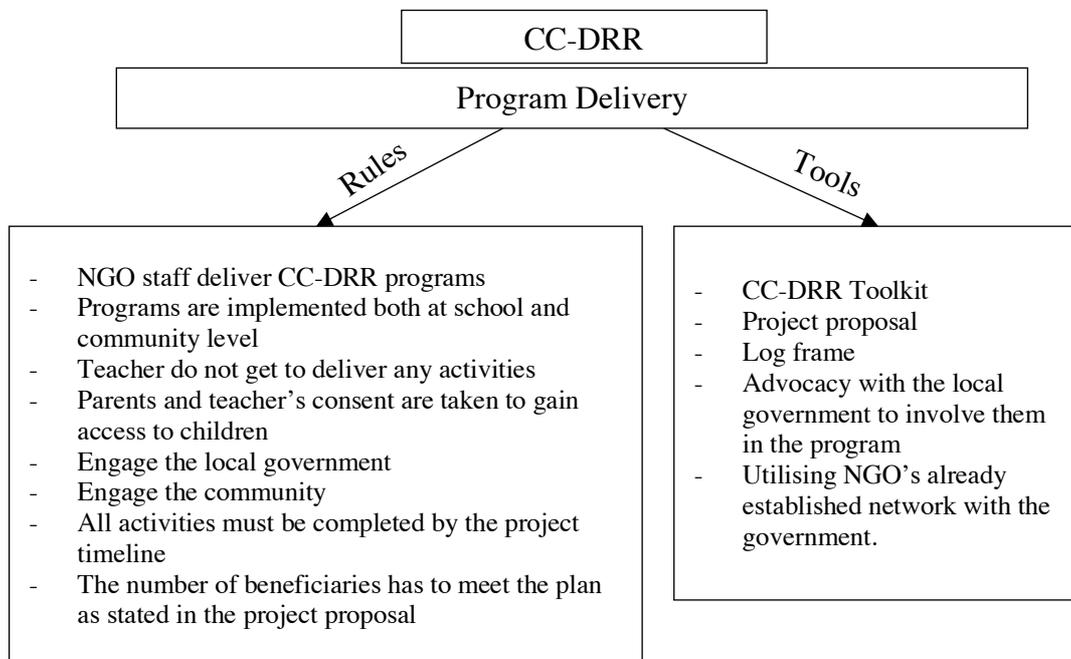
When we are delivering activities in community level, for example, a rally on DRR awareness, we involve the children to come and make a rally with placards and festoons. But at the same time, we invite their parents, local government officers, local elderly personas and teachers from local schools to join the rally and support. In this way it makes a bigger appeal and gets more attention. So, it makes better DRR awareness. Also, involving local government helps in better advocacy. However, Save the Children has been working in Bangladesh for so long. This long-established network helps us to have access to the government departments to involve them in our CC-DRR activities.

The NGO staff try to make their delivery process as enjoyable as possible so that children can learn DRR with fun. Some senior staff who have previous experience with early childhood education project think their experience helps them to build better rapport with children and deliver activities children like.

But, since CC-DRR programs are project-based, the strict timeframe of projects often makes it difficult for project staff to provide quality delivery of CC-DRR activities:

We implement CC-DRR programs only as project-based manner which means we have time constrain. As staff we try our best to deliver it in best quality. But trust me, from my 8-year experience I have noticed that at the beginning of a CC-DRR project, the delivery and implementation quality is better. But as the time passes by and we are near to the finishing of the project, we have to meet the project objectives to the donor. So, we close down everything in a very hasty manner and cannot really afford to think about quality implementation at the end really.

The key tool that supports the staff in delivering lessons is the project proposal. In this case, a logical framework or log frame is their main guideline. They also follow the CC-DRR toolkit (Plan International, 2010) as an implementation guideline.



**Figure 7.19. Rules and tools in delivery of CC-DRR program**

However, some staff think CC-DRR toolkit is now “out-dated”:

We follow our log frame as guidelines, but I will admit it does not describe elaborate methods to delivery, does not have proper pedagogical guideline. So, we utilise our own skills and creativity instead. We also have Plan’s toolkit, but this is back-dated. For example, we do not do HVCA anymore, and also have new activities. So, it is time to develop a new and updated toolkit for CC-DRR for our country.

For School DRR, at present DRR has been integrated through 30 textbooks in the primary and secondary level curriculum: 14 books at primary level and 16 books at secondary level. DRR is also integrated at the intermediate/higher secondary level through five textbooks, including Bengali and English books. Both horizontal and vertical approaches were applied for DRR integration in the textbooks. At Grade IV (nine-year-olds) children are introduced to the term disaster in the Bangladesh and Global Studies textbook. Lessons on disaster start at Grade III with the topic of Earthquake in the Christian Religion and Moral Studies textbook. This subject is only open for Christian children. However, the current textbooks include in total seven hazards for the primary- and secondary-level children:

- a) Cyclones
- b) Drought
- c) Earthquakes
- d) Fire
- e) Floods
- f) Nor-Wester/storms
- g) Salinity Intrusion.

Thus, it has been observed that the DRR learning materials in the current curriculum are heavily hazard-focused. The focus groups reveal that besides the curriculum-covered hazards, children are also concerned about those hazards which they more commonly experience in their lives. Thus, children suggested that the curriculum (and also CC-DRR) should include lightning and thunderstorms, water logging, mosquito infestation, dengue fever, chikungunya, diarrhoea and air-water-sound pollution. Girl children also suggested that *eve teasing* (ইভ টিজিং in Bengali, forms of sexual harassment) and other sexual harassment should also be considered hazards and covered by the curriculum. The study also observed that there are some repetitions of DRR topics and contents across textbooks.

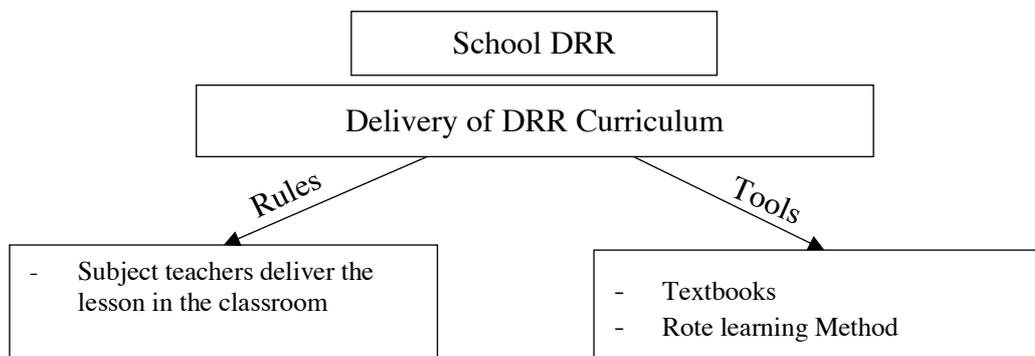
**Table 7.1. Integration of DRR in the school curriculum through Textbooks**

Integration of DRR topics	Subjects/ Textbooks	Grades/Classes
Fire	Bangladesh and Global Studies	IV
Cyclone	Bangladesh and Global Studies	IV, VII and VIII
	Elementary Science	V
	Christian Religion and Moral Studies	V
	Geography and Environment	IX
Flood	Bangladesh and Global Studies	IV, VI and VIII
	Christian Religion and Moral Studies	IV
	Agricultural Studies	VI, VIII and IX-X
Drought	Christian Religion and Moral Studies	IV
	Bangladesh and Global Studies	V and VII
	Agricultural Studies	VI, VIII, IX-X
	Geography and Environment	IX
Earthquake	Christian Religion and Moral Studies	III
	Bangladesh and Global Studies	V, VII, VIII and IX-X
	General Science	VI
	Geography and Environment	IX-X
River Erosion	Bangladesh and Global Studies	VII and VIII
Nor-wester	Elementary Science	V
	Bangladesh and Global Studies	VII
Salinity Intrusion	Agricultural Studies	VIII and IX-X

The study identified that, even the curriculum experts themselves are doubtful about the implication of this integration:

I doubt the functionality of this disoriented DRR curriculum, which is not even a proper curriculum but a tiny portion, to give proper information to children let alone making children resilience and skilful and building a culture of safety.

Thus, the curriculum experts recommend a “comprehensive” DRR curriculum, where DRR is introduced as a separate subject and textbook at the primary and secondary level. They suggest that children will not have to sit for a paper-based exam for evaluation of their knowledge; rather this can be organised through participation and activities. Accordingly, as the DRR expert said, the responsible authority will have to include it properly in the teacher training manual so that teachers can have the skills and feel confident in facilitating DRR lessons for children.



**Figure 7.20. Rules and tools in delivery of School DRR**

Although CC-DRR and School DRR work separately, the study found that their works overlap at one point. Both CC-DRR programs and the school curriculum include classroom-based DRR lessons that typically offer hazard-focused knowledge and promote rote learning. But most

children participating in CC-DRR either have already completed those lessons or are doing them simultaneously in their school curriculum elsewhere. Children call these sessions “lectures.” While some CC-DRR practitioners consider the lecture sessions to have added value for children’s knowledge, most rejected the necessity of such sessions, as stated by a CC-DRR staff member in Dhaka with 10 years’ experience:

I can often realise from looking at the children that they are bored when I am taking a classroom session with them. Because they always have such classroom-based learning in their school. In my opinion, there is no need to include such sessions. We are bound to do that because, our project includes them. (Md. A)

The focus groups also revealed children’s concerns about lectures. Here are some of the statements from children:

We already have enough lectures in our school for every subject. Please don’t keep that lecture thingy in CC-DRR programs. (Ashfia, age 15, Class IX)

You know what, we already have those lessons in our textbooks. We have already learned about them in a very boring manner in our classroom and answered questions in written examination. We do not need them anymore. This is just waste of time. (Rafi, age 16, class X)

Oh my God! Lectures are boring. Boring lectures in school! Even more boring lectures from CC-DRR. No want them please! (Megh, age 13, Class: VIII)

Lecture, lecture, go away! Never come in school's way! (Sabiha, age 12, Class: VII)

Government policy makers and curriculum experts also expressed their discontent about including “lectures” because the NGOs do not consult with them regarding CC-DRR project design and implementation planning.

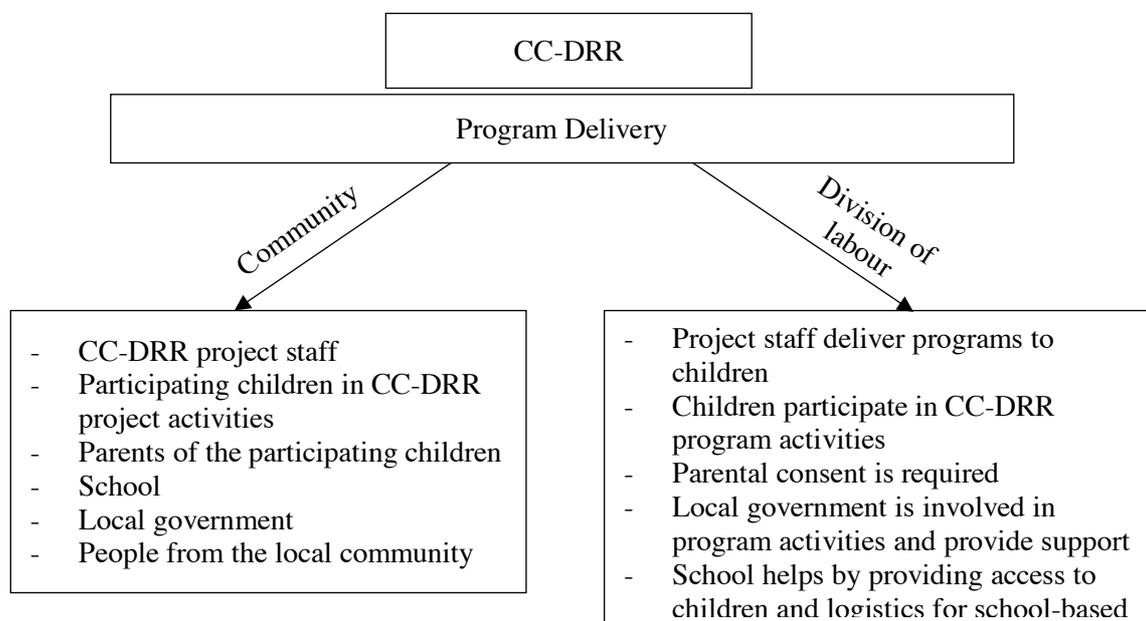
### **7.2.3.3. Community and Division of Labour in Delivery of CC\_DRR and School DRR Programs**

At the delivery phase, CC-DRR program generates quite a large and multisectoral community by involving people from different sectors. This is one of the greatest achievements of CC-DRR program delivery according to the CC-DRR staff. “We deliver the program to children, but in a real sense, it is delivered to the whole community, as we engage them all”, said one of the staff from Community Participation and Development (CPD) who were implementing CC-DRR project in partnership with Save the Children Bangladesh.

In program delivery CC-DRR makes efforts to engage the whole community by involving children. Thus, the community involved here are the staff, children, their parents and teachers. This practice has also been praised by the MoE, NCTB, NAPE and local governments. The curriculum specialists consider that such efforts can be made in school DRR as well by “placing DRR as a separate compulsory subject at school and designing the lesson in a manner that will require the teachers and school to engage people from all parts of the community.” Besides DRR benefits, there are also political benefit of involving adults with children in DRR programs, about which the CC-DRR staff, government officials and curriculum experts had similar thoughts. For example, an Upazila Education Officer explained: “when you include local government people, they know what is going on and this way, later on, DRR and

children’s issues are considered in local government’s planning and budget. Same for local politicians and other organisation.”

Once a CC-DRR project has been designed, the staff at national, regional and local level get the responsibility for delivering the program to children at school and community level. Although various CC-DRR activities are often implemented in the school setting, teachers from that school do not have any role in facilitation. NGO staff facilitate all the activities and deliver the lesson.



**Figure 7.21. Community and division of labour in delivery of CC-DRR program**

CC-DRR practitioners identified that exclusion of teachers in the facilitation was one of the major obstacles against sustainable implementation of CC-DRR programming, many of the CC-DRR practitioners consider that it would be better to include teachers in CC-DRR program implementation, especially with school-based activities. They think that this way even when a

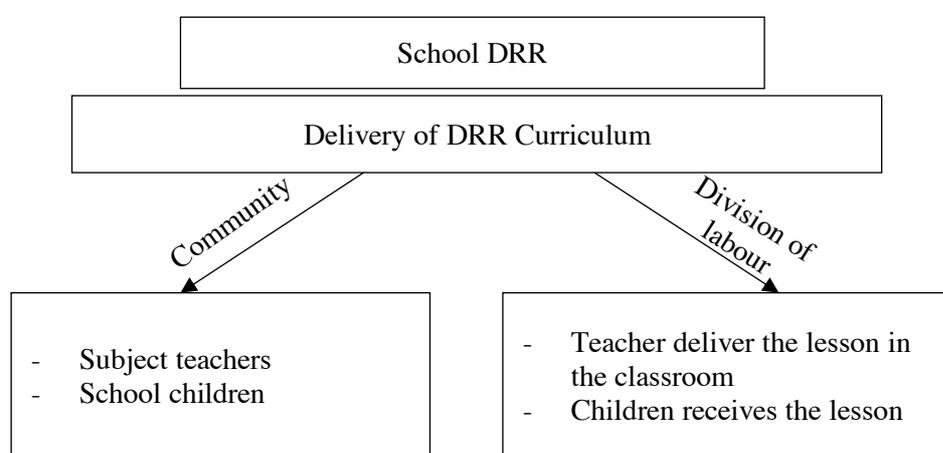
CC-DRR project ends, teachers will take the knowledge and skills in future to teach children DRR. This is how an experienced CC-DRR practitioner in Bangladesh explained it:

It is sad for some reason teachers are not involved in the CC-DRR facilitation. But if they were, maybe with some remuneration, it would make our task easier and bring more positive outcomes to CC-DRR. Because, teachers are education experts. They have already built rapport with children in their school. So, from CC-DRR if we could give them training, they would get better skill in DRR lesson facilitation and take it to future even after the end of our project. Because they will keep spreading the knowledge with other students in their schools in future. This way, our staff would also have less burden and do better job. You know how we tend to simply finish the work hastily to meet the project requirements. (SB, Dhaka)

Thus, bringing teachers into CC-DRR facilitation is expected by CC-DRR practitioners to help in better and sustainable implementation of CC-DRR programming in Bangladesh.

For implementing school DRR, it is the regular teachers who deliver the lesson in the classroom setting with the aid of textbooks. An Education Officer from the Directorate of Primary Education, Bangladesh, stated: “In our typical Bangladeshi classroom we provide only one-way communication where the teachers are givers and the children are learners. Children only receive what teachers give them.” Also, in delivering DRR lessons in school, there is no engagement with parents, the community or local government. The Director of Planning and Development Division at the Department of Disaster Management, Bangladesh, considers that for proper DRR education there is no alternative to engaging the whole community through the school:

Disaster is a social phenomenon. Our kids can read textbooks and memorise information. But to be really resilient, they need to understand the social connection to tackle disaster. All of us in the society have different roles to play. One is not enough without another's part. So, we must bring the whole community working together for making our children disaster resilient. Our school can do better job. My department is happy to collaborate with the Education Ministry and NCTB to work together to make change in our curriculum for DRR education.



**Figure 7.22. Community and division of labour in delivery of School DRR**

#### **7.2.4. Monitoring and Evaluation**

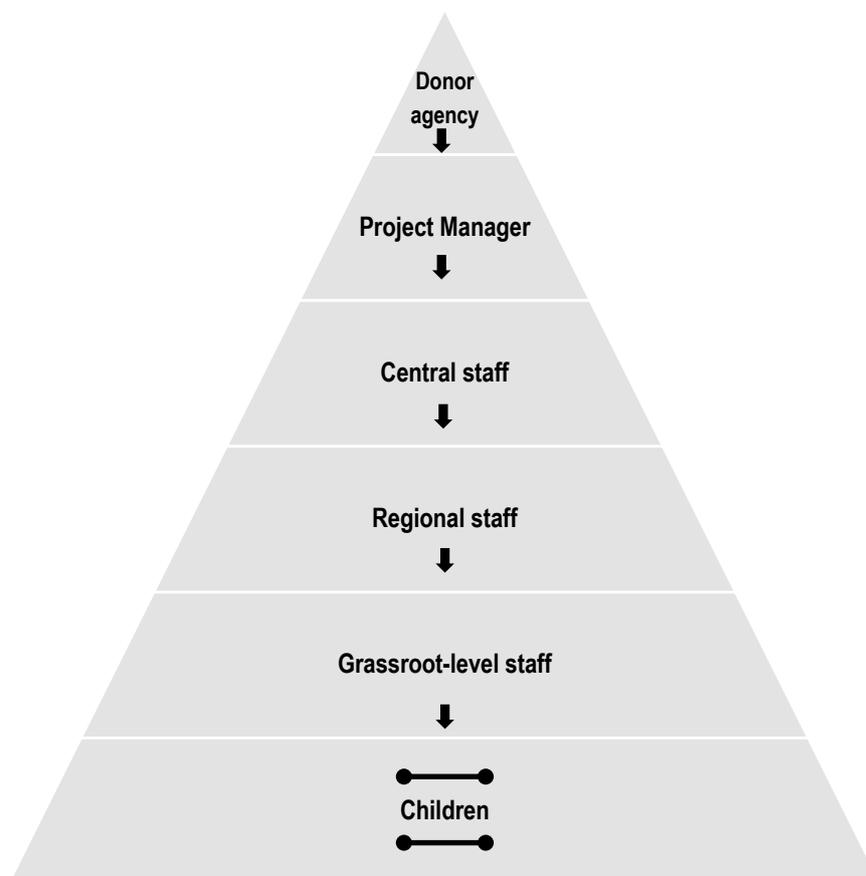
This section presents the findings on monitoring and evaluation of the CC-DRR programs and DRR curriculum. The findings are segmented in three subsections.

##### **7.2.4.1. Subjects and Objects in Monitoring and Evaluation of CC-DRR Program and DRR Curriculum**

Monitoring and evaluation (M&E) occupies a very important role in CC-DRR programs. Here the subjects are the individuals or authorities responsible for monitoring and evaluation, while

the objects are those being monitored and evaluated. All the staff in a CC-DRR program have responsibility for monitoring. However, in the subjects-objects relationship, their roles are interchangeable in a CC-DRR program. Since CC-DRR programs are project-based and funded by donor agencies, it is the donor agencies who have the ultimate role of monitoring and evaluation of the project. Hence only their role as subject is constant. As children are the ultimate “beneficiaries” of the project and outcomes are oriented to them, they are the ultimate objects and their role as object is permanent in the subject-object orientation.

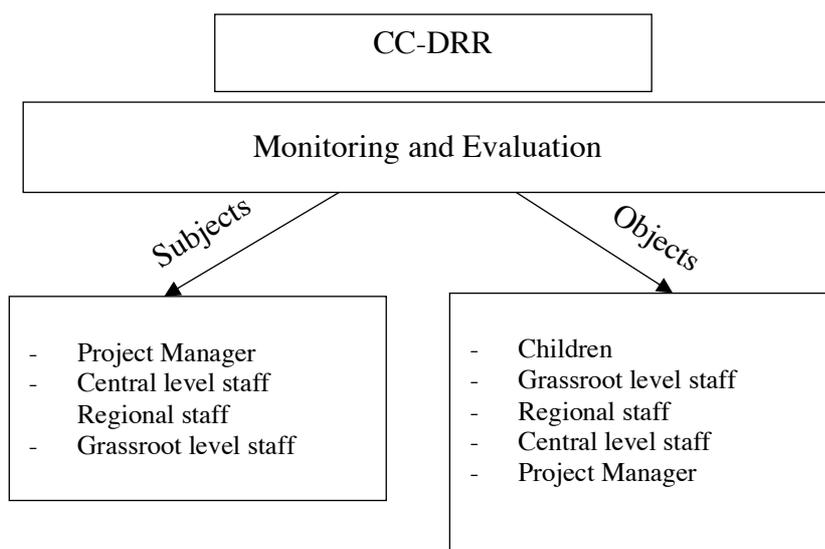
Here is the subject-object hierarchy embedded in CC-DRR program’s monitoring and evaluation system:



**Figure 7.23. Top-down monitoring and evaluation hierarchy of CC-DRR programs**

The hierarchy (Figure 7.23) reflects the top-down accountability system in the CC-DRR programs. Thus, within the CC-DRR monitoring system, any position is accountable to other top positions in the pyramid. Thus, the donors hold the supreme authority and power over everyone else in the hierarchy. Conversely, the children's position is at the bottom, which indicates that they do not have any power or scope of monitoring. Here follows a general outline of subject-object orientation in the CC-DRR monitoring and evaluation system:

- The project manager is the core subject in monitoring of a CC-DRR program because he has the responsibility for monitoring all project activities including the staff and beneficiaries' or children's knowledge and skills outcomes.
- Although objects to the manager, the central staff then act as subjects to monitor the regional and grassroots-level staff and beneficiary children. The regional staff monitor the grassroots-level staff and children, while the grassroots-level staff monitor the children. However, in most cases, there is at least one monitoring staff member who has particular responsibility for monitoring and preparing reports. But all the individuals in the CC-DRR monitoring system are 'subjects' for the children, who are the ultimate objects of the CC-DRR monitoring system.



**Figure 7.24. Subjects and objects in monitoring and evaluation of CC-DRR programs**

In the government sector, although there is no particular focus on the DRR curriculum, a strong, multisectoral monitoring system is in place for general monitoring and evaluation of primary and secondary education. Research revealed that, instead of focusing on the curriculum, it is intensively focused in general on monitoring the school system. However, while the system has the MoE at its top, it places children at the bottom level by empowering them with the right to some monitoring responsibilities in their school setting (A general outline of monitoring activities can be found in the next “Rules and Tools” section). Conversely, although NCTB is the sole responsible body for curriculum development and textbook publication, it has no place in the monitoring system, and this is considered by curriculum experts a large gap in the system. The subjects-objects interrelationship within the current curriculum monitoring and evaluation system is as follows:

### **Independent Subjects**

- i) Ministry of Education
- ii) Ministry of Primary and Mass Education

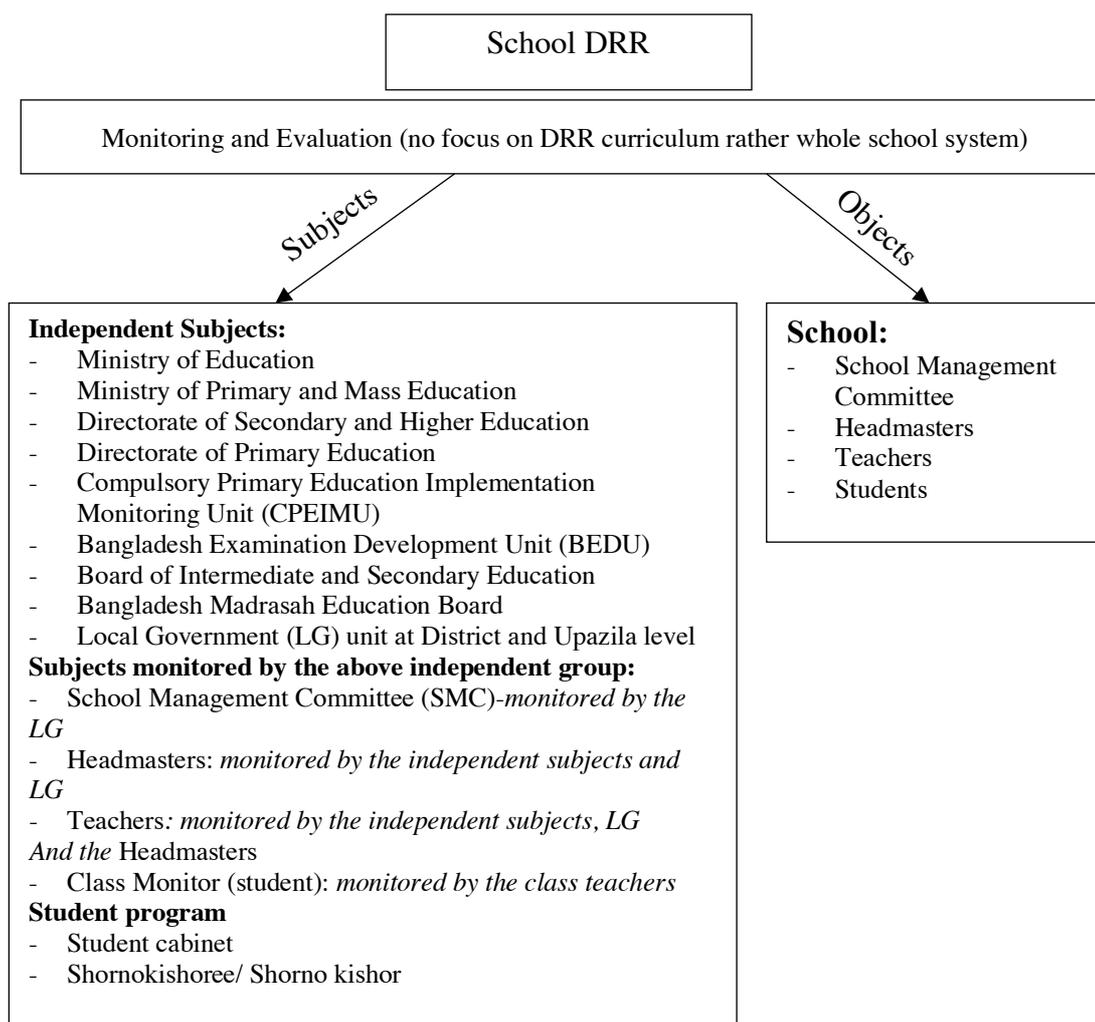
- iii) Directorate of Secondary and Higher Education
- iv) Directorate of Primary Education
- v) Compulsory Primary Education Implementation Monitoring Unit (CPEIMU)
- vi) Bangladesh Examination Development Unit (BEDU)
- vii) Board of Intermediate and Secondary Education
- viii) Bangladesh Madrasah Education
- ix) Local Government Unit at District and *Upazila* level

**Subjects who are also objects**

- i) School Management Committee
- ii) Headmasters
- iii) Teachers
- iv) Class monitor
- v) Student cabinet
- vi) Shornokishoree/ Shorno kishor<sup>6</sup>

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<sup>6</sup> A government-supported large-scale project which is being implemented in all Bengali-medium secondary schools in Bangladesh.



**Figure 7.25. Subjects and objects in monitoring and evaluation of School DRR**

#### **7.2.4.2. Rules and Tools in Monitoring and Evaluation of CC-DRR Program and DRR**

##### **Curriculum**

The monitoring and evaluation system runs under certain rules which are applied through the organisational monitoring tools. This is applicable both in NGO and government sectors.

In the NGO sector, since CC-DRR is not treated as a single program but implemented through different projects, with each project comprised of different sets of activities, the staff find it hard to evaluate CC-DRR as a whole. NGO staff are concerned about this issue:

We prepare monitoring and evaluation for each project. But we never evaluate CC-DRR as a whole or look into what elements from different projects are bringing the best outcomes. Our focus is on project by project.

The study found that CC-DRR-implementing NGOs in Bangladesh do not have a uniform or special monitoring tool for CC-DRR programs. They employ their general organisational monitoring tool which is applied for monitoring all projects in their NGOs. For example, Save the Children Bangladesh uses the “*MEAL*” (*Monitoring, Evaluation, Accountability and Learning*) tool for monitoring all projects in their organisation. However, all the staff consider the project log frame as their set of rules for monitoring both the implementation process and project outcomes. A staff member in Plan International stated:

Log-frame is our set of rules for monitoring. When we look at the log frame and compare the status of our project work, we can evaluate our progress if we are following the implementation process and meeting the expected target and outcomes. But it would be more helpful if there was a proper monitoring and evaluation tool for CC-DRR is different than other projects.

Since CC-DRR programs are donor-funded projects, project reports are another tool for monitoring and evaluation. Some donors require quarterly reports while some require half-yearly. But there is always a project-end report. The staff consider these reports as rules in their monitoring system. Moreover, field-visit reports also help in program monitoring. A project staff member from Save the Children’s CC-DRR implementing partner, Community Participation and Development (CPD), stated:

We have to report to the central staff about our activities and situation. Again, when they visit our activities, they have to report it to the managers. Sometimes the Manager also visits our program activities.

Save the Children Bangladesh and Plan Bangladesh have a “Complaint Box” system in their projects, including CC-DRR. If a “beneficiary” (participating child) or any community member has an objection or complaint against program activities or staff, they can write it on paper and drop it into the box. This tool helps the staff and manager to identify space for improvements. But the study found the Complaint box tool only in these two CC-DRR implementing NGOs in Bangladesh.

All of CC-DRR practitioners find the monitoring system to be more focused on project outcomes than implementation and facilitation processes. A central-level staff member from Save the Children Bangladesh said:

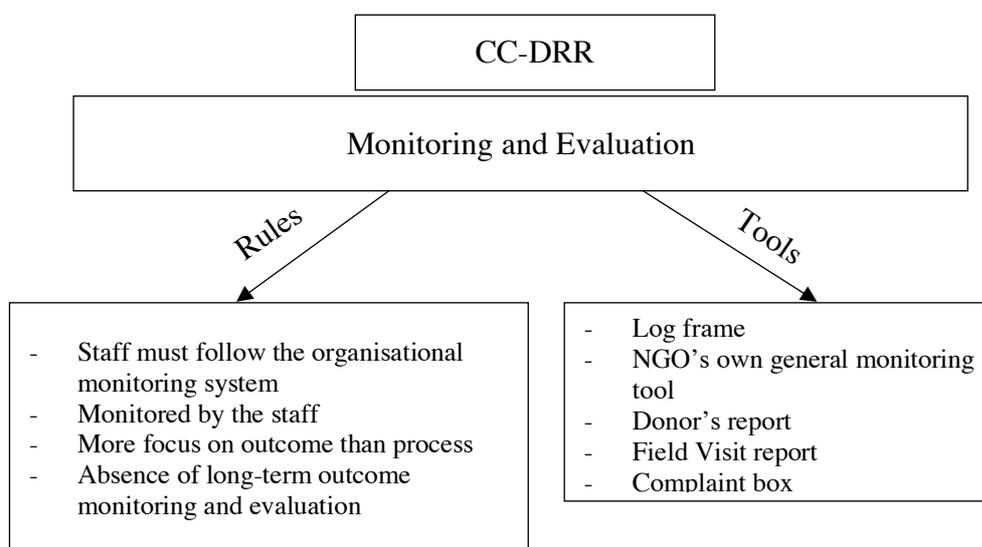
We monitor the project activities and evaluate the outcomes. But frankly speaking, our monitoring tool does not guide us if I or my colleagues are facilitating the activities properly. We have no proper guidelines to monitor our delivery process and pedagogical skills for CC-DRR. I think it is important to have specific monitoring tools for CC-DRR projects to monitor both facilitation and outcomes. Because we implement many CC-DRR projects. It is not a single one.

Since CC-DRR programs are designed as set of elements and activities, the staff also identified the absence of an activity and elements-based monitoring system as a major gap in CC-DRR program monitoring. The Manager of a CC-DRR project at Save the Children stated his concern:

We evaluate the overall impacts or outcomes of the project but not activity-based outcomes, for example, what is the particular outcome from classroom events or rally or tree plantation, etc.

Another significant concern regarding program monitoring raised by the staff is the absence of a long-term outcomes monitoring tool. A CC-DRR staff from Muslim Aid stated:

I have a suggestion to the CC-DRR program designers and also to the donor agencies. Please, include a long-term outcome monitoring tool for every project. Because we deliver CC-DRR program to the children. We evaluate the outcomes during and immediately after the project ends. But we do not know, after finishing up the project how in the long run- after five, 10 and 15 years the knowledge and skills of children contribute to DRR and in their later life. The donor agencies should also consider including fund for long term outcome evaluation. Only this way we can know how CC-DRR is having positive impact in DRR.



**Figure 7.26. Rules and Tools in monitoring and evaluation of CC-DRR programs**

In the government school monitoring system, although there is no particular focus on DRR curriculum, there is a large monitoring body that covers all the primary and secondary schools and Madrasas. This system operates under certain rules, but there is no specific monitoring tool like *MEAL* in this system. This monitoring system is quite strong in its administration. The officers from the education department at the local government, the District and *Upazila* Education Office, and district level office of the Director of Primary Education, regularly visit local schools. However, their focus is on the administrative aspects of school management, since they lack the capacity for pedagogy and curriculum monitoring. Thus, teachers are not monitored by any outside or in-school authority for their pedagogical performance. Teachers are usually responsible for preparing their lesson plans, which helps them to self-monitor their performance to some extent. A district-level Education Officer at the Directorate of Primary Education, Bangladesh explained:

Unfortunately, we do not get to structurally monitor their lesson facilitation in the classroom. But School teachers are supposed to make lesson plan for every lesson they deliver in the classroom. They are trained to do so from the teacher training institutes. With that teachers can plan their teaching and monitor own performance to some extend and can improve. But, in real case, I doubt how many teachers are actually making lesson plan regularly or at all.

An Additional Secretary at MoE also admitted:

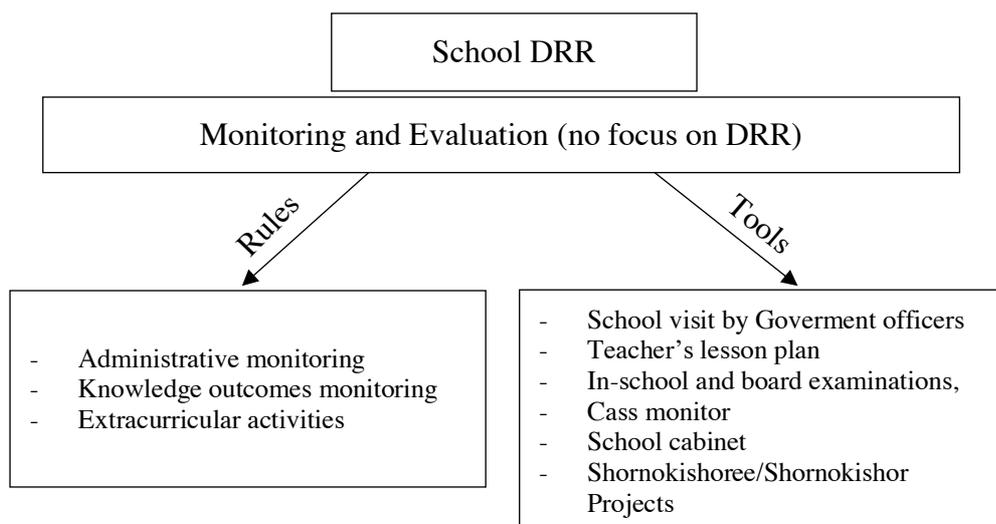
Yes, I agree that there is no particular monitoring system for DRR curriculum as DRR is only a very small part of the current curriculum.

A Joint Secretary at MoE also acknowledged the absence of curriculum monitoring system:

We do not have a curriculum monitoring team. But we have departments in our local government at district and upazila level who regularly visits school. We also have examinations boards for arranging board examinations for secondary schools: JSC (Junior School Certificate) and SSC (Secondary School Certificate) exams, and Directorate of Primary Education to arrange national level Primary School Completion (PSC) exams. Also, children sit for class tests, terminal exams and annual exams at all the year round in their schools and madrasas. This certainly is a monitoring system for evaluating children's knowledge.

The existing practice of "Class Monitor" gives children an opportunity to contribute to the monitoring system. Class Monitor is a voluntary role for students. Each student in the class has the role of Monitor in rotation. They are responsible for monitoring students' attendance and needs for their teachers and the Headmaster. The formation of a Student Cabinet, which is mandatory at primary and secondary schools, also empowers children to talk about their needs and demands. The recent government also supported a large-scale project, "Shornokishoree", which also empowers the children at school by engaging them with extracurricular activities. The Shornokishoree project was established in 2012 by the Shornokishoree Network Foundation to promote comprehensive adolescent development, including health, nutrition, leadership, violence against children and education. They support schools in forming adolescent clubs through child participation.

Thus, the three main rules in Government's school monitoring are administrative monitoring, evaluating knowledge outcomes and extracurricular support. The rules and tools in the monitoring and evaluation system at school DRR are presented in the Figure.



**Figure 7.27. Rules and Tools in monitoring and evaluation of School-DRR**

Thus, it can be noticed that, although NGOs do not have a dedicated tool specifically designed for CC-DRR programs, nevertheless monitoring and evaluation is a large part of such programs. On the other hand, although in the government sector, despite a strong logistical, multisectoral capacity in the system, there is no specific monitoring organism for general curriculum monitoring, let alone the DRR part of the curriculum. While in the government system there is an evaluation system for measuring knowledge outcomes through class tests, and terminal, annual and board examinations, in the NGO sector there is no evaluation tool for measuring the knowledge and skill outcomes in children. Conversely, NGOs have their own monitoring tools in place to understand if the project is being implemented according to plan, whereas in the school curriculum, this tool is lacking except for teachers' self-management instrument-lesson plans. Both sectors are very focused in outcomes, but they still lack monitoring of the implementation process. Hence curriculum experts consider that the NGO CC-DRR programs need to be monitored by the government as well:

They are our children. They are the future of the nation. They are also the transmitter of information. So, it is important to make sure children are not given wrong knowledge

and information by the CC-DRR program, also because it is about disaster it is a sensitive issue and it is important not to scare them. I expect that from government with coordination of MoE, NAPE, DMD and NCTB there will be a team to monitor NGO's CC-DRR program. We need to make sure they are culturally appropriate and age appropriate. NGO Bureau can also consider including this issue.

#### **7.2.4.3. Community and Division of Labour in Monitoring and Evaluation of CC-DRR Program and DRR Curriculum**

The term 'community' here applies to all the stakeholders related to monitoring and evaluation processes of the CC-DRR Program and DRR Curriculum, including the responsible authorities and individuals.

In the CC-DRR program monitoring and evaluation system, the community is formed with the donor agency, comprising the NGO's monitoring department, the project manager, the project monitoring officer, all project staff, beneficiaries/children, their parents and local people. Each member in the community has certain responsibilities. Although every CC-DRR project has its own monitoring system, the respective implementing NGOs oversee if the project is being implemented under organisational values and policies. In the same way, although the donor agency does not have direct responsibility for CC-DRR project monitoring, it indirectly influences the system. This 'indirect influence' is very powerful indeed. Due to the funding obligations, the whole CC-DRR project itself remains accountable to the donor agency. A staff member from a local NGO, Social and Economic Enhancement Program (SEEP), explained it this way:

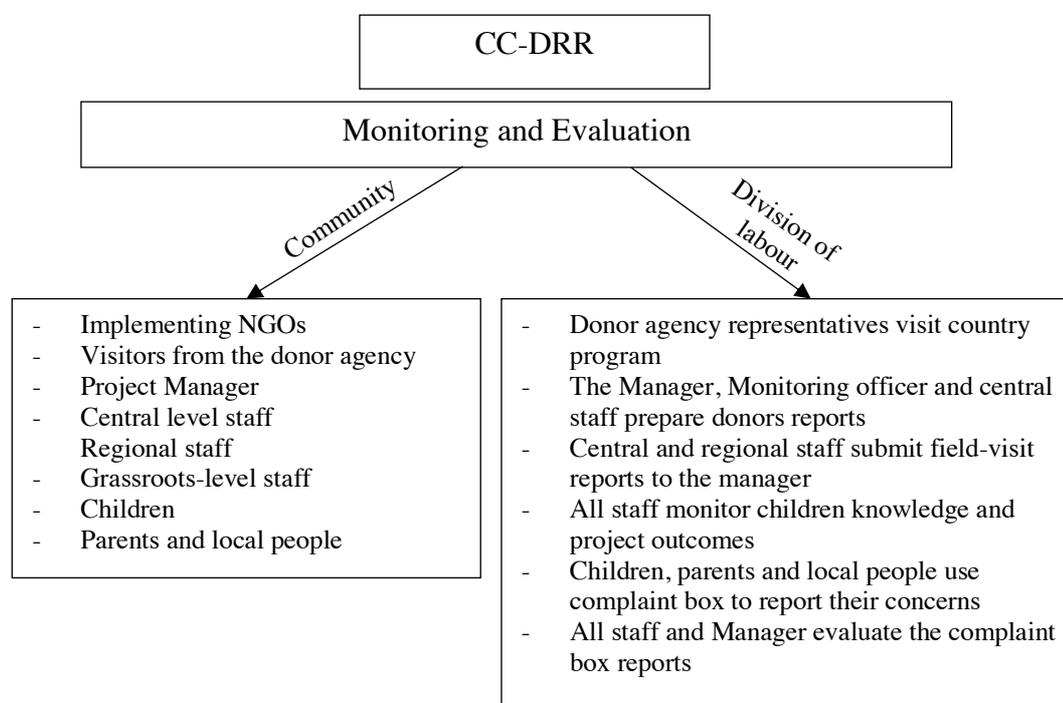
The donor agency does not have responsibility for project monitoring. But they visit our project and meet with the manager and staff few times during the project or at least

once. When the international donor agency people come to visit CC-DRR project in Bangladesh, they often visit project implementing areas both at the central and the grassroots level. For their visit we are always concerned and try to do our work properly. As project staff we kind of feel accountable to them since they provide funding for the project.

Within the CC-DRR monitoring system, the project manager has the highest level of responsibility. He/she is in charge of monitoring whether the project is being implemented according to the plan, the organisational policies and, most importantly, the project proposal and log frame. The project monitoring and evaluation officer has the core responsibility for monitoring, including finance and field-level implementation. In addition, all the central and regional staff have to report to the manager in writing after visiting field-level activities. Thus, their responsibilities also include monitoring the regional and field-level CC-DRR activities, including program facilitation and outcomes. The grassroots-level staff have to monitor local project activities, including children's and local people's involvement. However, for program delivery or facilitation, most staff considered themselves to be self-monitored and self-evaluated for their facilitation skills. This is how a grassroots-level CC-DRR staff member expressed her concern:

Most of us have previous experience in CC-DRR work. We have to monitor ourselves how we deliver lessons or facilitate different elements in the projects. We follow the log frame and judge ourselves if we are doing in the right way. It will be really great if the project would be planned in such a way that, as well as the regular monitoring officer who is more focused on finance, number of beneficiaries and project outcomes, we will have another project officer to monitor and guide facilitation of the staff. This

should include project facilitation monitoring staff at all levels-central, regional and grassroots level.



**Figure 7.28. Community and division of labour in monitoring and evaluation of CC-DRR programs**

Within the current school system, the monitoring and evaluation team is larger than any CC-DRR monitoring team. The study found that, although the NCTB is responsible for developing curriculum, it does not monitor the actual implementation of the curriculum in schools. The interviews with curriculum experts also reveal that the current school monitoring system has “actually no focus in curriculum itself let alone DRR curriculum.” The curriculum experts at NCTB expressed their deep concern about this:

Our responsibility is to develop and revise curriculum, and prepare and distribute textbooks. We do not know what happens to the curriculum after that, we do not know whether teachers are able to facilitate curriculum up to the level. Because we do not

monitor. It's BEDU [Bangladesh Examination Development Unit] who holds the responsibility of curriculum monitoring. However, they only focus on board exams but not the facilitation of classes. Also, it is a matter of great concern that they do not have any curriculum expert in their team. I would strongly recommend for collaboration between BEDU and NCTB, better if possible, to give the curriculum monitoring responsibility to NCTB instead. Otherwise, school curriculum remains unmonitored. However, I must say that the current administrative monitoring system is pretty strong. But unfortunately, in this system there is no focus on curriculum. So, the current administrative monitoring system should be there, but in addition, there must be a curriculum monitoring team. (Dr. C, a curriculum expert at NCTB)

Admitting the lack of knowledge and expertise on curriculum, an Education Officer at the Directorate of Primary Education, whose responsibility includes monitoring primary schools, expressed the same concern: "I monitor primary school education. But I must admit that I have very limited expertise on curricula." While the curriculum experts are considering NCTB to take monitoring responsibilities, they are also aware of the shortage of human resource at NCTB and suggest that Ministry of Education should revise policies on curriculum monitoring and accordingly increase human resources at NCTB. They also suggest that the teacher training institutes take over some responsibilities for curriculum monitoring responsibilities, including DRR curriculum. In the current system the responsible bodies and their responsibilities can be identified in the following table.

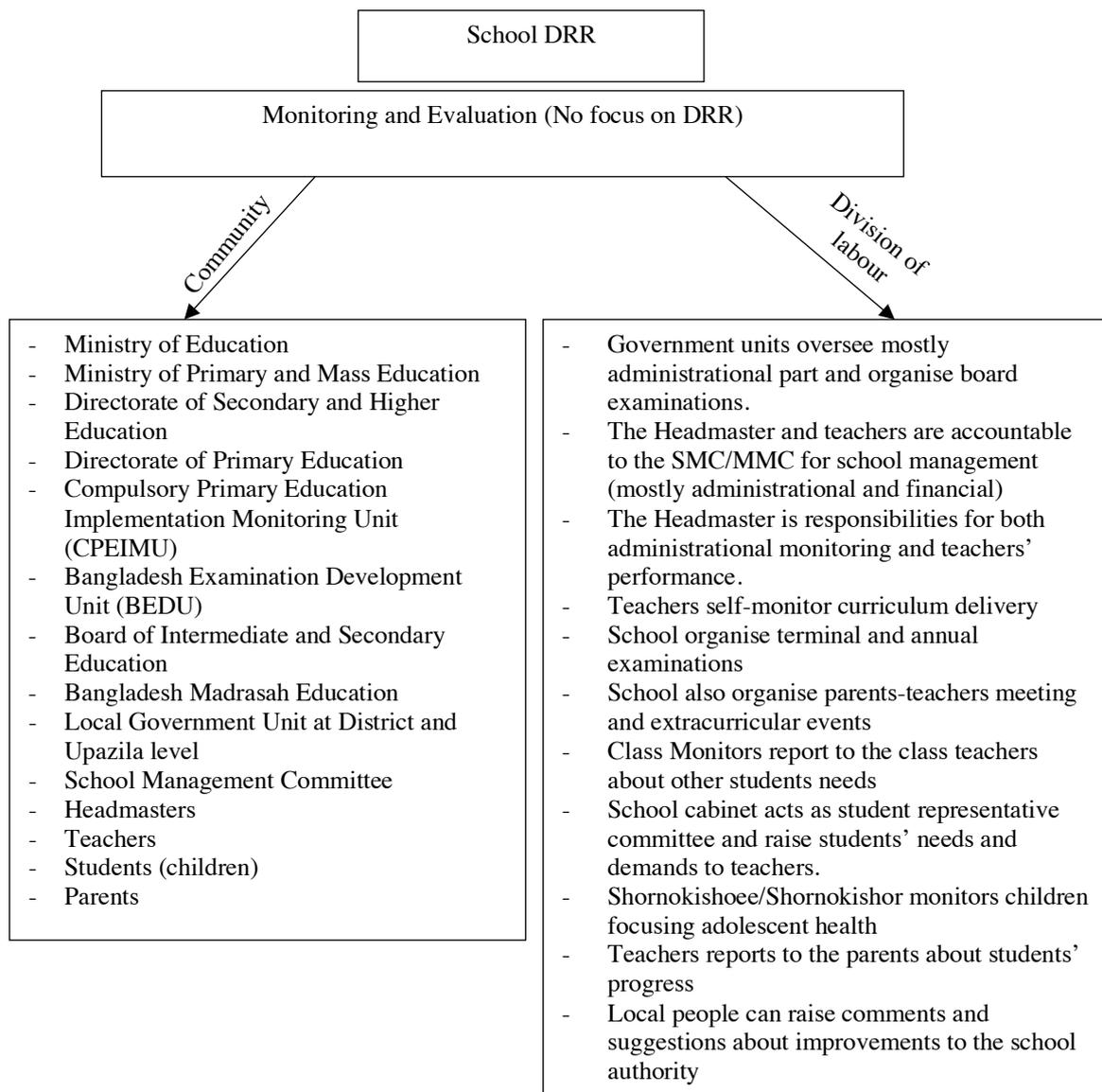
**Table 7.2. Distribution of responsibilities in the School/Madrasa monitoring system**

Categories ↓ →	Administrative monitoring and planning	Process monitoring	Outcomes monitoring	Children's activities and needs monitoring
Outside of school	<ul style="list-style-type: none"> <li>• Ministry of Education (Planning and decision making for the whole system)</li> <li>• Ministry of Primary and Mass Education (responsible for overall planning and administration, and higher-level monitoring for primary level education)</li> <li>• Directorate of Secondary and Higher Education (responsible for overall planning and administration, and higher-level monitoring for secondary level education school)</li> <li>• Directorate of Primary Education (organise Primary school completion examinations and monitor primary schools)</li> <li>• Compulsory Primary Education Implementation Monitoring Unit (CPEIMU): A project of government focused on primary school monitoring</li> <li>• Local Government units district and <i>upazila</i> level are also responsible for school's administrative monitoring</li> </ul>	<ul style="list-style-type: none"> <li>• Local Government units:               <ul style="list-style-type: none"> <li>- District Office: District Education officer;</li> <li>- <i>Upazila</i> Office: <i>Upazila</i> Secondary Education Officer</li> <li>- <i>Upazila</i> Primary Education Officer</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Bangladesh Examination Development Unit (BEDU): monitor how teachers evaluate student's knowledge.</li> <li>• Board of Intermediate and Secondary Education: conducts board examinations for secondary level education</li> <li>• Directorate of Primary Education: conducts board examinations for primary school completion examination</li> <li>• Bangladesh Madrasa Education Board: conducts board examinations for madrasa education at primary and secondary level</li> </ul>	N/A
Within school	<ul style="list-style-type: none"> <li>• The Headmaster looks after school's administration including monitoring of class routine and annual school</li> </ul>	The Headmaster have some responsibilities to monitor's teacher's performance in curriculum delivery	<ul style="list-style-type: none"> <li>• Subject teachers organise class tests</li> <li>• School organize terminal and annual examinations in written form</li> </ul>	The Headmaster and all teachers are responsible to monitor and identify children's needs.

Categories ↓ →	Administrative monitoring and planning	Process monitoring	Outcomes monitoring	Children's activities and needs monitoring
	<p>calendar maintenance.</p> <ul style="list-style-type: none"> <li>• School Management Committee (SMC)/ Madrasa Management Committee (MMC) also oversee the administration. The Headmaster and all the teachers and are accountable to them. They also take complaints from teachers and parents and arrange meetings to resolve disputes.</li> </ul>		<ul style="list-style-type: none"> <li>• Each subject teacher evaluates student's performance</li> </ul>	
Among-students	N/A	N/As	N/A	<ul style="list-style-type: none"> <li>• Class monitor</li> <li>• Student cabinet</li> <li>• Selected Shornokishoree/ Shorno kishor leader from each school</li> </ul>
Parents	N/A	N/A	Schools and Madrasas organise parents-teachers meeting (quarterly/half yearly/annually) to report children's performance	Parents are also invited to annual sports and other extracurricular activities and events where parents can share their suggestions and advice.
Local people	N/A	N/A	N/A	Some schools and Madrasas invite local community members school events to make comments and suggestions for improvements.

The community and their division of labour associated with school DRR (school curriculum)

is presented in the Figure 7.29.



**Figure 7.29. Community and division of labour in monitoring and evaluation of School DRR**

## **7.2.5. Outcomes**

### **7.2.5.1. CC-DRR**

CC-DRR programs have been implemented in Bangladesh by international and local NGOs for about a decade in a project-based approach. One such CC-DRR project typically runs between two to five years. Although such projects include a range of CC-DRR elements, the implementing NGOs do not document the outcomes as CC-DRR program outcomes, but treat

them as project outcomes. Hence the outcome documentation and reports are prepared for each project to submit to international donors. Again, because of the absence of any long-term outcomes monitoring tool, there is also no official record as to how a CC-DRR element can impact in the longer term. Therefore, it was challenging to discover detailed outcomes for each of the CC-DRR elements implemented for the last ten years. However, the study investigated the outcomes through interviews with the CC-DRR practitioners, observation of various CC-DRR programs and, most importantly, through focus groups with children who have participated or are participating in CC-DRR programs. Since the children chapter (Chapter 6) has already documented the outcomes generated from different elements of CC-DRR and school DRR programming, this section does not repeat those here.

The study found that there are 16 elements in CC-DRR programs which are spread over many projects (see section 7.2.1.2). However, all the elements do not lead to an equal number of positive outcomes. The study found that elements such as tree planting, debate, simulation, cultural activities and group discussion, which are liked by children, are capable of bringing better DRR outcomes. Conversely, elements which are unpopular among children are also incapable of leading to better outcomes – lectures are an example.



**Figure 7.30. A nursery made by CC-DRR-participating children through tree planting activity in Narayanganj**

The study also identified that, among most CC-DRR staff, participation is perceived as a matter of numbers. Because of upward accountability to the donors, the CC-DRR-implementing NGOs are obligated to offer the benefit of a project to a certain number of “beneficiaries.” Therefore, to fulfil the project objectives and associated upward accountability, the staff are more focused on reaching the target numbers than on empowering child participation within the implementation process. Overall, although CC-DRRR programming in Bangladesh is bringing many positives outcomes, it is not sustainable due to the project-based implementation approach and associated upward accountability to Western donor agencies.

#### **7.2.5.2. School DRR**

Although school DRR has been implemented since 2011 by integrating DRR into the existing curriculum, to date there is no DRR learning outcomes assessment method in the curriculum. Therefore, there is no official information available regarding children’s DRR learning outcomes. While School DRR entirely focuses on textbooks and rote-based learning, focus groups reveal children’s concerns about such practices:

Can you ride a bicycle by reading instruction in the textbook? No. You actually have to ride the bicycle in real life and practice and become a pro. Then, how can we learn DRR without actually participating in DRR activities? But our school people think we will know all about DRR and save ourselves by reading those texts- essays and poems, whatever in there. (Himel, 15 years, grade IX, Narayanganj, Dhaka).

The curriculum experts at the NCTB also urged revision of the current DRR curriculum to include more participatory and engaging methods for DRR learning.

### **7.3. Conclusion**

This chapter revealed the status of DRR education initiatives for children in Bangladesh. The initiatives include CC-DRR program and integration of DRR into the school curriculum. While CC-DRR programs are being implemented by few international NGOs in partnership with some local NGOs in Bangladesh, curriculum integration is fully governed by the government under its institutions. The chapter has shown how the CC-DRR program and DRR curriculum at primary and secondary level function within the system. From the interviews with NGO practitioners, government officials and curriculum experts the study identified four important stages within the work-flow of CC-DRR program and DRR curriculum: a) Design and Development; b) Training of Staff and Teachers; c) Delivery of lessons; and d) Monitoring and Evaluation.

The chapter then presented the findings for the four phases through the Activity Theory perspectives. It has drawn a comparison between the CC-DRR program and the DRR curriculum, and revealed the gaps and opportunities. However, the key findings that emerged from the analysis show that, while CC-DRR programs involve a broad range of activities for children both in school and community settings, School DRR only contains rote-based learning practice in the classroom setting. Moreover, lack of child participation in the design and development phase for both cases was identified. In the government sector, while NCTB is the sole responsible organisation for curriculum design and development, research found that it plays no role in curriculum monitoring and evaluation. This creates a huge gap because many other segregated departments and organisations are monitoring the school curriculum with little or no coordination among them, and also with little or no expertise in the school curriculum. On the other hand, for CC-DRR program, although there is no specific monitoring and evaluation tool, the NGOs typically apply their general organisational monitoring for

monitoring and evaluation of CC-DRR projects. Yet the project-based approach, short timeframe of projects, exclusion of teachers, and donor dependency operate against the sustainability of CC-DRR programs. How to overcome these gaps, and have a sustainable disaster resilience education program that can lead to better implementation processes and outcomes, is the focus of the next chapter.

## CHAPTER 8

### SYNTHESIS AND DISCUSSION

*Salviati: Now you see how easy it is to understand.*

*Sagredo: So are all truths, once they are discovered.*

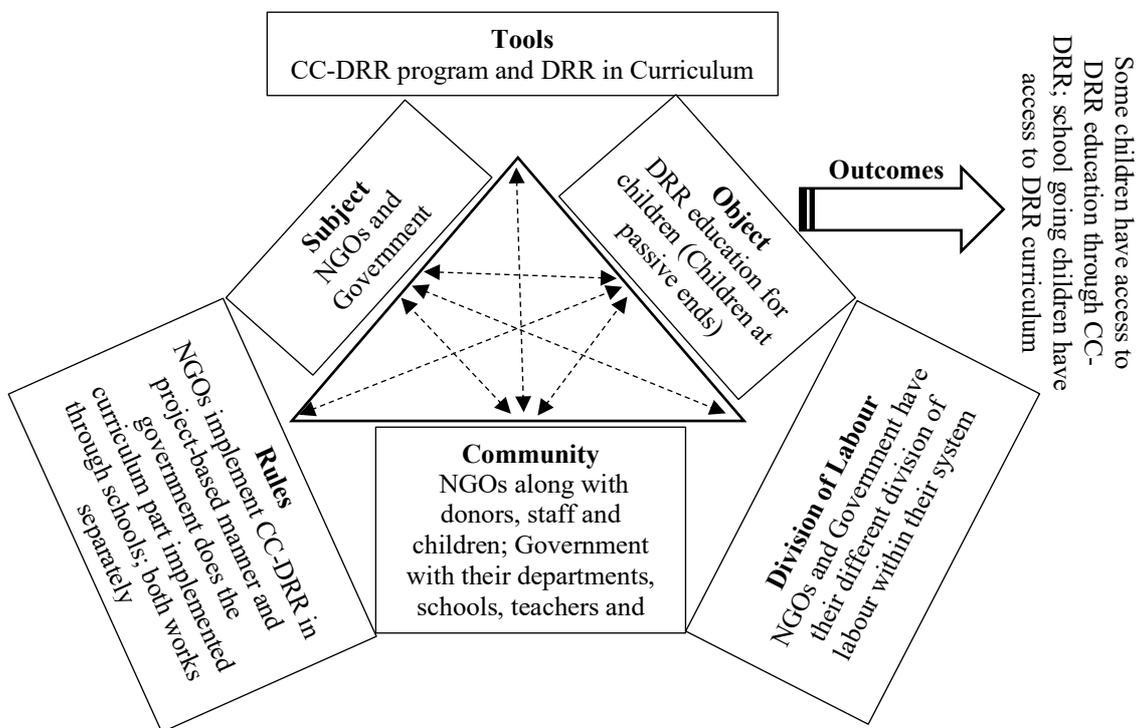
~ Galileo Galilei (1632), Dialogo sopra i due massimi sistemi del mondo- Tolemaico, e Copernicano [Dialogue Concerning the Two Chief World Systems-Ptolemaic and Copernican]

#### 8.1. Introduction

This study sought to explore DRR education for children in Bangladesh within the context of CC-DRR programs and DRR curriculums in schools. The study was conducted using a multi-informant qualitative design strategy involving children as co-researchers. Engeström's Activity Theory framework was used in the communication of findings. Investigating the current DRR education practice through the activity system provided rich insights into organisation dynamics, implementation process and opportunities for modification and improvements of the system. A discussion derived from the major findings is presented in this chapter.

In Bangladesh, DRR education for children is provided through the combined effort of government and NGOs. While government initiatives include integrating DRR into the existing curriculum, NGOs are implementing CC-DRR programs on a project basis. This means that CC-DRR is not a single program but rather implemented as short-term projects, typically between one and five years, with the aid of funding from international donor agencies. This study has explored the implementation process and outcomes of these DRR education

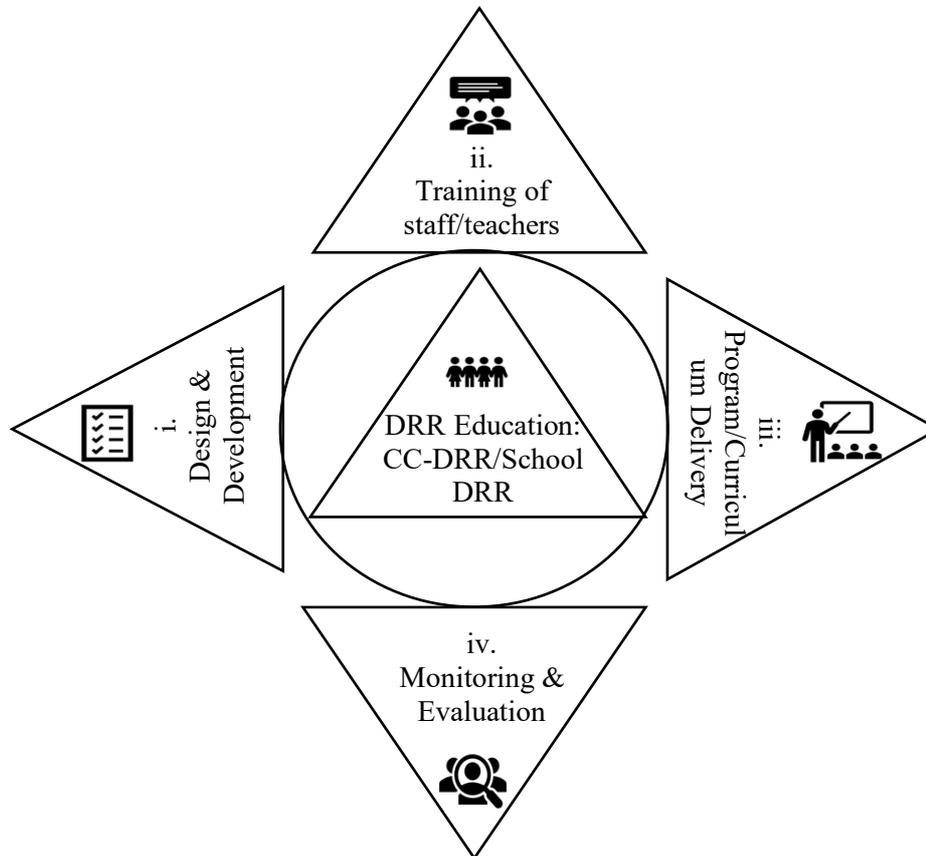
initiatives from the perspective of Activity Theory. Thus, considering DRR education as a general object and objective, the following theoretical model (Figure 8.1.) is applicable. However, the study found that, for providing DRR education to children, the government and NGOs work as separate entities without interfering with each other's activities. Hence a general activity system cannot be applicable for DRR education in Bangladesh. The study identified that each of the organisations works within their distinct and independent activity system for providing DRR education.



**Figure 8.1. Activity framework of DRR Education for children in Bangladesh**  
(Aadapted from Engeström,1987)

The study has explored both the activity system of CC-DRR programming and of DRR curriculum. Although these two systems are completely independent and work separately, they share some common characteristics. Both have the similar “Multi-Voicedness” feature of Engeström’s Activity Theory framework: that is, both have several activity systems (in this case four): i) design and development; ii) training; iii) delivery; and iv) monitoring and

evacuation. These exist within the implementation system of CC-DRR and school DRR curriculum. The dynamics are shown in Figure 8.2.



**Figure 8.2. Four aspects of the implementation process of DRR education for children**

To understand the implementation process of CC-DRR and DRR curriculum, the study has explored each of the four dimensions from an Activity Theory perspective. The study also identified the challenges as well as the scope and opportunities for a sustainable DRR education for children in Bangladesh.

## **8.2. Design and Development of CC-DRR project and DRR Curriculum**

- **CC-DRR: Upward accountability perpetuates top-down design strategy and hinders child participation in CC-DRR programs**

The findings show that CC-DRR programs are heavily dominated by the donor's preferences, especially in the areas of program design, and monitoring and evaluation. Since CC-DRR projects rely completely on the funding from the donor agency, NGOs are obligated to fulfil their requirements. In the development literature, this practice is regarded as "Upward Accountability" (Edwards & Hulme, 1995). Upward accountability is a common practice in NGO culture: NGOs are compelled to meet the requirements from donors and provide them with information about the project in line with their requirements, including project proposals and monitoring reports. (Ebrahim, 2002, 2005; Rubenstein, 2007). The development literature also shows that upward accountability is treated as a prerequisite by the donors and impedes the needs of the "beneficiaries" (Kilby, 2006; Slim, 2002; Schmitz, Raggio & Vijfeijken, 2012). The upward accountability culture imposes strong bureaucratic obligations on CC-DRR program designers. Hence the practice raises strong barriers against child participation in the design and development phase of CC-DRR programs, since the project must be designed according to the donors' investment criteria. CC-DRR practitioners thus consider that, if funding were not a concern and the donor's policy preferred the actual needs of the local "beneficiaries (children), CC-DRR projects could offer better space for child participation at all levels. Because of the implementation process of CC-DRR programming, upward accountability is implemented at the expense of the participation of children.

Conversely, policy literature on NGOs and development agency accountability focuses on practices that can help exercise "downward accountability" by increasing accountabilities to

project “beneficiaries” (Kilby, 2006; Slim, 2002). However, downward accountability also must be aware of power relations. Firstly, the term “beneficiaries” is often perceived to be problematic in itself (Ebrahim, 2002), because using that word labels a “beneficiary” as a passive recipient of aid. This is also evident in the findings of the study, where children being considered as the beneficiaries are placed at the object side of the CC-DRR Activity system. Overall, the term “beneficiaries” goes against the philosophy of “downward accountability” as an equalising measure. In the same way, the word “downward” is also problematic, since “it reinforces the idea of power asymmetry” (Ebrahim, 2002). An expression like “child constituency” could definitely be more applicable for CC-DRR programs, so that there is a need for discussion on terminologies and perceptions as they form and are formed by the accountability debate.

- **School DRR: Policy limitations, overcrowded curriculum, lack of DRR expertise in curriculum developers and hazard-focused learning materials create huge obstacles against school DRR education**

While a few countries have started seeing positive outcomes in integrating DRR into the school curriculum, Bangladesh is still struggling with its integration approach. Pointing to the heavily hazard-focused DRR materials in textbooks, previous studies have questioned the effectiveness of the current DRR curriculum (see Habiba, Abedin & Shaw, 2013, p. 319). In investigating the reason, this study found that, in the current curriculum situation where DRR is not included as a separate subject or textbook, the curriculum developers at NCTB had found it impossible to incorporate DRR learning materials into a single textbook, e.g., into Geography or General or Social Science, because the syllabus is already overloaded. They then decided to integrate DRR into all the textbooks. But in so doing, DRR integration could not retain a structured sequence of learning objectives. Curriculum experts have also expressed concern about their

own lack of DRR knowledge and skills and they are certain that they do need to have such proper knowledge of and skills in the subject matter.

Although DRR literature recommends integrating DRR into textbooks such as Language and Mathematics (e.g., Luna, 2012, p. 758), this study found that in this way the significance of DRR does not reach out to the children nor to the teachers, since the focus is on the core subject of the textbook and DRR is only a “tiny portion”: that is, when a teacher conducts a lesson on a poem or a mathematical problem which has a potential reference to DRR, the focus falls on the literal or linguistic significance of the poem or the mathematical techniques required to solve that particular problem. Hence the DRR contents are overshadowed by the underlying subject matter of the lessons.

Moreover, there is no specific guideline or teacher training module available for teaching DRR in the classroom. NCTB does not have a responsibility to develop teacher training modules. Therefore, although previous studies (e.g., Selby and Kagawa, 2012) have reported horizontal and vertical integration of DRR in the school curriculum in Bangladesh on a broad scale, curriculum experts consider the current status of DRR integration as “scattered”, “tiny portion” and “insufficient for proper learning of DRR.” Similarly, Johnson et al. also identified the crowded curriculum as an obstacle to implementation of DRR education in New Zealand (2014b). As a solution to this, the curriculum experts at NCTB recommend policy change to include DRR as a separate textbook in the curriculum and to build a DRR expertise hub at NCTB. They also recommend increasing DRR expertise in curriculum developers to create positions for DRR teachers in every school and to include DRR in the teacher training module.

- **School DRR: English-medium schools, Madrasas, Vocational Schools and NGO-led non-formal schools are left out**

Findings show that DRR is not integrated in the English-medium school curriculum. However, there is space to include DRR in the English medium school through the compulsory subject of Bangladesh Studies developed by the NCTB, since, according to a policy of the government, the English-medium schools are responsible for teaching this subject to students in all Grades. Therefore, the study recommends integrating DRR through the ‘Bangladesh Studies’ subject in the English-medium curriculum.

There are two streams of Madrasa education in Bangladesh: Alia Madrasa and Qawmi Madrasa (Bhattacharya, 2006). The Alia Madrasa syllabus is developed under government supervision (Anzar, 2003). In addition to Islamic religious studies, students are also taught some compulsory subjects as in conventional Bangla-medium schools, although the textbooks are slightly modified from Bangla-medium schools (Karim, 2018). The compulsory subjects are Bengali (Bangla), English, Social Science, General Science, Mathematics and Agricultural Science/Home Economics (Karim, 2018). In contrast, Qawmi Madrasa is solely focused on developing children’s Islamic religious expertise and the Qawmi curriculum is developed by the Qawmi teachers themselves (Anzar, 2003). However, this study has not critically examined the Alia Madrasa curriculum and textbooks to understand the situation of DRR education. But it can be assumed that, from the textbooks (modified version for the Bangla medium), the children at the Alia Madrasa may have access to the DRR education provided by the curriculum to some extent, while children at Qawmi Madrasa have no access at all to DRR education in their curriculum. After reviewing the Madrasa curriculum, Habiba et al. (2013) also recommended that the Madrasa Education Board should take immediate steps to integrate DRR into the Madrasa curricula.

Another stream of the education system in Bangladesh is Technical or Vocational schools, which start from post-primary up to grade XII. These schools are governed by the Vocational Education Board and have a different curriculum from that of the secondary and higher secondary schools (Habiba, et al., 2013; Hamid & Rahman, 2019). This difference from the mainstream Bengali-medium schools applies except for the compulsory Bengali/English/Religious Study subjects, according to the curriculum experts. However, since the children start vocational school after finishing normal schooling until grade VIII, they do have access to DRR education from the school curriculum up to that point.

Likewise, NGO-led non-formal schools generally operate in the hardest-to-reach geographical and socio-economic settings and are not covered by the national curriculum (Hamid & Rahman, 2019). The non-formal curriculum is designed and implemented by specific NGOs themselves and is not monitored by the government. However, upon completion of non-formal education (generally between two and five years), children are expected re-enter the government's mainstream primary or secondary schools at higher grades (Hamid & Rahman, 2019). Although until now the government has not taken any initiatives to include DRR within the non-formal primary curriculum, NGOs should consider integrating DRR into their curriculum sooner rather than later.

### 8.3. Training of Staff/Teachers

- **CC-DRR: Training covers CC-DRR activities but focuses more on project outcomes *versus* facilitation. Staff urges training on child psychology and stress management**

Communicating DRR knowledge to children requires special skills in adults (Galappatti & Richardson, 2016; Houston; 2012; Oda, 2016; Peek, 2008). Therefore, organisations need to bring a special focus to bear on building skills in DRR professionals and educators who work with children (Höfler, 2014). All CC-DRR staff go through compulsory training at the beginning of a project. This training typically familiarises the staff with the project activities, including the project proposal, the log-frame and organisational policies such as gender policy and child protection policy. However, the findings show that staff are finding the training to be more focused on achieving the outcomes of the project rather than implementation and facilitation. This also results from the upward accountability focus, because a CC-DRR project must be completed within the funded time period and the donors require the outcome to meet a given timeline.

Similarly, building psychological resilience for children and adults is considered an important strategy of DRR (Elangovan & Kasi, 2015; Galappatti & Richardson, 2016; Houston; 2012; Oda, 2016; Peek, 2008). But communicating with children about DRR requires special skills in child psychology (Midtbust, Dyregrov & Djup, 2018; Peek, 2008). Currently, CC-DRR programs do not include activities focusing on psychological resilience or stress management techniques for children and project staff. Also, among the project staff, they do not include positions for experts in child psychology. While acknowledging the importance of having a child psychologist expert in the team and including stress management techniques in CC-DRR,

project staff are often puzzled in responding to the emotional reactions of children. This is because the staff do not receive any special training in child psychology. They also do not necessarily have a previous educational background in psychology or behavioural science. Although children are enthusiastic about participating in CC-DRR programs, research indicates that exposing children to DRR knowledge and activities can cause psychological stress to some children (Midtbust, Dyregrov & Djup, 2018). This may not cause great harm to children, but it can demotivate them from participating in DRR activities (Midtbust, Dyregrov and Djup, 2018). However, this stress can be overcome by involving child-friendly techniques, which requires particular training for the staff (Houston; 2012; Oda, 2016; Peek, 2008). Highlighting the importance of the psychological effect of DRR education on children, Oda stated that DRR educators must give “special attention” to children “who may suffer psychological effects from DRR education” (2016, p. 64). Therefore, CC-DRR staff recommended to have training in CC-DRR which are focused more on facilitation processes than on outcomes, child psychology and the staff’s stress management.

- **School DRR: School teachers receive no training in delivering DRR curriculum**

Although teacher training is considered to be the most critical factor required for the implementation of a school DRR curriculum, this sector still needs considerable attention globally (Ronan et al., 2015). In regard to school teachers’ professional development in Bangladesh, Selby and Kagawa’s study reported that “Current textbook-driven DRR curriculum integration is not paralleled by pedagogical support for teachers” (2012, p. 177). Unfortunately, the situation has not changed much in the past six years and this research also found the same. The findings show that, although the curriculum integrates DRR at primary and secondary level, the teachers do not receive training on how to facilitate a DRR lesson in the classroom. While this is true, within the current system a strong community and structured

division of labour is in place for teacher training. Primary and secondary school teachers receive many types of training, both in-service and pre-service, from government teacher training institutes and through *ad hoc*-based projects. However, no training focuses on DRR. Thus, within the current organisational system in Bangladesh, there is still wide scope for providing DRR-focused pedagogical training to teachers. Although the quality of disaster education greatly depends on a teacher's eagerness, knowledge and skills (Ronan et al., 2015), training for teachers on DRR appears as a major obstacle to implementation of the school DRR curriculum in many countries (Ronan, 2015; Luna, 2012), including Australia (Ronan et al., 2015; Dufty, 2009, 2014), New Zealand (Johnson et al., 2014b), Indonesia (Amri et al., 2016) and Turkey (Petal & Sanduvac, 2012). Although teachers did not participate in this present study, teachers' genuine interest in delivering DRR education to children has been documented in previous studies (Amri et al., 2016; Johnson et al., 2014b; Ronan, 2015; Ronan et al., 2015). While it is undeniable that teacher training is required regarding DRR curriculum implementation, it is strongly recommended that the training (and hence the curriculum) must be focused on participatory learning and engagement with the community, rather than typical "classroom sessions" that lead to rote learning practices (Yanger, 2018).

#### **8.4. Program and Curriculum Delivery in the Classroom and Community Setting**

- **CC-DRR: Short project duration compels staff compromising quality**

The CC-DRR projects are prone to a short "shelf-life" (Ronan et al., 2016, p. 54). Consequently, studies identified this project-based practice as a major barrier against sustainable implementation of CC-DRR internationally, including in Australia and Indonesia (Amri et al., 2016; Johnson et al., 2014a). Generally, CC-DRR projects are funded for a short duration e.g., from one to two years. Replicating the findings of Johnson et al. (2014a) and

Amri et al. (2016), this study also identified a similar deterrent, that is, the project-based approach as opposed to scaled and sustainable implementation of CC-DRR in Bangladesh.

This study also identified that the project-based approach poses great challenges for quality of implementation. That is, the staff are compelled to complete all listed activities and meet the project outcomes within the given period. As a result, the CC-DRR staff are not able to maintain quality in their facilitation towards the end of the project because they are still left with many remaining project outcomes to satisfy the donors. This puts the project staff under considerable pressure, which in consequence compels them to “click the checkbox” instead of pursuing quality implementation. As a result, a significant slide can occur in terms of quality of implementation, especially in facilitation of activities with children, towards the end of a project. Again, it is upward accountability which compels staff to compromise the quality of implementation by prioritising quantity of outcomes. Long-term DRR learning programs (e.g., a sequence of learning for the longer term compared with one-off, short-term events) are supported by research as having better resilience outcomes for children (Ronan & Johnston, 2001; Ronan, Crellin & Johnston, 2010). Therefore, while longer-term programming can help build scaled and sustainable implementation of CC-DRR (Amri et al., 2016; Johnson et al., 2014a; Ronan et al., 2016), it may also help in maintaining better quality through the implementation process and facilitation as well as leading to better outcomes.

Another important finding the study has presented as a barrier to sustainable implementation of CC-DRR is that teachers are not involved in the facilitation. Most CC-DRR practitioners consider that it would be better to include teachers in CC-DRR program facilitation, especially in the case of school-based activities. They think that by this means, even when a CC-DRR project ends, teachers will take the knowledge and skills into the future to teach children DRR.

Thus, while researchers and implementing agencies are looking for ways to support sustainability of CC-DRR (Amri et al., 2016; Johnson et al., 2014a; Ronan et al., 2016), this may help in both reducing the pressure from the staff and at the same time in building teacher skill, which in the long run can contribute to the sustainability of DRR education for children.

- **CC-DRR: Children from Madrasas, English-medium schools, Vocational and Non-formal Primary schools are left out**

There remains a high school dropout rate in Bangladesh. The Bangladesh Bureau of Educational Information and Statistics (BANBEIS) 2018 report shows that 18.6% children drop out before finishing primary school and 37.62% drop out before finishing secondary school (2018c). While school DRR solely focuses on school children through integration of DRR in the curriculum, CC-DRR makes a great contribution in involving out-of-school children by spreading their implementation coverage within the community setting. Conversely, when it comes to implementation in the school setting, CC-DRR only covers Bangla-medium schools. Therefore, children from the other streams of schools (Alia and Qawmi Madrasas, English-medium schools, Vocational/Polytechnique schools and NGO-led non-formal schools) do not have access to CC-DRR programs. Given that school DRR has coverage in Bangla-medium schools, Alia Madrasas and Vocational/Polytechnique schools, children from Qawmi Madrasas, English-medium schools and NGO-led non-formal schools are deprived both of School DRR and CC-DRR. But children from these three categories of schools comprise a huge number of children – 18,929,626, including 1,398,252 children in 13,902 Qawmi Madrasas, 193,274 children in 150 English-medium schools and 17,338,100 children in 134,147 NGO-led primary schools (BANBEIS, 2018c). While the size of this figure may be greater than the size of an entire national education system in many countries, it is very alarming that all of these children are out of the reach of DRR education.

Further, research indicates that children from Qawmi Madrasas and NGO-led primary schools usually belong to very poor families, ethnic minority groups and geographically remote and hardest-to-reach areas (Abdalla, Raisuddin & Hussein, 2004; Asadullah & Chaudhury, 2016; Chowdhury, Nath & Choudhury, 2003; Hamid & Rahman, 2019; Hossain & Zeitlyn, 2010), whereas children from English-medium schools are generally from higher-income families (Mousumi & Kusakabe, 2017a, 2017b). Thus, it is interesting to discover that, in regard to socio-economic background, it is the children from middle-income families who have comparatively better access to DRR education than do children from poor or rich families.

- **CC-DRR: Disability and gender issues need more focus**

Children with a disability are considered one of the groups most vulnerable to disaster (Peek & Stough, 2010; Blaikie, Cannon, Davis & Wisner, 1995; Cannon, 2008; Ronoh, Gaillard & Marlowe, 2015a, 2015b, 2017). They therefore need special support for DRR knowledge and skills to increase their resilience (Peek & Stough, 2010). Research indicates that, by participating in DRR education programs, they can also contribute to DRR in their families and community by utilising their “capacity for self-protection and group action” (Ronoh, Gaillard & Marlowe, 2015a, p. 43), innovation and creativity (Bender, Thompson, McManus, Lantry & Flynn, 2007; James & James, 2004; James & Prout, 1990; Peek, 2008). Yet they are often excluded from DRR initiatives (Ronoh, Gaillard & Marlowe, 2015a). Equally, children and their family members from low-income and/or religious or ethnic minority groups frequently face discrimination in receiving disaster-related support and inclusion in DRR initiatives (Bolin & Bolton, 1986; Hartmann & Boyce, 1979, 1983; Lopez, Hayden, Cologon & Hadley, 2012; Taylor & Peace, 2015). However, this study did not identify such discrimination in CC-DRR programs: indeed, the study found that CC-DRR programs were

making sincere efforts to include children from low socio-economic backgrounds through community-based programming.

Although there is evidence of increasing involvement of children in DRR initiatives over the past decade, the progress in regard to children with disabilities has been much slower than is needed (Ronoh, Gaillard & Marlowe, 2015b, 2017). In Bangladesh, while many school-going and out-of-school children do participate in CC-DRR programs, the findings point to a lack of attention in inclusion of participation of children with a disability. The study identified that the CC-DRR implementing organisations (NGOs) run other projects that are specially focused on children with disabilities, but these are not necessarily related to DRR. For this reason, in CC-DRR they do not place special emphasis on including children with disabilities. However, if there are any children with a disability within the geographical access of the CC-DRR project, they are welcome to participate. Conversely, the research found that, when NGOs design their CC-DRR projects, they do not include any particular activity focusing on children with special needs, and neither do staff receive training in regard to inclusion of special-needs children in programs. In Bangladesh, only 52% of children with a disability (including vision impairment) attend school but most drop out even before entering grade six due to facing social distancing and cultural stigmas (Zulfiqar, Shahinujjaman & Hossain, 2018). Thus, a larger group of children with disabilities remains with complete deprivation of DRR education in Bangladesh, both in school DRR and in CC-DRR). Research shows that such “institutional exclusion” experienced by children with a disability can have a severe impact on their physical and psychological well-being, especially in the aftermath of disasters (Hemingway & Priestly, 2006; Tierney, Petak & Hahn, 1988). Yet if they have the opportunity to participate, which is their right, they can also contribute to DRR in their schools, families and communities (Peek, 2008; Ronoh, Gaillard & Marlowe, 2015a).

Recent studies show that, despite the increasing focus on gender minorities in academic research, including disaster studies, it has not yet been able to make any significant change in DRR policy and practice (Gaillard, Gorman-Murray & Fordham, 2017a). This study also identified that there is a significant difference between participation of boys and girls in CC-DRR which is often overlooked in the implementation process (see Chapter 6, Boys *versus* Girls Issues, for detail). For example, when CC-DRR is implemented in a co-education school, the number of girl participants is significantly lower than that of boys. Conversely, this study also found that, when boys and girls have the opportunity to work together, they do not experience any discrimination but rather work together as friends. There are some particular issues that only the girls experience in their life which they wish that the CC-DDR decision makers would take into consideration and address, such as, because of the social stigma, most parents are very conscious about letting their daughters participate in CC-DRR programs that include other out-of-school activities where they have to work with boys. Previous studies on child-focused development initiatives also identified the same issue (Hayes, 2016). However, much research has not been done on co-education *versus* segregated or single-sex education in Bangladesh. A student project is worth mentioning: it identifies that in Bangladesh 60% of parents prefer single-sex schools for their children (Khan, 2015). In this regard, a UK-based study shows that 90.4 % of the Bangladeshi Muslim immigrant parents support single-sex education and consider it “very important” for their children (Shah & Conchar, 2009). Hence further research is needed to explore parents and children’s preferences about single sex education and co-education, and children’s experience and performance in both types of school settings in Bangladesh.

In addition to boy-girl discrimination, Tacoli et al.: “gender equality is not just about women, but about inequalities that cut across social, economic and cultural systems and norms” (Tacoli, Polack, Nhantumbo & Tenzing, 2014, p. 1). Therefore, the transgender group is also considered a significant issue in the gender debate. However, this study did not find any indication of participation of transgender children in CC-DRR programs, despite a rising number of reports over recent times (Dominey-Howes, Gorman-Murray & McKinnon, 2014; Gaillard, 2011; Gaillard, Sanz & Balgos et al., 2017). Transgender people in Bangladesh are locally known as *Hijra*. Since prior to 2013 *Hijra* were not recognised as ‘third gender’, this means they had to identify either as a man or a woman (Hossain, 2017). Having recognition as the third gender is the only positive thing that has happened to *hijras* in Bangladesh, because as children they deal with a most challenging childhood in their families, the community and, most importantly, in school, due to bullying by classmates and teachers (Khan, Hussain & Parveen, et al., 2009). As a result, almost all *hijra* children drop out school by the age of 12-13 years and are forced to leave their own family and join *hijra* communities, where they have to earn their living by begging, crime, prostitution and living on the street (Khan, Hussain & Parveen, et al., 2009). However, no research thus far has been conducted recounting the disaster vulnerability and experiences of *hijra* children. Leaving aside their vulnerabilities, transgender youth have been displaying meaningful leadership and capacities in confronting disasters and hazards, including *bakla* in the Philippines (Gaillard, 2011) and *waria* in Indonesia (Gaillard et al., 2017b).

Therefore, recognising the *hijra* children, which does not exist anywhere within the current CC-DD practice in Bangladesh, is essential in CC-DRR policies and practice. It requires “dialogue and trust” and an approach which is appropriate to the geophysical and cultural setting (Gaillard & Mercer, 2013; Gaillard et al., 2017b).

- **School DRR: Delivery method is not engaging for children**

Continuous integration of DRR education into school curricula can help children in better understanding and developing DRR skills and knowledge (Gustafson, 2009). But it very much depends on teachers' skills in the lesson delivery and classroom facilitation (Dufty, 2014; Rashid, Ronan & Towers, 2016; Ronan et al., 2016). When participatory methods and engagement activities are recommended for DRR education for children (Dufty, 2014; Johnson et al., 2014a; Rashid, Ronan & Towers, 2016), the study found that in schools in Bangladesh, classrooms are still heavily run by “lectures” – a rote learning method based on textbooks and sitting within the four walls of the classroom. Selby and Kagawa's (2012) case studies on 30 countries, including Bangladesh, also identified this kind of textbook-based rote learning as a common practice (Selby & Kagawa, 2012; Ronan, 2015). As DRR is integrated through different textbooks, the subject teachers cover the integrated DRR topics in textbooks in the same manner they do other topics. But the children find this learning method “boring” and “uninteresting”, yet the same children are very excited to participate in CC-DRR activities such as tree planting, group discussion, debate and cultural events. Curriculum experts expressed their concern that the textbook-based, rote-learning method is not effective for DRR since it does not offer an interactive learning environment and child participation. Previous research has also recognised this approach as essentially ineffective in teaching children DRR knowledge and skills (Johnson et al., 2014a; Rashid, Ronan & Towers, 2016; Ronan, 2015; Ronan & Towers, 2014; Towers, 2015), because under this approach children only get to learn the “what” in relation to DRR (e.g., key DRR behaviours), whereas it is highly recommended that they also must learn the “why” and the “how” in relation to those behaviours (Rashid, Ronan & Towers, 2016; Ronan & Towers, 2014; Towers, 2015). Therefore, the curriculum experts in this study are right in recommending incorporation of DRR into the curriculum not

only as a compulsory subject, but also for it to be integrated through extracurricular activities rather than in typical textbooks that promote ineffective rote learning.

## **8.5. Monitoring and Evaluation**

- **CC-DRR: “Upward Accountability” versus “Participation”**

The findings suggest that until now there has not been a uniform monitoring and evaluation (M&E) tool developed for CC-DRR programs. Instead, each CC-SRR-implementing NGO uses its own organisational monitoring tool to serve that purpose. Moreover, when a leading CC-DRR-implementing NGO such as Save the Children, Plan International enters a partnership with local NGOs in implementing a CC-DRR project, it is the local NGO that monitors its parts of the project by utilising its own monitoring tool. The study also shows that the general organisational monitoring system is more focused on outcomes than on implementation processes, i.e., staff’s facilitation skills, level of child participation, coordination and logistics. Then again, in terms of outcomes, the general monitoring tools help in showing overall outcomes of a project rather than element-specific outcomes even though every CC-DRR project consists of set of several elements. However, the CC-DRR practitioners consider that the main purpose of their monitoring and evaluation is to prepare donor reports. Hence, they do not find much scope to evaluate children’s opinions about the programs. For each CC-DRR project the implementing NGOs are required to prepare a number of evaluation reports for donors. This is a common practice for any project funded by donor agencies including for CC-DRR (Ebrahim, 2016). But previous studies suggest that this sort of reporting burden results in producing huge amounts of data for donors only to meet upward accountability (Ebrahim, 2002, 2005, 2010, 2016).

It is therefore a question how appropriate the general organisational monitoring tool is in serving the purpose of CC-DRR, because, the general monitoring and evaluation systems that have been developed by the NGOS, research indicates, are driven by upward accountability and are designed for “satisfying donor needs for information” and offers “limited value for internal learning and decision making” (Ebrahim, 2010, p. 21). Thus, within monitoring and evaluation of CC-DRR programming, upward accountability is maintained at the expense of participation of children and staff, and of organisational learning and improvement. However, the study observed a genuine eagerness among CC-DRR practitioners to have a dedicated monitoring and evaluation tool particularly designed for CC-DRR programs. In this regard, the disaster resilience education (DRE) program logic model recommended by Towers et al. (Towers, Ronan, Haynes & Noonan, 2016, p. 20) can be replicated in CC-DRR.

- **CC-DRR: Absence of long-term evaluation in CC-DRR**

The study identified that there are no long-term evaluation reports available for CC-DRR in any of the participating NGOs. It also investigated available literature (including ‘grey’ and scientific literature) and was unable to find any long-term outcomes or process evaluation reports for CC-DRR. This is because of the project-based implementation approach. When a CC-DRR project ends, all activities and evaluation end with it (Amri et al., 2016). Therefore, the evaluation report also comes as ad-hoc basis for each CC-DRR project, nevertheless focusing on donor’s requirements fulfilling the upward accountability (Ebrahim, 2010, 2016). The study found that in project design there is no scope of long-term evaluation mainly due to two reasons: i) funding limitation and ii) the project designers never consider the significance of long-term evaluation to include in the project proposal. As a result, even after more than a decade of CC-DRR implementation (Amri et al., 2016; Haynes, Lassa & Towers, 2010a, Haynes, Lim-Mangada, Akhmady & Roquino, 2010b; Lopez, Hayden, Cologon & Hadley,

2012; Plan International, 2010; Plan UK, 2010) it remains unknown how different activities and elements in CC-DRR contribute in building resilience in children and the community in the long run. However, the CC-DRR practitioners feel the necessity of participatory long-term outcome measurement tools and suggest that donors should include long-term evaluation reports as project requirements and allocate funding for that purpose. Towers et al.'s DRE program logic model (Towers et al., 2016, p. 20) can guide the NGOs to design CC-DRR program in such a way that it comes with a built-in monitoring and evaluation system which serves both for process and outcomes monitoring in the short, intermediate and long term.

- **School DRR: No curriculum-focus monitoring, no assessment of DRR learning**

Monitoring and evaluation are considered very important components of curriculum implementation (Archer & Brown, 2013; Bhengu & Mkhize, 2013; Bush, 2013; Du Plessis, 2013; Mojkowski, 2000; Rogan & Grayson, 2003; Spillane, Halverson & Diamond, 2001; Van Joolingen, 1998). But the literature and evidence often show significant disparities between the version of the curriculum written by the curriculum developers and the one that essentially is being implemented by school teachers (Mojkowski, 2000). Curriculum monitoring helps in identifying the implementation gap and shows the areas of improvement both for learners and teachers and at the same time builds culture of accountability (Mngomezulu, 2015). This, however, requires “continuous monitoring of the process and outcomes” (de Feiter, Vonk & Van den Akker, 1995). Therefore, both the teachers’ and the students’ activities need to be monitored and evaluated in a systematic manner (Van Joolingen, 1999). The current practice in Bangladesh is in substantial contrast to this ideal expectation. The findings from the study affirm that, although there is a strong and multi-functional workforce in place for school monitoring, unfortunately all their monitoring efforts are limited to within the administrative aspects of a school’s business rather than the curriculum. In regard to curriculum monitoring,

the study could not identify any particular body, including at local or national level, that is, at Upazila and District level within local government's effort, and the Directorate of Primary Education and Ministry of Education at the central level. Looking into the reason behind this situation, NCTB, the responsible body for curriculum design and development, blames the coordination gap between NCTB and the school monitoring authority. Curriculum experts from the NCTB think that staff at the other departments responsible for school monitoring and inspection do not have proper knowledge and understanding of the school curriculum. Although school headmasters and teachers have responsibility for curriculum monitoring to some extent, curriculum research strongly recommends that in-class curriculum monitoring should be conducted by curriculum and subject specialists (Mojkowski, 2000). Hence headmasters and teachers need training in curriculum monitoring. NCTB therefore recommended transferring the curriculum monitoring responsibility to itself, and also building a DRR hub at the NCTB.

Similarly, students' learning assessment (by teachers and the schooling system) is one of the most crucial aspects of quality education and curriculum implementation (Hunkins & Ornstein, 2016; Stabback, 2016). Unfortunately, the study has not found any evidence of children's learning assessment of DRR education in Bangladesh. A 2012 study reported the similar findings (Selby & Kagawa, 2012). This indicates a stagnant situation. However, the study investigated the cause of this and identified the reason. Under the current curriculum system in Bangladesh, children sit for subject-based written examinations as the ultimate component of their learning assessment. Since DRR is integrated into different subject textbooks, and children's knowledge and competencies are evaluated through written examination on each subject, there is no specific way to measure the outcomes particularly on DRR knowledge and skill. The examination score in each subject indicates assessment of children's knowledge in

that overall subject. Hence the marks students obtain in each subject are an indicator of overall knowledge outcomes on the particular subject and it becomes impossible to extract a DRR learning assessment from that. Studies from other countries, including Australia, point out that learning assessment is considered to have the least focus from DRR program and curriculum developers (Towers et al., 2016) and is the “least developed aspect of DRR curriculum innovation” (Selby & Kagwa 2012; UNESCO/UNICEF, 2014). DRR education experts therefore suggest developing and incorporating a comprehensive form of assessment in the curriculum for measuring children’s DRR learning (Towers et al., 2016).

## **8.6. Outcomes**

### **8.6.1. CC-DRR**

CC-DRR has been implemented for more than a decade in many countries, including Bangladesh (Haynes et al., 2010; Wisner, 2006). Preliminary research and anecdotal evidence suggest that CC-DRR programs in Bangladesh are having positive outcomes (Benson & Bugge, 2008; Martin, 2010; UNICEF, 2011). Yet, while CC-DRR project reports are showing positive outcomes, the reports are often prepared by third-party evaluators who do not have local socio-cultural knowledge and this raises a serious question about the genuineness of the outcomes (Johnson et al., 2014a). Moreover, outcomes evaluation by outsiders also poses barrier against child participation. Participation research shows that participation works better when the evaluation is carried by the evaluators who have insider knowledge of the program and socio-cultural setting (Cummings, 1997).

Sustainability of NGO-driven DRR education programs is a common debate in DRR research (Amri et al., 2016; Johnson et al., 2014a; Ronan et al., 2016). An Indonesia-based study on

CC-DRR identified that project-based implementation practice was the major obstacle to sustainability of CC-DRR (Amri et al., 2016). Similarly, the findings from this study indicate that a project-based implementation approach stands against the sustainability of CC-DRR in Bangladesh. The findings also show that, while currently CC-DRR does not include teachers in the facilitation process, doing so can help generate better outcomes in terms of sustainable implementation.

In the case of determining the outcomes of CC-DRR, the findings also suggest positive effects on children and community. However, given that CC-DRR programs have a range of activities, no studies thus far have indicated which positive outcomes are generated from which specific CC-DRR element (Ronan et al., 2016). Therefore, while looking at the outcomes, this study aimed to explore element specific outcomes of CC-DRR. According to McAllister (1999), when a program has been implemented for long period of time it becomes difficult “to measure and to attribute” outcomes from a specific activity of the program if they have not been documented from the beginning. This study has experienced the same difficulty.

In addition, the CC-DRR implementing NGOs treat each CC-DRR program as a one-off project. Hence the outcomes generated from each project are considered as that project’s outcomes. Therefore, there is no documentation or record available for element-specific outcomes. However, despite the difficulties, the focus group with CC-DRR participating children and interviews with CC-DRR staff helped in identifying the outcomes generated from different element of CC-DRR on a broad scale. The study listed a range of outcomes generated from different elements (see Chapter 6). The research also identified that all the listed elements of CC-DRR programs are not equally welcomed by children nor are they responsible for generating equal positive outcomes. One example is lecture-classroom-based knowledge

building sessions with children. Although the study found that children do not like lectures and tend not to concentrate during the lecture sessions, the lecture remains one of the most common elements of any CC-DRR project implemented by NGOs in Bangladesh. However, as no studies, including CC-DRR evaluation reports, have thus far investigated element-specific outcomes of CC-DRR programs (Ronan et al., 2016), this issue has remained overlooked.

Besides the fog and doubt caused by focusing on “project outcomes” rather than CC-DRR outcomes, within the current practice of CC-DRR findings indicate that participation of children is still conceived as an outcome not as a part of implementation. Misconception of participation was a common issue among all the CC-DRR staff, that is, the “number of children participating” in CC-DRR activities *versus* participation defined in Article 12 of the United Nations Convention on the Rights of the Child (UNCRC), which asserts that children must have their say and be involved in decision making (United Nations, 1989). To all the CC-DRR staff, participation means the number of children covered by a CC-DRR project and not empowerment in decision making. A similar finding was also documented in studies in child-focused development programs (Hayes, 2016) and gender and disaster (Gaillard et al., 2017b). However, participation and accountability critics assert that such misconception of participation and tokenistic participation practices result from upward accountability to the donors, that is, the Western funding agencies (Brett, 2003; Cornwall, Lucas & Pasteur, 2000). Hence Cummings (1997) advocated that the value of participation should be included in the program objectives in a way so that it advocates for participation itself within the implementation process and at the same time denotes the improvements and outcomes resulting from that participation. Therefore, it is suggested that CC-DRR program should include the value of child participation in the objectives of program and it is to be achieved both through the implementation process and program outcomes. Thus, while upward accountability often

pushes toward adopting a “planner-centred”<sup>7</sup> approach in designing CC-DRR programs, to achieve better outcomes a “people-centred”<sup>8</sup> approach is highly recommended (Michener, 1998).

### **8.6.2. School DRR**

The current education system in Bangladesh does not have any mode of assessment for DRR education. It was not therefore possible to trace the learning outcomes of the DRR curriculum in children (Selby & Kagwa, 2012). Hence assessment methods should be included in the DRR curriculum without delay. However, the focus group with children helped the study understand children’s experience with the DRR curriculum: a textbook-driven DRR curriculum, coupled with teacher-centred frontal style (lecture-based) learning, is unattractive and monotonous to children and is ineffective in contributing any positive learning outcomes to children but rather has a negative impact on their eagerness to learn DRR through school curriculum. Yet this practice is against the National Education Policy of Bangladesh, which clearly speaks for a joyful interactive learning environment:

... teaching methods will be joyful, attractive and learner-friendly      an interactive learning method will be pursued to develop the creative faculties and skills of children and help them to do exercises through individual or group-work. (Bangladesh Ministry of Education, 2010, p. 14)

Previous research on school DRR education also reported heavy rote-based learning practices and absence of skill building activities, which is potentially ineffective in generating positive

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<sup>7</sup> Where participation is promoted for achieving the aims of the program.

<sup>8</sup> Promotes participation to build capacity and empower local people to identify their own needs.

knowledge and skills outcomes for children (Kagawa & Selby, 2014). Therefore, a holistic revision is required for the school DRR curriculum so that it can foster an interactive learning environment and bring about better DRR outcomes with knowledge and skill for children. Habiba et al. (2013) recommend that the DRR curriculum revision process should include learning and best practices from other Asian and Western countries, including India, Bangkok, Australia and the UK. But, in doing so, it is very important to consider the social, cultural and geographical issues (Haynes et al., 2010a).

## **8.7. Conclusion**

The most important findings are concisely summarized in this chapter by bringing together the voice of the child researchers and the adult researcher. The discussion is logically ordered to show themes in the findings according to the Activity Theory framework. It also included a brief discussion on outcomes of DRR education programs. The results are discussed and interpreted in relation to the literature and theory and the significance of the results is emphasised. The chapter points to the challenges as well as the scope and opportunities for a sustainable DRR education for children in Bangladesh.

CC-DRR has positive outcomes in increasing DRR knowledge and skills among children, including those belonging to low income and ethnic minority groups. However, there is a lack of focus on children with disability and transgender groups. CC-DRR also excludes children from Madrasas, English-medium schools and vocational schools. It lacks sustainable implementation strategies, such as engaging school teachers in program facilitation. Within CC-DRR, upward accountability plays a ‘villainous role’ against child participation and sustainable implementation by creating bureaucratic obligation towards top-down design strategy and project-based implementation. School DRR is heavily dependent on classroom-

based rote learning. Textbook contents are very hazard-focused. Although government has had school DRR initiatives for about a decade, no information is available on children's DRR learning outcomes, because there is no monitoring system for school DRR. Teachers do not receive training on the DRR curriculum. Improvement is thus needed in these areas.

## CHAPTER 9

### CONCLUSION

*Lastly, she pictured to herself how this same little sister of hers would, in the after-time, be herself a grown woman; and how she would keep, through all her riper years, the simple and loving heart of her childhood: and how she would gather about her other little children, and make their eyes bright and eager with many a strange tale, perhaps even with the dream of Wonderland of long ago: and how she would feel with all their simple sorrows, and find a pleasure in all their simple joys, remembering her own child-life, and the happy summer days.*

~ Lewis Carroll (1865), Alice in Wonderland

#### 9.1. Overview

This chapter begins with a statement outlining where the research presented in this thesis sits in relation to the research objectives. The implications and opportunities for utilisation of the research are indicated. Suggestions for further research are made. The limitations of the research are acknowledged. In recommendation, this chapter provides a teacher-facilitated, child-centred, disaster resilience education program which has been developed and proposed by the child co-researchers. The whole of section 9.2.2 has been written and prepared by the child co-researchers. The children researchers wrote mostly in Bengali with random use of English phrases. However, Bengali language has been translated in English by the PhD researcher, ensuring, as in other passages such as Chapter 6, the simplicity and originality remains intact. Since the child researchers preferred the program to remain in a table format, for the genuineness of their effort this thesis also presents the program in table format, along with the associated decoration including text colours and graphics by the children.

## **9.2. Reviewing the Research Objectives**

This thesis began by acknowledging the significant impact of disaster on children and, at the same time, also recognising their enormous capacity in DRR. During disasters many children suffer: they lose their homes, their families, even their lives and they experience psychological trauma (Nikku, 2012; Peek, 2008; Rashid, Ronan & Towers, 2016). Disasters also leave children vulnerable to many other dangers, including disease, malnutrition, violence and exploitation. But research shows that children are not mere passive ‘victims’ of disaster. By utilising their knowledge and experience, children can make great contribution in DRR (Peek 2008; Mudavanhu, 2016). Preliminary research and anecdotal evidence show that participating in disaster-related education, particularly CC-DRR-focused programs, can help children enhance their capacity and become more resilient: benefits include reduced anxiety and fear, increased knowledge and skills, and better preparedness at both individual and household levels (Kagawa & Selby, 2014; Ronan & Johnston, 2001; Ronan, Alisic, Towers, Johnson et al., 2015; Ronan, Haynes, Towers et al., 2016; Selby & Kagawa, 2012).

A growing literature suggests that effective implementation of CC-DRR programs will not only increase children’s resilience but also will spread the benefits to their communities. However, this will require accommodating children’s views and knowledge through their genuine and empowered participation at all levels. The importance of incorporating students’ knowledge and ideas in education has long been recognised by scholars of education, psychology, social development, and more recently in disaster research (Bloom, 1956; Harkema & Schout, 2008; Schunk, 1995; Towers, 2012; Woods, Sylvester & Martin, 2010). Traditionally, however, children have long been ignored in DRR research, and in consequence, little consideration has been given to including children’s perspectives, let alone their genuine participation. Over the

last decade, a growing number of studies has been conducted on CC-DRR programs and these indicate positive outcomes. But they lack child participation. Yet understanding outcomes from children's perspectives is important, and for this, children need to be included in research as genuine participants so that they can share their knowledge, ideas and viewpoints. Moreover, while identifying efficacy, those studies only identified positive outcomes from a general perspective, although CC-DRR programs include a range of different elements or activities (Ronan, Haynes, Towers et al., 2016). Most recent studies also have identified serious issues regarding delivery and sustainable implementation of such programs (Amri, Bird, Ronan & Towers, 2016).

Clearly, research that explores and promotes opportunities for child participation is vital in this domain. Therefore, the overarching goal of this thesis was to develop a rigorously designed study on DRR education for children by creating the best opportunities for their genuine and empowered participation. It has had the objectives of developing an increased understanding of current DRR education programs (CC-DRR and School DRR programs) in regard to: i) the structures, components and process; ii) element-specific outcomes; iii) levels of child participation, including those marginalised e.g., according to gender diversity, disabilities, and working children; iv) institutional mechanisms and processes for sustainable implementation; and v) ways for developing a sustainable DRR education program for children that can foster better child participation and bring about better DRR outcomes in children and communities. With the theoretical underpinnings and overall design of this research, i.e., a child-friendly qualitative methodology grounded on the social constructionist philosophy (Berger & Luckman, 1966; Schwandt, 1994), these five Research Objectives (ROs) and five emerging Research Questions (RQs) provided the boundary conditions for this thesis. Figure 9.2 illustrates the interplay between the ROs and RQs within the thesis.

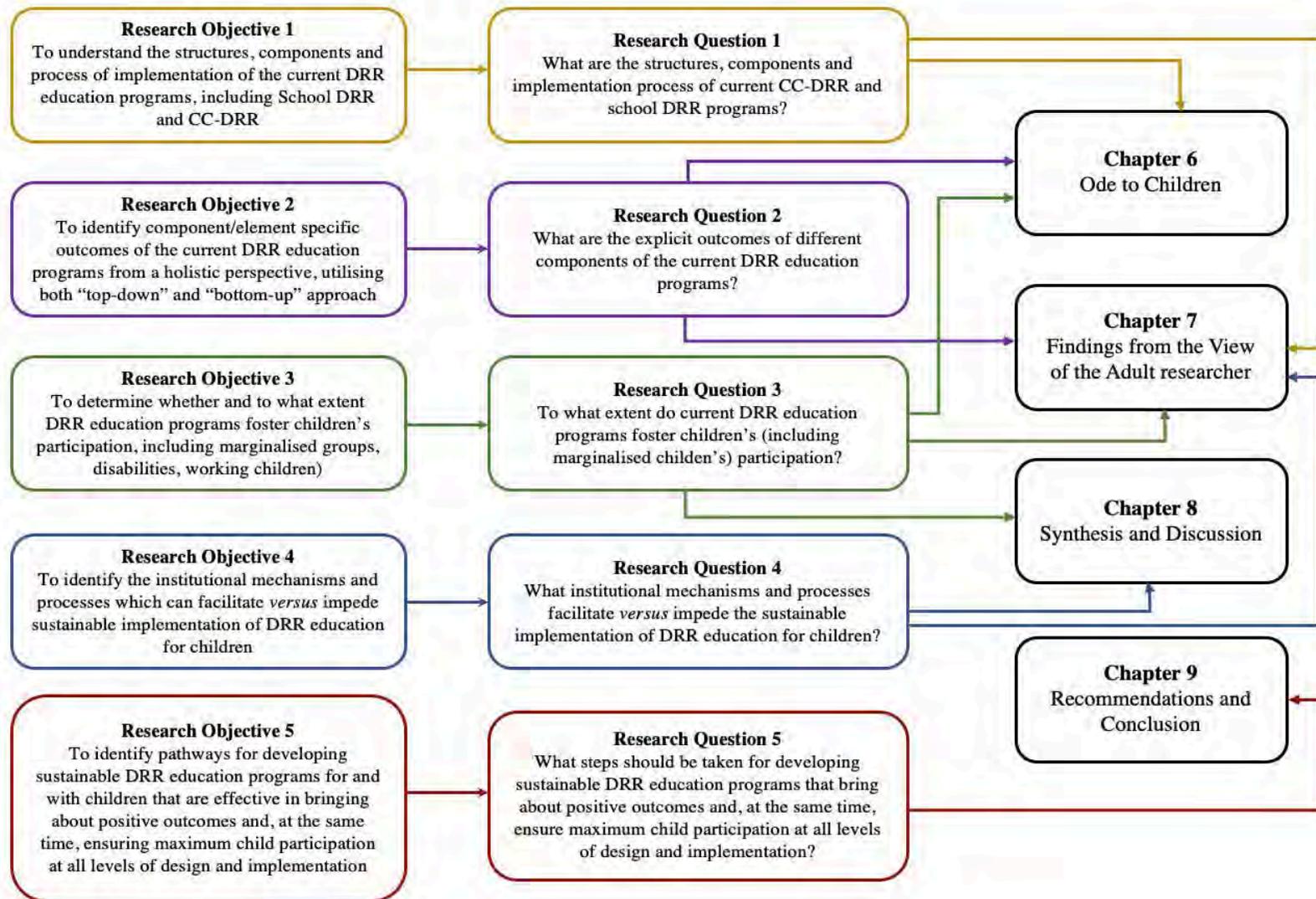


Figure 9.1. Synchronization of the Research Objectives and Questions with Communication of Findings

The literature was critically evaluated to identify a rigorous ground upon which a study of children's knowledge, perspectives and empowered participation could be founded. Hence the study was grounded on social constructionist philosophy (Berger & Luckman, 1966; Latour & Woolgar, 1979; Derry, 1999; McMahon, 1997) and underpinned by a relative-interpretive-constructivist approach (Burrell and Morgan, 1979; Gergen, 1985; Neimeyer, 1993). Founded on this philosophical principle, this study sought to explore how the individuals from a particular background have constructed reality and it looks into their informed perceptions, views, opinions and experiences. Therefore, the research findings reflect the collective perceptions of the research participants. This research also aligns itself with the central tenets of the newly growing concept in childhood research- known as "the New Sociology of Childhood" (James & Prout, 1990). The New Sociology of Childhood attempts to give a voice to children and lays emphasis on providing children with the opportunity to express their own meanings, in their own words, about the issues that concern them. It also challenges the dominance of quantitative methods and experimental techniques that have clearly been restricting the extent of children's genuine participation in which they can express their own voice.

As a final point, after careful review of the literature on perspectives into how children are treated in research, this study adopted a 'child as the participant and co-researcher' approach that promotes incorporating children as active participants in the research process (Alderson, 2000; Thomas and O'Kane, 1998). This approach is in line with the UN Convention on the Rights of the Child (CRC), especially those sections emphasizing children's participation rights in decision making. The CRC underlines that all activities (including research) that affect children's lives have to build on seeing children as fellow human beings and as active citizens.

It promotes the idea that children be involved, informed, consulted and heard. Therefore, to ensure active participation of children, this thesis made the effort to bring children on board as co-researchers in the research process. Accordingly, this thesis focused on using qualitative methodology, consisting of an array of child-friendly methods for creating an environment that could empower children as co-researchers. The methods were designed to create a relaxed, fun atmosphere where children were encouraged to play a critical role in shaping the research process, direction and design.

By adopting the philosophical assumptions outlined above, and employing a child-friendly qualitative methodology, the thesis has accomplished the overarching aim of developing a rigorously designed study by creating the best opportunities for genuine and empowered participation of children. Each of the objectives has been fulfilled.

First, by interpreting the findings through the Activity Theory framework, the thesis has met the first research objective of understanding the structures, components and process of implementation of the current DRR education programs, including CC-DRR and School DRR. The thesis has provided a detailed insight into how CC-DRR and School DRR programs function through different stages and areas of implementation. The study identified that NGOs and government work within their separate and independent activity systems for providing DRR education for children in, respectively, CC-DRR, and the DRR curriculum in schools. Hence, a general activity system cannot be applicable for DRR education in Bangladesh. The study also identified that, within the implementation process, each of the entities has four distinct areas that are similar to one another: design and development of programs and curriculum; training of staff and teachers; delivery and facilitation; and monitoring and evaluation. The findings in each of these four areas have provided clear understanding of the

structures, components and process of implementation of the current DRR education programs for children in Bangladesh. The findings show that CC-DRR programs are implemented as short-term projects by the few international NGOs operating in Bangladesh (e.g., Save the Children, Plan International, World Vision and Muslim Aid) in partnership with local NGOs. However, CC-DRR is not a standalone program, but rather scattered over many projects containing a range of different activities that are delivered by project staff. School DRR education, however, is solely based on a curriculum that contains textbook-based lessons integrated through different subject textbooks, including language, literature, mathematics and sciences, and are delivered in the classroom by the general subject teachers mostly in a rote-based learning manner.

The thesis has also accomplished the second objective of identifying element-specific outcomes of CC-DRR programs from a holistic perspective, using bottom-up and top-down approaches. Until now, research has only reported positive outcomes of CC-DRR programs from a general perspective, although such programs consist of a range of activities or elements. But, unlike the previous studies, findings from this research showed how each of the elements in CC-DRR programs generates different outcomes for children and their communities. The thesis incorporated the perspectives of the children as well as program implementers and decision makers. Chapter 6: Ode to Children illustrates the detailed findings regarding element-specific outcomes as identified by the children researchers. This explains both DRR outcomes – bringing positive results and implementation outcomes – and how the particular elements and facilitation style are perceived by the children and CC-DRR staff. It also shows segregated views on element-specific outcomes as informed by the different groups: girls, boys and CC-DRR staff. In the findings it is also evident how different groups perceive outcomes in different ways.

The study identified that some of the elements, e.g., making gardens and tree planting, group discussion, extracurricular activities, simulation and drills, are liked by the children, and are also able to generate better DRR outcomes. On the other hand, a few of the elements are not as effective nor do children enjoy them. According to all child participants, ‘lectures’ (classroom-based DRR learning sessions) were entirely monotonous and repetitive, although both CC-DRR and school DRR have this element and often teach the same information. Disagreeing, CC-DRR staff considered that lecture-based information sessions were important for building children’s knowledge on DRR. Therefore, these clear contradictory views indicate that children have much less opportunity to express their likes and dislikes to decision makers. Once again this signifies the importance of child participation in design, development and overall implementation of DRR education programs for children in bringing about better outcomes.

The third objective was to determine the extent of child participation, including children who are marginalised, in DRR education programs. The findings indicate that participation of children is still perceived as a matter of numbers and certainly not as a part of the implementation process as defined in Article 12 of the United Nations Convention on the Rights of the Child (UNCRC), which asserts that children must have their say and be involved in the decision-making process (United Nations, 1989). The bureaucratic process of curriculum development and rote-learning practice in the school curriculum leaves no space for children to have their voice heard within school DRR programs, and upward accountability practice causes strong barriers against child participation in CC-DRR programs, because it is dominated by the donors’ investment criteria.

The study also found that both CC-DRR and school DRR programs are heavily focused on Bengali-medium schools, tending to ignore the children of English-medium schools, Madrasas, NGO-led non-formal primary schools and Vocation/Polytechnique schools. However, while school DRR solely focuses on school children through integration of DRR in the curriculum, CC-DRR has a great contribution in involving out of school children by spreading their implementation coverage within the community setting. But in both cases the study identified a lack of attention to inclusion of children with special needs. A particularly important finding to emerge from the research was that in coeducation schools the number of girl participants in CC-DRR programs was significantly lower than boys. In addition to boys-girls discrimination, the transgender group is also considered a significant issue in the gender debate according to development, social science and disaster researchers (Dominey-Howes, Gorman-Murray & McKinnon, 2014; Gaillard, Sanz, & Balgos et al., 2017). This study did not find any indication of transgender children's participation in DRR education programs.

The thesis also addressed the fourth objective of identifying the institutional mechanisms and processes that can facilitate rather than impede sustainable implementation of DRR education for children. Analysing the findings of the research from the Activity Theory perspectives has provided rigorous insights into the challenges as well as the scope and opportunities for a sustainable DRR education for children in Bangladesh. The findings showed that inclusion of schools, households, people from the communities, local government, NGO, national curriculum, education and disaster management departments, and their participation and cooperation are integral to the implementation of sustainable DRR education for children.

While sustainability of NGO-driven DRR education programs is a common debate in DRR research, the findings from this study indicate that lack of funding, a project-based

implementation approach and associated upward accountability are the major barriers to scaled and sustainable implementation of CC-DRR. The findings also indicate that, although within the current practice of CC-DRR implementation teachers are not included in the facilitation process, if they were this has a high potential for sustainability of such programs. Another key concern to emerge from the interpretation of the findings is that, due to the short duration of CC-DRR projects, the staff are compelled to complete all activities within a given period, which causes significance shortfall in implementation quality towards the end of the project. Therefore, while longer-term programming can build scaled and sustainable implementation of CC-DRR, it can also help in maintaining better quality through the implementation process.

With respect to school DRR, the study identified that integrating DRR topics through a range of textbooks in an already overcrowded school curriculum is incapable of achieving sustainable implementation and outcomes. The findings show that this was so when a “tiny portion” of DRR contents is integrated into individual exercises so that the DRR references are overshadowed by the focus subject matter of the lessons. Within the current policy and administrative mechanisms, there is also no dedicated position for DRR teachers, neither is any DRR training provided for teachers. Therefore, a more focused DRR curriculum and relevant training for teachers are prerequisites to sustainable implementation of DRR education through schools.

The fifth objective was to outline ways for developing a DRR education program for children that is sustainable, capable of bringing positive outcomes and fostering maximum child participation at all levels. In accomplishing this objective, the thesis has carefully addressed the three underlying issues here: a) sustainable implementation; b) positive outcomes; and c) child participation. The study has combined the current findings with theories and presented

the “Teacher-Facilitated Child-Centred Disaster Resilience Education” (TF-CC-DRE) model, as developed by the children researchers.

To ensure sustainability, TF-CC-DRE has incorporated learning from the findings regarding Objective 4 – those that accelerate rather than hinder sustainable implementation. To confirm the best outcomes from each of the activities in TF-CC-DRE, the child researchers have carefully crafted the elements responsible for generating the best DRR and implementation outcomes, as found in Objective 2. The program also promotes child participation at all levels by giving them a voice from design through to implementation. That is, TF-CC-DRE itself is developed by the children by incorporating children’s ideas, and by creating scope and opportunities for children to participate in decision making in the implementation process.

The thesis recommends that TF-CC-DRE be implemented as a compulsory program in schools so that teachers, children and parents can all perceive the importance of DRR learning. However, at the same time, it is important to make sure that this program is treated as a set of extra-curricular activities, and certainly not as a compulsory subject or textbook, since the findings show that both children and teachers are overwhelmed with the already overcrowded curriculum, and in particular, children are exhausted by doing homework and examinations.

### **9.3. Implications of the Research**

This study has made an extensive contribution to the theoretical understanding of DRR education for children by exploring the associated challenges and achievements. While the thesis has broadened the theoretical conception of child participation in CC-DRR and school DRR education, it is the first of its kind to investigate the challenges and achievements in DRR education in four fundamental areas: a) design and development; b) training; c) delivery and

facilitation; and d) monitoring and evaluation. The dearth of literature on the obstacles and opportunities for child participation in DRR education programs makes this research unique. In consequence, it contributes to understanding the organisational practices and underlying sociocultural issues and governmental policies for implementing an approach that supports rather than hinders better DRR education for children in Bangladesh and other low socioeconomic contexts. Thus, the thesis also constitutes a major contribution to the international literature on DRR and on children's role in DRR.

As the first of its kind, the study provides an evidence-base for improvements of policy and practice regarding DRR education for children. It will assist in the development and implementation of CC-DRR-focused, participatory education programs. The findings and, specifically, the children-recommended, Teacher-Facilitated, Child-Centred Disaster Resilience Education (TF-CC DRE) program can be used as guiding principles in the design and implementation of a nationwide DRR education program in Bangladesh.

This thesis is the first in DRR education research to employ the Activity Theory framework which elicited a realistic picture of the current practice of DRR education programs for children. This thesis is also the first of its kind to bring children on board as co-researchers in DRR education research. It will therefore also contribute in design of child participatory research methods. Finally, and uniquely, this thesis not only involves children as co-researchers, it also includes a complete chapter written by the children researchers in conveying the findings. Thus, it stands as evidence of genuine participation of children in research by involving them in the research in a full capacity. Therefore, while it will provide guidance in developing child-participatory research frameworks, it will also encourage future researchers to empower children as co-researchers and ensure their genuine participation in research.

#### **9.4. Challenges, Limitations and Suggestions for Future Research**

While the thesis has made an extensive contribution in DRR research and child participation, the researcher had to overcome a series of challenges. The greatest was involving children as active participants and co-researchers. In an academic environment, prior to the field-level research, very strong ethical requirements must be met that make such academic research ethically justified. Involving children in any phase of an academic study puts an ethics application in the higher risk category, which in return make the ethics clearance process even more complex and time-consuming. On top of that, if the field-level research is conducted in another country in a different socio-economic context, the ethics clearance process can be at its toughest. Thus, for involving children as co-researchers in field-level research in Bangladesh and having their voice integrated in an academic thesis, this study had to undergo a long, complex ethical clearance process which required time, tenacity and submission of a series of documents to the Central Queensland University Human Research Ethics Committee, including policies in Bangladesh and proof of support agreements from NGOs, schools and local government authorities.

Conducting the field-level research with children on board as co-researchers was also quite challenging. This required the adult researcher to take the utmost care not to create a power imbalance which could demolish the original idea of empowered and genuine child participation. Involving children as co-researchers also needs a comparatively longer time at field level, since it requires the adult researcher to spend substantial time with children to build rapport and achieve their trust. It required time flexibility to accommodate preferences and schedules of a large group of children. Therefore, it certainly needed proper funding allocation.

Both of these issues are extremely challenging for any academic research. However, the researcher successfully overcame these challenges with strategic planning and local support. The funding challenges were overcome with support from the local community and school. While the local school provided all sorts of stationery and logistics for the researcher-children's get-togethers, people from the local community showed their support with kindness, including accommodation, food and transportation. Anticipating the need for longer field-level research, in the initial planning the thesis allocated more time to that and to data analysis while making the writing period shorter within the PhD timeframe.

The final challenge appeared when the PhD researcher decided to include the voice of the child researchers in their own words in the thesis. Historically, the voices of children have been always unheard in the arena of an academic thesis, since they do not have the opportunity to write down their own words in a thesis which is stereotypically considered a 'grown-up thing.' In fact, within the current structure of universities and academia at large, principles of participatory research are often relinquished due to the strict rules concerning academic theses and publications that require research candidates and academic researchers to write by themselves. But here, adhering to such traditional rules would restrain the child co-researchers from their right of research communication, and thus remain unrecognised of their research contribution. However, with the strong support and encouragement of the supervisory panel, the PhD researcher finally took a bold and ground-breaking step to include an entire chapter written by the child co-researchers.

There are, however, some limitations which must be acknowledged. Firstly, the children participating in the research were predominantly school children, and therefore the perspectives of out-of-school children are underrepresented. Although participation of boys and girls was

equally significant, there was no participation of children with disability or transgender children groups. Given the crucial role that gender plays in DRR and more generally in disasters, it will be important that future research addresses this limitation by examining their experiences through their empowered participation. Future research can also further examine how children's experiences and knowledge differs across genders and socio-economic conditions.

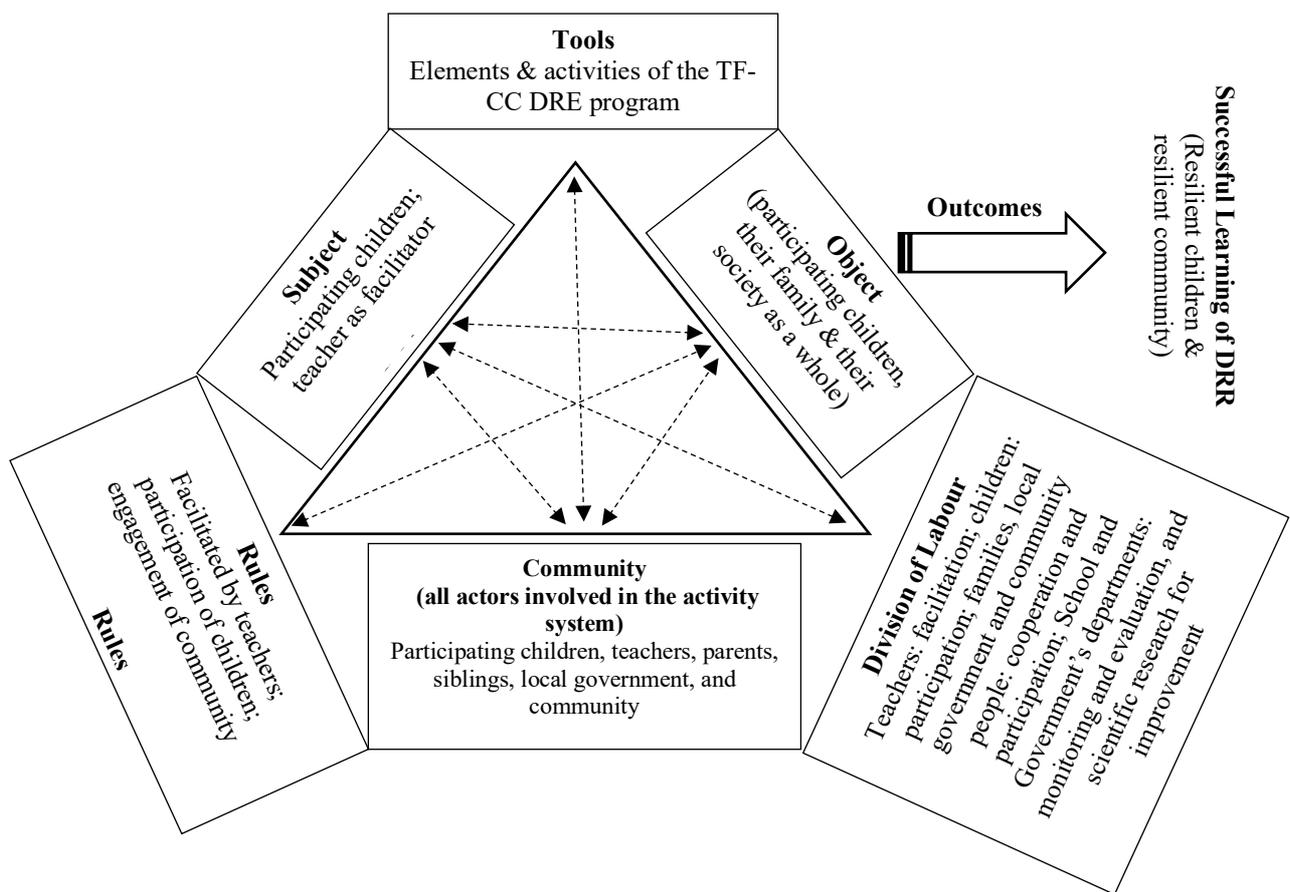
Another limitation is that school teachers did not participate. However, the study does acknowledge that teachers are an integral part of school DRR education. The study relied on the literature that indicates teachers' enthusiasm for teaching DRR in the classroom but at the same time, shows a low level of confidence due to lack of training. Further action-research on the recommended teacher-facilitated DRR education program should certainly examine teachers' experiences and views. This could provide important information for the modification and improvement of child-centred and school-based DRR education programs. In this sense, the study offers a starting point for designing new action-research projects on a holistic DRR education program for children which is developed by the children, and incorporates children's views and experiences. The study also suggests further research into preparation of a DRR training module for teachers with the active participation of teachers and curriculum experts.

## **9.5. Recommendations: Teacher-Facilitated Child-Centred Disaster Resilience Education (TF-CC DRE)**

### **9.5.1. Background**

While recommendations from the child participants, NGO practitioners, curriculum experts and government officials were discussed earlier, at this point the study combines the findings

with theory and learning from previous research to design a sustainable disaster resilience education program for children. It must be carefully noted that the recommended program is extensively crafted and developed by the children researchers, and the adult PhD researcher played the role of a team member. The major input has been from focus group discussions where children shared their experiences and views on what they liked and disliked about current CC-DRR and school DRR programs, and made suggestions about the kind of disaster education program they wished to design. It also includes findings from observations and interviews with NGO practitioners, curriculum experts and government officials. This is the “Teacher-Facilitated Child-Centred Disaster Resilience Education” (TF-CC DRE).



**Figure 9.2. The (Conceptual) Activity Framework of TF-CC DRE program**

(Adapted from Engeström, 1987)

The program is designed and built on the core foundation of the Activity Theory (Engeström, 1987). The TF-CC-DRE is viewed as a platform of participation of people at all levels – children and adults – where disaster resilience comes as the ultimate outcome of their participation and activities.

Another instrument that has been used as the guiding principle in shaping the program is a new evidence-infused tool, the Disaster Resilience Education (DRE) Practice Framework (Towers, Ronan, Haynes, Noonan et al., 2016). The DRE Practice Framework was developed to guide design, development, delivery, monitoring, evaluation and implementation of DRE programming (Towers et al., 2016). This tool speaks to both top-down and bottom-up design, delivery and evaluation approaches, both of which have been used here. During interviews with the CC-DRR practitioners and curriculum experts, this tool has been discussed with them for their thoughts and suggestions about potential application. All expressed their positive views towards its application.

The TF-CC-DRE program consists of an array of several components or elements. For each of these components a set of expected outcomes and indicators has been provided to guide monitoring and evaluation in the later stage. This is widely regarded as ‘program theory’ in evaluation research (Bickman, 1987; Pope, Finney & Bare, 2019; Riemer & Bickman, 2011; Weiss, 1997). Some evaluation studies suggest that program theory is generally developed by the evaluators based on a literature review, discussion with key informants and/or through observation of similar programs (Lipsey & Pollard, 1989). According to other studies, programs, generally top-down, are developed by people who are directly associated with program implementation (Rogers, Petrosino, Huebnerand & Hacs, 2000). This research also found that there is very low and, in most cases, no participation of children in the design phase

of DRR education programs. Thus, this research endeavoured to bring children to the front line in designing the program. However, the study used a combination of the both bottom-up and top-down approaches (Pawson & Tilley, 1995; Patton, 2002, 2003) by bringing children, program implementers and policy makers together.

### **9.5.2. Presenting TF-CC DRE Program: Designed and prepared by the Children Co-researchers**

*This amazing TF-CC DRR program consists of 11 activities or you can also call them elements. By analysing Mayeda's research we have identified these 11 elements which bring the best DRR outcomes and also other kids like us consider them to be best as they like them and as they find them for bringing best outcomes. From this research, we have identified that two key reasons of NGO-led CC-DRR programs not being sustainable: i) teachers are not included in the implementation and facilitation process; ii) short duration of projects due to funding. For this reason, we have designed TF-CC DRR to be facilitated by the teachers in school so that it keeps running all the time and kids have the opportunity for DRR education with their right of participation. But through this program, not only school kids, but also their friends who do not go to school, their little and big brothers, moms and dads , uncles and uncles, grandmas and grand dads, cousins and neighbours, all the community people and also other NGOs, and government people all can participate, learn and work for DRR together. With this program we can make a better world with strong DRR capacity.*

**Table 9.1. Teacher-Facilitated Child-Centred Disaster Resilience Education (TF-CC DRE)  
developed by the child researchers**

<i>SL</i>	<i>Elements</i>	<i>Objectives</i>	<i>Activities</i>	<i>Teacher's role and resources</i>	<i>Short-term outcomes</i>	<i>Intermediate outcomes</i>	<i>Long-term impact</i>
1	Tree planting	Children will understand the importance of trees in disaster risk reduction: e.g., for air pollution, river bank/soil erosion, climate change. They will be informed and motivated for planting trees in their school, households and community, and will be encouraged to raise awareness for the same among the family members, community and out of school children.	<p>Activities will include:</p> <ul style="list-style-type: none"> <li>• Teacher-children discussion on trees;</li> <li>• Making seasonal calendar (fruits-vegetables-crops)</li> <li>• Drawing pictures</li> <li>• In classroom they can use reliable resources available in the internet with teacher's approval.</li> <li>• Learning about different parts of trees and life cycle;</li> <li>• Making plan for planting trees in home (can be map of home and community where they can plant trees)</li> <li>• Can be a chart in the classroom to fill out by the children themselves so that they can write down the number of trees they have</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher will introduce the kids with the importance of trees using storytelling, multimedia, bringing indoor plants or taking the kids outside the classroom. The class can be even moved outside under the shed of a big tree.</li> <li>• Teacher can ask children to tell few names of trees. There can be game like writing down 3-5 names with the first letter of their names and how they benefit us. Children then can be divided into groups and share with each other, and then each group can present their list of trees. Later, this group can be assigned to plant those trees in their house and school.</li> <li>• Teacher can use available online educational materials/videos to teach them about parts of plants and etc. e.g., see the link <a href="https://youtu.be/TD60-3rqPXg">https://youtu.be/TD60-3rqPXg</a>;</li> </ul>	<ul style="list-style-type: none"> <li>• Children know about the benefit of planting trees and the importance of trees for climate, environment and human life;</li> <li>• They are motivated to raise awareness among their family members and other children and adults in their communities about the importance of tree plantation;</li> <li>• They have started planting trees in their school premises</li> <li>• They have started planting trees in their houses</li> <li>• Children have started making a nursery in their school with available local plants and using the seeds from the fruits they have eaten.</li> </ul>	<ul style="list-style-type: none"> <li>• Children and the community are aware of the benefit of planting trees and motivate to plant more trees and cut less.</li> </ul>	<ul style="list-style-type: none"> <li>• Children, families and their community are aware of planting trees;</li> <li>• Every school has a nursery made by children</li> <li>• School premise has trees and it is greener than before</li> <li>• Tree planting is a part of DRR education in the national curriculum.</li> <li>• Trees will reduce soil erosion/canal/pond bank erosion.</li> <li>• Lot of trees in the community will fight climate</li> </ul>

<i>SL</i>	<i>Elements</i>	<i>Objectives</i>	<i>Activities</i>	<i>Teacher's role and resources</i>	<i>Short-term outcomes</i>	<i>Intermediate outcomes</i>	<i>Long-term impact</i>
			<p>planted, and find at the end of the month who have planted the most.</p> <ul style="list-style-type: none"> <li>• Children will share pictures of their garden, trees, plants, etc.</li> </ul>	<p><a href="https://youtu.be/LGh7WEZe7k">https://youtu.be/LGh7WEZe7k</a></p> <p><a href="https://youtu.be/89QRrnnYPNw">https://youtu.be/89QRrnnYPNw</a></p> <ul style="list-style-type: none"> <li>• They can also do drawing and painting trees.</li> <li>• Teachers then explain how kids can make compost using their food waste in home, and it can be their class project</li> <li>• Can be games like -writing name of trees with letters, e.g., by turn each kid will give a letter to write names of fruit-flower-wood trees and whoever finishes first will count to ten and all will check with each other's. if someone's name matches with others', point will be cut off. Later, point will be counted for the unique names. 10 points for each name. This can be like the traditional Bangladeshi game “নাম-দেশ-ফুল-ফল” (name a person-country-flower-fruit).</li> </ul>			change as well.

<i>SL</i>	<i>Elements</i>	<i>Objectives</i>	<i>Activities</i>	<i>Teacher's role and resources</i>	<i>Short-term outcomes</i>	<i>Intermediate outcomes</i>	<i>Long-term impact</i>
				<ul style="list-style-type: none"> <li>Local government disaster management committee members can be invited to attend the planting events at school and community.</li> </ul>			
2	Drill/ Simulation for earthquake and fire	The objective of the drill is to prepare children more confident and resilient to face a fire incident or earthquake.	<ul style="list-style-type: none"> <li>School will organise fire and earthquake evacuation drill once in every three/four months.</li> <li>Parents and siblings of the students will also be encouraged to participate in the drill.</li> </ul>	<p>Teacher will demonstrate the process drill/simulation to the children.</p> <p>Teacher will supervise earthquake drill in the classroom. The participant children will be responsible for sharing it to the other children in their school.</p> <p>Moreover, during one morning assembly session, teacher will demonstrate before all the school children about the upcoming fire drill.</p> <p>The local Fire Service and Civil Defense department will be contacted by the school authority so that they can cooperate organising the drill event.</p> <ul style="list-style-type: none"> <li>Also, Fire service and Civil defense officers will visit to</li> </ul>	<ul style="list-style-type: none"> <li>Children will be aware of the drill/simulation happening in their school.</li> <li>Children will know what to do during a drill.</li> <li>Children are motivated to take the drill as a serious event and respond accordingly.</li> <li>Children are better prepared to face real life fire/earthquake event.</li> </ul>	<ul style="list-style-type: none"> <li>Children know what to do during the occurrence of an earthquake or fire.</li> <li>Children are confident that they can do accordingly in real life situation</li> </ul>	In every school will install fire alarm; The drill/simulation will be included as a mandatory school activity in the school's annual plan.

<i>SL</i>	<i>Elements</i>	<i>Objectives</i>	<i>Activities</i>	<i>Teacher's role and resources</i>	<i>Short-term outcomes</i>	<i>Intermediate outcomes</i>	<i>Long-term impact</i>
				<i>demonstrate them fire safety rules, how to use a fire extinguisher, etc. This can be organised once in every three/four month followed by the simulation.</i>			
3	Debate	<i>By participating in debate on different DRR issues, children will learn as well as have opportunities to share their knowledge and learning with other children and adults.</i>	<i>School will organise debate on different topics of DRR</i>	<ul style="list-style-type: none"> <li>• <i>Teacher will liaison with the existing school debate club, otherwise help children to form one, and organise debate on DRR issues.</i></li> <li>• <i>Teacher will get students organised in groups and select topics regarding DRR.</i></li> <li>• <i>Teacher and students will select a date for the debate and will invite parents, family members and local government members and elite members from the community.</i></li> <li>• <i>If possible, they can also invite teachers and student from other schools.</i></li> <li>• <i>They can also make effort to organise an inter school debate competition on DRR issues.</i></li> <li>• <i>Teacher will check children's speech script and give feedback while children</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>DRR Debate has been organised in school</i></li> <li>• <i>Through the preparation of speech children learn about DRR issues.</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>DRR Debate has been become a regular even in school.</i></li> <li>• <i>More children are participating in the debate.</i></li> <li>• <i>Other schools/children from other school are showing interested in DRR debate.</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>In the national debate, DRR will be a cross cutting issue and it will be practiced regularly</i></li> <li>• <i>Debate competition will be.</i></li> <li>• <i>DRR debate has become has a component in the annual educational, cultural and events of school.</i></li> <li>• <i>DRR Debate has become a regular practice in</i></li> </ul>

<i>SL</i>	<i>Elements</i>	<i>Objectives</i>	<i>Activities</i>	<i>Teacher's role and resources</i>	<i>Short-term outcomes</i>	<i>Intermediate outcomes</i>	<i>Long-term impact</i>
				<i>are preparing for their debate.</i>			<i>National school debate.</i>
4	<i>Group Discussion</i>	<i>By participating in group discussions, children will learn from and share knowledge with each other about DRR issues, identifying, risks, their ideas. Discussion can be on different topics on DRR, i.e, flood, cyclone, earthquake, etc. From these</i>	<i>Children and teacher will select a topic for the day. Also, it can be different topic for each group. Then the children will be set in groups with each group containing 4-6 children. They will then discuss with each other for 15-20 minutes and prepare their presentation based on their discussion on a mountain paper. After that, each group will have 5-8 minutes to present their discussion findings in front of the class. They will then stick the mountain papers outside their classroom wall so that they can share their knowledge with</i>	<i>Teacher will maintain a log book on the topics of DRR has been discussed. It will include, date, name of the group members, name of the group leaders.</i>  <i>Teacher will help children getting into group. Teacher will make sure that in each group there is gender balance if there are both boys and girls in the classroom.</i>  <i>Teacher will help students to decide what topic to work on that day and take down the notes on the log book.</i>	<i>As the children will share knowledge with each other, they will be confident about what they know about DRR.</i>  <i>By sharing with other children, the participating children also contributes in awareness building.</i>	<ul style="list-style-type: none"> <li>• <i>Children's knowledge on DRR increases.</i></li> <li>• <i>More children are aware of DRR issues (Preparedness, response and recovery).</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>More number of children have better DRR knowledge;</i></li> <li>• <i>DRR group discussion is in practice in school classroom.</i></li> </ul>

<i>SL</i>	<i>Elements</i>	<i>Objectives</i>	<i>Activities</i>	<i>Teacher's role and resources</i>	<i>Short-term outcomes</i>	<i>Intermediate outcomes</i>	<i>Long-term impact</i>
			<p><i>other children of school.</i></p> <p><i>Once in a month, a group presentation will be held during the assembly session in the morning. During that session, children will present issue on DRR before all the students to share their knowledge with all children and teachers.</i></p> <p><i>Children will share about their activities (what they are doing) and their knowledge with other children and adults in their community including out of school children.</i></p>				
5	<i>Cultural Activities</i>	<i>By organising and participating in different cultural activities e.g., stage drama/ song, dance, recitation</i>	<i>Activities may include organising and performing in the following activities:</i>	<i>Cultural activities will be organised when children have gained progress with their DRR knowledge so that they do not provide any wrong information to people.</i>	<i>Children are enthusiastic about sharing DRR knowledge and skills.</i>	<p><i>Children are more prepared.</i></p> <p><i>Children DRR has become a</i></p>	<i>Children, their family and the community are better prepared and resilience.</i>

<i>SL</i>	<i>Elements</i>	<i>Objectives</i>	<i>Activities</i>	<i>Teacher's role and resources</i>	<i>Short-term outcomes</i>	<i>Intermediate outcomes</i>	<i>Long-term impact</i>
		<p>children will have an opportunity to express their creativity as well as build awareness on DRR among mass people, other children and community members.</p>	<ul style="list-style-type: none"> <li>i. Stage drama</li> <li>ii. Chorus/duet/solo song</li> <li>iii. Poem recitation</li> <li>iv. Dancing</li> <li>v. Story telling</li> <li>vi. Wall Magazine</li> <li>vii. A simple "Duck-cover-hold on" like activity with the participation of all the audiences during school's other event's, e.g. annual sport's award giving ceremony, and other events where children, parents and/ community people gather.</li> </ul> <p>There will be open question/answer session for clarification if someone from the audience has questions.</p>	<p>Teacher will discuss with the children regarding what sort of cultural activities and when they would like to organise.</p> <p>The assigned Teacher will also consult with the Headmaster, Sports teacher, with the cultural club authority if there is any, regarding this.</p> <p>A special cultural event solely dedicated to DRR can be organised on the International Day for Disaster Reduction (13 October every year).</p> <p>Moreover, special timeslot can also be taken during the annual sports and cultural event, and while celebrating other national/international days which are already in practice in national level including some of which are mandatorily celebrated in schools in Bangladesh, e.g., National Independence Day,</p>	<p>Children feel confident about their learning. More children and adult in the community have DRR knowledge.</p>	<p>cross cutting issues in school's cultural activities.</p>	<p>DRR in school's cultural activities has become a part of national curriculum.</p>

<i>SL</i>	<i>Elements</i>	<i>Objectives</i>	<i>Activities</i>	<i>Teacher's role and resources</i>	<i>Short-term outcomes</i>	<i>Intermediate outcomes</i>	<i>Long-term impact</i>
				<p><i>National Victory Day, First day of Bengali New year, etc.</i></p> <p><i>These events will be open to the public.</i></p> <p><i>Children will invite their parents, siblings, friends, out of school children and community members including members of the local government Disaster management committee.</i></p> <p><i>Apart from these, children can perform various cultural activities, as part of their learning of different topics, in the classroom.</i></p>			
6	<i>Keeping First Aid box in School and giving children First aid training</i>	<i>Having a first aid box and providing children with basic first aid training has been found to be bring direct positive outcome. Therefore, the objective is to help children so that they can help</i>	<i>Children will request the Headmaster to buy a first aid box for their school if there is not any (where most of the schools in Bangladesh does not have a first aid box in place).</i>	<i>The Physical Education/Sports teacher can be the best person to provide first aid training to the children as they have already received training.</i>	<p><i>Children have basic first aid knowledge.</i></p> <p><i>School have first aid box in place and children can have access to it.</i></p> <p><i>Children have first aid box in their houses.</i></p>	<i>As children share their knowledge with other children, the community people including adults started understanding the importance</i>	<p><i>There will be first aid box in each school in Bangladesh.</i></p> <p><i>Children are confident and more resilient regarding minor</i></p>

<i>SL</i>	<i>Elements</i>	<i>Objectives</i>	<i>Activities</i>	<i>Teacher's role and resources</i>	<i>Short-term outcomes</i>	<i>Intermediate outcomes</i>	<i>Long-term impact</i>
		<i>themselves and each other's.</i>	<p><i>The training will include what to do when someone hurts themselves e.g., cuts, bruises, know how to tell if someone is unconscious and seek for grownup's help, calling emergency number (in Bangladesh's case 999)</i></p> <p><i>Children will do roleplay in front of teachers and students as part of their learning.</i></p> <p><i>Children will be given assignment to prepare first aid boxes in their home with help of their parents and siblings.</i></p> <p><i>Children also share their first aid knowledge with out of school children and encourage them to organise a first aid</i></p>			<i>of keeping a first aid box and knowing basic first aids.</i>	<p><i>accidental events.</i></p> <p><i>People understand the importance of keeping a first aid box and knowing basic first aid dos and don'ts.</i></p>

<i>SL</i>	<i>Elements</i>	<i>Objectives</i>	<i>Activities</i>	<i>Teacher's role and resources</i>	<i>Short-term outcomes</i>	<i>Intermediate outcomes</i>	<i>Long-term impact</i>
			<i>box in their house with help of their family members.</i>				
7	<i>School and Community Risk Assessment</i>	<ul style="list-style-type: none"> <li><i>Children will learn to identify the existing risks in their school and community and make action plan to reduce those risks.</i></li> <li><i>Children will prepare risk MAP in their school and community</i></li> </ul>	<ul style="list-style-type: none"> <li><i>Workshop like group work in the classrooms;</i></li> <li><i>Children will discuss with parents, siblings and friends;</i></li> <li><i>school-community gathering;</i></li> <li><i>advocacy with local government to get support on risk reduction action plan.</i></li> </ul>	<p><b><u>School risk assessment (SRA):</u></b></p> <p><i>Children will be divided in group like as the group discussion. This time they will use chart/mountain paper to make a risk profile which may include the name and nature of the risks, location, what can be done to reduce it and how/when they want to do about it.</i></p> <p><i>Later, each group will present their findings, and from that they will make a final risk assessment chart and action plan to work on that.</i></p> <p><i>They will share/present it in front of other students during the assemble, and decide where is the best place in their school to display so that all student can see it. They will also share it with student cabinet and the cabinet may</i></p>	<i>Children have identified the risks in their school and community, and have made DRR action plan.</i>	<i>Children and community have started to work on the risk reduction action plan.</i>	<p><i>Existing risks in school and community have been reduced.</i></p> <p><i>Both children, community and local government are participating together for DRR in their community.</i></p> <p><i>SRA has become a regular practice in every school.</i></p> <p><i>CRA has become a regular practice among the community and local disaster management committee.</i></p>

<i>SL</i>	<i>Elements</i>	<i>Objectives</i>	<i>Activities</i>	<i>Teacher's role and resources</i>	<i>Short-term outcomes</i>	<i>Intermediate outcomes</i>	<i>Long-term impact</i>
				<p>help and monitor to work on their action plan.</p> <p><b><u>Community risk assessment (CRA):</u></b></p> <p>CRA can be done same like as SRA in the classroom. But children will be encouraged to take it as a group home assignment. They will share this with their other friends, family members and relatives and input their opinions.</p> <p>Once complete, teacher can help them organising a gathering (a separate event or in any other school event) by inviting parents, community members and local government disaster management committee members to share this.</p>			
8	Learning about hazards and disasters: causes, pre-vention,	Children will have knowledge and skill on mitigation, preparedness and response for the following hazards and work as agents	Children attend the classroom and outside activities facilitated by the teachers. Activities include the following:	<p>Teacher will facilitate the lessons (not crossing more than one topic each day).</p> <p>Teacher will use multimedia (using least amount of lecture) for taking session. For each topic teacher will follow the</p>	<p>Children have better DRR knowledge.</p> <p>Children feel confident their knowledge.</p> <p>Children have shared their knowledge and</p>	Community have started taken initiative for DRR (e.g., fencing in the ponds for drowning	<p>Children have better DRR knowledge.</p> <p>Children are better prepared.</p>

<i>SL</i>	<i>Elements</i>	<i>Objectives</i>	<i>Activities</i>	<i>Teacher's role and resources</i>	<i>Short-term outcomes</i>	<i>Intermediate outcomes</i>	<i>Long-term impact</i>
	<p>preparedness, response and recovery (to be segregated grade-wise)</p> <p>Children wish to have in the following topics in the program: earthquake, flood, environmental pollution, cyclone, thunders/lightening, water logging, building</p>	<p>of change in the community:</p> <p>7. Flood 8. Drowning 9. Fire 10. Earthquake 11. Lightening/thunder storm 12. Cyclone 13. Environmental pollution</p>	<ul style="list-style-type: none"> <li>• Drawing</li> <li>• Painting</li> <li>• Writing poems/verses/songs and singing</li> <li>• Identifying the hazards what they have in their community and geographical areas</li> <li>• Role playing</li> <li>• Watching child-friendly documentaries, short videos (e.g., Kamaishi Miracle, Tilly Smith story, etc.) in supervision of their teacher.</li> <li>• Discussion with parents, siblings and friends.</li> <li>• Making posters</li> <li>• Raise awareness in the community</li> </ul>	<p>"hazards lesson guidelines for teachers"<sup>9</sup>.</p>	<p>skill in their household and community.</p>	<p>prevention, etc).</p>	<p>Children are confident and resilient.</p> <p>Community is resilient.</p> <p>Disaster loss has decreased considerably at household and community level.</p>

<sup>9</sup> A teacher's guideline/module needs to be prepared by the curriculum specialists in consultation with children.

<i>SL</i>	<i>Elements</i>	<i>Objectives</i>	<i>Activities</i>	<i>Teacher's role and resources</i>	<i>Short-term outcomes</i>	<i>Intermediate outcomes</i>	<i>Long-term impact</i>
	<i>collapse, fire, cyclone.</i>						
9	<i>Learning about 999</i>	<i>Children will know the emergency calling number for fire-police-ambulance and when and how to access help through that.</i>	<p><i>Activities include the following:</i></p> <ul style="list-style-type: none"> <li><i>Teacher demonstrating in the classroom;</i></li> <li><i>Learning through role playing;</i></li> <li><i>Children make posters/pamphlets for aware raising in the community.</i></li> <li><i>Sharing with family members and friends.</i></li> </ul>	<p><i>Teacher will explain and demonstrate to the children what 999 is and when and how we can access help through 999. Teacher will also address why they should not make false calls to 999. To make the lesson interesting, teacher will involve the children in role playing.</i></p> <p><i>Teacher will guide children in making poster/pamphlet for awareness raising about 999 in school, household and community.</i></p> <p><i>Teacher will encourage children to share this knowledge with their parents, siblings, friends and out of school children in the community.</i></p>	<i>Children knows that they can call 999 for seeking help in case of an emergency. They know what information to provide and what to do during the call.</i>	<i>Children and community are using 999.</i>	<i>999 has been strongly established in Bangladesh as an emergency calling number and all people in the community know about it and use it when necessary.</i>
10	<i>Utilising Student Cabinet (also known as Student</i>	<i>Student cabinet is an already existing platform in every primary and secondary school in Bangladesh.</i>	<i>Student cabinet members including the sports teacher will be contacted how they can</i>	<i>DRR Teacher will peak with the cabinet about their plan and decision, and how they are going to execute it. Teacher will also advice,</i>	<i>DRR has become one of the assigned activities of school cabinet.</i>	<i>Children are performing lead role in school DRR activities.</i>	<i>School cabinet has become a sustainable DRR platform in school.</i>

<i>SL</i>	<i>Elements</i>	<i>Objectives</i>	<i>Activities</i>	<i>Teacher's role and resources</i>	<i>Short-term outcomes</i>	<i>Intermediate outcomes</i>	<i>Long-term impact</i>
	<i>Council/Child Parliament)</i>	<p><i>According to the Primary and Secondary School Student Cabinet Manual act 22.1 (Ministry of Education Bangladesh, 2018), every school can introduce new activities and responsibilities to the cabinet according to their demands and needs. Thus, the first object is to include DRR activities in the cabinet.</i></p> <p><i>The long-term aim is to incorporate DRR as one of the working sectors of the cabinet with the current eight sectors, and thus, to create a ninth position for an</i></p>	<p><i>incorporate DRR issues in this.</i></p> <p><i>In their monthly cabinet meeting, they will also include DRR in the agenda, under which the cabinet can discuss and make decision how they are going to deal with this in their work span.</i></p> <p><i>Various activities may include:</i></p> <p><i>-Advocacy with the local government disaster Management Committee regarding children identified risks in their school and community area, and etc.</i></p> <p><i>-They can organise screen time using school projector to show various DRR related videos, etc.</i></p>	<i>suggest, supervise and support the cabinet's activities.</i>		<p><i>Children are motivated to take actions regarding DRR in their school and community.</i></p> <p><i>Children are taking leadership in DRR initiatives.</i></p>	<p><i>A strong cooperation has been created between school and local government disaster management committee.</i></p> <p><i>Both children and community are confident and resilient.</i></p>

<i>SL</i>	<i>Elements</i>	<i>Objectives</i>	<i>Activities</i>	<i>Teacher's role and resources</i>	<i>Short-term outcomes</i>	<i>Intermediate outcomes</i>	<i>Long-term impact</i>
		<i>elected student representative for DRR.</i>	<p><i>with supervision of teachers.</i></p> <p><i>-They can also take lead in organizing DRR rally for community awareness.</i></p> <p><i>-It can also include other activities which children may find interesting and necessary with approval and supervision of teachers.</i></p>				
11	<i>Utilising Shornoo Kishoree and Shurjo Kishor Platform</i>	<i>Shorno Kishoree and Shurjo Kishor is a national level school-based program in Bangladesh. Every secondary school has one Shorno Kishoree (Adolescent girl) and Shurjo Kishor (adolescent boy). This platform is</i>	<p><i>Shorno Kishoree and Shurjo Kishor will include DRR topic in their monthly community meeting.</i></p> <p><i>If there is a school event on DRR that is open for community, they will spread the news and invite out of school children</i></p>	<p><i>Shorno Kishoree and Shurjo Kishor will consult with teacher about what they are going to do on DRR in their monthly meeting. They will keep a log book about work so that they can systematically cover different DRR issues in their meetings.</i></p> <p><i>Teacher will follow up with them.</i></p>	<i>Shorno Kishoree and Shurjo kishor are working for awareness building on DRR in their community.</i>	<i>More adolescents and children have DRR knowledge and skills.</i>	<i>DRR education has gained a sustainable platform through Shorno Kishoree and Shurjo Kishor program.</i>

<i>SL</i>	<i>Elements</i>	<i>Objectives</i>	<i>Activities</i>	<i>Teacher's role and resources</i>	<i>Short-term outcomes</i>	<i>Intermediate outcomes</i>	<i>Long-term impact</i>
		<p><i>mainly focus on adolescent health and hygiene.</i></p> <p><i>The objective of this element of the program is to motivate the Shorno Kishoree and Shurjo Kishor to take in DRR in their work. Thus, they will also work as agent of DRR.</i></p> <p><i>Therefore, the long-term aim is to officially include DRR in Shorno Kishoree and Shurjo Kishor platform in national level.</i></p>	<i>and community people to attend.</i>				

**TF-CC DRE Table ends here!**  
**Thank you!**  
**Bye bye!**

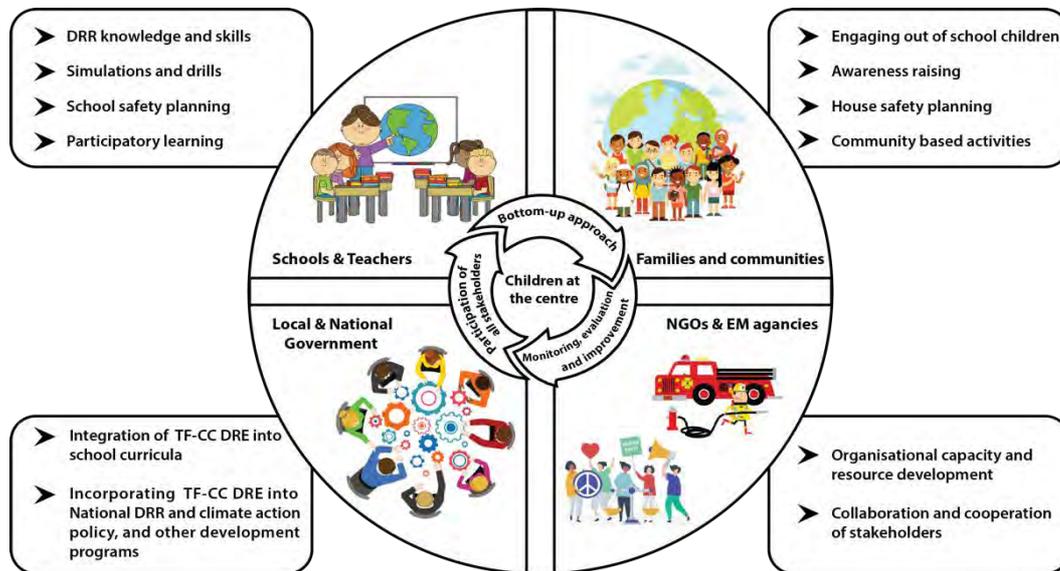


### **9.5.3. Significance of TF-CC DRR Program**

This research identified the gap in monitoring and evaluation in DRR education that applies to the current CC-DRR and School DRR programs. The children-designed TF-CC DRE provides a structured model of monitoring and evaluation which is embedded within the program itself. This is very similar to a theory-driven evaluation model. For evaluation, Fitz-Gibbon and Morris (1996) have provided a comprehensive definition of theory-based evaluation: “one in which the selection of program features to evaluate is determined by an explicit conceptualization of the program in terms of a theory, a theory which attempts to explain how the program produces the desired effects” (p. 177). Therefore, the hierarchy of expected outcomes and the set of outcome indicators in children-designed TF-CC DRE can be well-regarded as a program theory matrix (Funnel, 2000) for the TF-CC DRE program.

Some evaluation scholars think that program theory is not essential for an effective evaluation, especially if it is about simply assessing the program’s efficacy and impact (Scriven, 1998, p. 59, cited in Johnson, Ronan, Johnston & Peace, 2016). But the majority consider that theory-driven evaluation has the potential to reveal incorrect and unrealistic expectations, establish an improved collaboration between program developers and evaluators, and, most importantly, helps incorporate better-quality outcome indicators for measuring program impacts as well as implementation processes (Bickman, 1987; Birckmayer & Weiss, 2000; Chen & Rossi, 1983; Johnson et al., 2016; Lipsey & Pollard, 1989; Riemer & Bickman, 2011; Towers et al., 2016; Weiss, 1997). Towers et al. (2016) and Johnson et al. (2016) suggested that a theory-driven evaluation can help to improve the quality of a disaster resilience education program for children by providing a systematic framework for identifying, testing, and improving more realistic outcome indicators and success criteria, and proposed the application of program theory in the design and evaluation of DRR education programs. Thus, the application of

theory-based evaluation tools within children’s disaster resilience education programs has potential to create an expanded body of knowledge which in the long run can provide guidance for DRR by curricular integration and child-focused DRR programming (Turnbull, 2002).



**Figure 9.3. Aspects and prospects of TF-CC DRE program**

*(Colourful cliparts, collected from various internet sources, were used in this figure in recognition of the child researchers’ love for bright colours)*

TF-CC DRE is expected to bring better DRR outcomes and sustainable implementation of DRR education. The CC-DRR approach in this program combined with the bottom-up and top-down design strategies can have the potential to produce better DRR outcomes by bringing the whole community (children, parents, school and local residents) and the service providers (local government, NGOs and policy makers) under a single umbrella, and can ensure sustainable implementation.

TF-CC DRE program has also been shared with some of the curriculum experts at the NCTB (those interviewed before participating in the first phase of this study) for their feedback.

According to them, this program has huge potential for nation-wide implementation in Bangladesh. Recognising the value of “children’s input” in development of this program, they considered that it greatly reflects the voice and ideas of all children in Bangladesh. Therefore, they stated that, when NCTB is struggling with integration of DRR within the current overcrowded curriculum, this program could help reduce the burden while also providing better child participatory DRR education in school. They think that political willingness is very necessary for making productive change in the school curriculum by introducing such “children-designed DRR programs” in all schools in Bangladesh. However, to be ready for such a scaled implementation, further participatory action research (Kemmis and McTaggart, 2008) is recommended for testing and modification of the program in school settings, involving children, teachers, families, local government and curriculum/education experts. Teacher training is also very much required for the future implementation of this program.

## APPENDIX

### Appendix A: Information Sheets



#### **DISASTER RISK REDUCTION EDUCATION FOR CHILDREN: A STUDY IN BANGLADESH** **Information Sheet** (For Adult Participants)

##### ***What is this research about?***

The study aims to understand implementation process and outcomes of Disaster Risk Reduction (DRR) Education programs in Bangladesh. This research project has full ethical clearance from the Human Research Ethics Committee of the Central Queensland University, Australia (reference: 0000020758). By sharing your knowledge and experiences in this research, you will be making an important contribution that is expected to facilitate reduction of children's vulnerability and increasing their resilience as well as of the greater community. The results of the interview will be used to produce a PhD level research thesis, one or few publications in peer-reviewed journals and a report for the BNHCRC. The non-identifiable information will also be used for future related research as required.

The study will be conducted by **Ms Mayeda Rashid** to fulfil the requirements of the Doctor of Philosophy degree at Central Queensland University, Australia under the supervision of **Professor Kevin Ronan** as the Principal Supervisor and **Dr JC Gaillard** as Associate Supervisor. The research is supported under the Commonwealth Government's Research Training Program (RTP) and the Australian Bushfire and Natural Hazards Collective Research Centre (BNHCRC).

##### ***Who can participate?***

People from the following categories can participate:

Officers from the Ministry of Education, the Ministry of Primary and Mass Education, the Ministry of Disaster Management and Relief, the National Curriculum and Textbook Board, and the Local Government unit;

A person with experience of working at NGOs implementing child-centred disaster risk reduction (CC-DRR) programs.

##### ***How can I participate?***

You will participate in an interview with Ms Mayeda Rashid. The interview will be held at a time and place convenient to you and arranged in advance. Your participation is completely voluntary with an estimated duration of one hour, which can be adjusted to meet your convenience. During your participation, you may feel low level of discomfort and inconvenience. The interview will be audio-recorded digitally to maintain the accuracy of the

provided information with your consent, and this recording will only be available to the researchers listed above.

### ***What are my rights?***

Your participation in the study is voluntary. If you do not wish to take part, you are not obliged to. If you decide to participate, you will be asked to sign a consent form preceding the interview. Even if you decide to take part and later change your mind, you are free to withdraw at any time without having to give a reason and without consequences.

On request, you will be offered a copy of the interview transcription and any resulting publications either electronically or by mail upon completion of this research.

### ***How does this research maintain respondents' confidentiality/anonymity?***

Please note that no report or document produced from this study will contain any single person's identifying information. No individual will be identified in any publication of results and your responses will remain anonymous.

### ***Who to contact for more information?***

Should you have any query please feel free to contact:

Primary Investigator:

**Mayeda Rashid**

Mobile (Aus): +61 (0)406 848 931

Mobile (BD): +880 (0)173 3522 377

Email: mayeda.rashid@cqu.edu.au

Secondary Investigators:

**i) Professor Kevin Ronan**

Phone: +61 7 4923 2144

Email: k.ronan@cqu.edu.au

**ii) Professor JC Gaillard**

Tel: +64 (0)9 923 9679

Email: jc.gaillard@auckland.ac.nz

### ***What if I have concerns or complaints?***

If you have any complaints or reservations about any ethical aspect of your participation in this research, you can contact **Professor Mobashera Khanam**, National University Bangladesh through email: [mobashera.khanam@outlook.com](mailto:mobashera.khanam@outlook.com) and/or Mobile: +8801711823191. You can also contact the Research Ethics Committee through email: [ethics@cqu.edu.au](mailto:ethics@cqu.edu.au) and/or phone: +61 7 4923 2603 and/or mail: Research Division (Bldg 32 Level 2), CQUniversity Australia, Bruce Highway, North Rockhampton QLD 4701, Australia. Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.



**DISASTER RISK REDUCTION EDUCATION FOR CHILDREN: A STUDY IN BANGLADESH  
Information Sheet**

(For child participants and their parents/guardians)

***What is this research about?***

The study aims to understand children's views and experience on Disaster Risk Reduction (DRR) Education programs. This research project has received ethical approval from the Human Research Ethics Committee of the Central Queensland University, Australia (reference: 0000020884).

By sharing your experiences and views in this research, you (parents/guardians: your child) will be making an important contribution that will help kids to stay safe during disaster and also make their family and community more resilient. The results of the focus groups will be used to produce a PhD level research thesis, some publications in peer-reviewed journals and a report for Bushfire and Natural Hazard CRC. The non-identifiable information will also be used for future related research as required.

The study will be conducted by **Ms Mayeda Rashid** to fulfil the requirements of the Doctor of Philosophy degree at Central Queensland University, Australia under the supervision of **Professor Kevin Ronan** as the Principal Supervisor and **Dr JC Gaillard** as Associate Supervisor. The research is supported under the Commonwealth Government's Research Training Program (RTP) and the Australian Bushfire and Natural Hazards Collective Research Centre (BNHCRC).

***Who can participate?***

Kids between 8-16 years who have already participated in School DRR education and/or child-centred disaster risk reduction programs.

***How can I participate?***

You (for parents: your child) have been approached because the school you attend has been participating in school-based disaster risk reduction programming. If you would like to volunteer for the study, you will take part in what is called a focus group discussion with your peers. A focus group is really just a discussion where you get asked some questions and you get to say what you think and feel and hear what peers think and feel. You and your focus group friends can decide how you would like it to go. Ms Mayeda Rashid will be also there to guide your discussion. The focus groups will be scheduled in consultation with your teachers at your school to ensure that it takes place at the most convenient and least disruptive time. The discussion is estimated to take approximately one - one and half hours.

Your participation is completely voluntary. During your participation, you may feel low levels of discomfort and inconvenience. If you do, and do not want to participate any more, that is your right. See the next section for more information on your rights. To maintain the accuracy of the information the discussion will be recorded digitally (audio and video tape) if only you

and your focus group friends agree to do so. This recording will only be available to the researchers listed above.

***What are my rights?***

Your participation in the study is voluntary. If you do not wish to take part, you are not obliged to. If you decide to participate, you, along with your parents will be asked to sign a consent form preceding the focus group. Even if you and your parents do provide consent, you and your parents are free to withdraw your participation from the study at any time without having to give a reason and without consequences.

If you participate, on request, you will be offered an easy to read summary of the findings of this research and copy of any resulting publications either electronically or by mail upon completion of this research.

***How does this research maintain respondents' confidentiality/anonymity?***

Please note that no report or document produced from this study will contain any single person's identifying information. No individual will be identified in any publication of results and your responses will remain anonymous. That means all information you share will be private.

***Who to contact for more information?***

Should you have any query please feel free to contact:

Primary Investigator:

**Mayeda Rashid**

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Mobile (BD): +88 01718 379 477

Email: [mayeda.rashid@cqu.edu.au](mailto:mayeda.rashid@cqu.edu.au)

Secondary Investigators:

**i) Professor Kevin Ronan**

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Email: [k.ronan@cqu.edu.au](mailto:k.ronan@cqu.edu.au)

**ii) Dr JC Gaillard**

Tel: +64 (0)9 923 9679

Email: [jc.gaillard@auckland.ac.nz](mailto:jc.gaillard@auckland.ac.nz)

***What if I have concerns or complaints?***

If you have any complaints or reservations about any ethical aspect of your participation in this research, you can contact **Professor Mobashera Khanam**, National University Bangladesh through email: [mobashera.khanam@outlook.com](mailto:mobashera.khanam@outlook.com) and/or Mobile: +8801711823191. You can also contact the Research Ethics Committee through email: [ethics@cqu.edu.au](mailto:ethics@cqu.edu.au) and/or phone: +61 7 4923 2603 and/or mail: Research Division (Bldg 32 Level 2), CQUniversity Australia, Bruce Highway, North Rockhampton QLD 4701, Australia. Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.

## Appendix B: Consent Forms



### DISASTER RISK REDUCTION EDUCATION FOR CHILDREN: A STUDY IN BANGLADESH Consent Form (For Adult Participants)

I, the undersigned hereby consent to my participation in the research project explained above and agree that:

- 1) An Information Sheet has been provided to me and that I have read (*or, where appropriate, have had read to me*) and understood;
- 2) Any questions I have asked, have been answered to my satisfaction;
- 3) I understand that my participation is voluntary and there will be no payment to me for taking part in this study;
- 4) I understand that my participation or non-participation in the research project will not affect me in anyway;
- 5) I understand that I have the right to withdraw from the project at any time without having to give a reason and without consequences;
- 6) I **agree/disagree** (*please select one*) to be audio-taped during the interview knowing that no personal information will be collected about me on tape. Data recorded on tape will be transcribed and de-identified;
- 7) I understand that the research findings will be used to produce a PhD level research thesis, one or few publications in peer-reviewed journals, a report for the Australian Bushfire and Natural Hazards Collective Research Centre, and the non-identifiable information will also be used for future related research as required;
- 8) I understand that my information will be kept confidential as explained in the information sheet.
- 9) I am aware that I should retain a copy of the Consent Form when completed, and the Information Sheet;
- 10) On request, I will be offered a copy of the transcription and any resulting publications either electronically or by mail upon completion of this research.

**Please check the box below:**

<b>I wish to have:</b>	<b>YES</b>	<b>NO</b>
A copy of interview transcription (if applicable)		
A copy resulting publication		
Address where I want the copy/copies to be sent: <b>By Email:</b> <b>By Mail:</b>		

Participant's Signature: \_\_\_\_\_ Date \_\_\_\_\_

Primary Investigator's Signature: \_\_\_\_\_ Date \_\_\_\_\_



**DISASTER RISK REDUCTION EDUCATION FOR CHILDREN: A STUDY IN  
BANGLADESH  
Consent Form  
(For child participants and their parents/guardians)**

I, the undersigned and my parent (where participant is under 18) hereby consent to my/ and my child's participation in the research project explained above and agree that:

- 11) An Information Sheet has been provided to me and that I have read (*or, where appropriate, have had read to me*) and understood;
- 12) Any questions I have asked, have been answered to my satisfaction;
- 13) I understand that my participation is voluntary and there will be no payment to me for taking part in this study;
- 14) I understand that my participation or non-participation in the research project will not affect me in anyway;
- 15) I understand that I have the right to withdraw from the project at any time without having to give a reason and without consequences;
- 16) I **agree/disagree** (*please select one*) to be audio-taped and video-taped (and photo where applicable) knowing that no personal information will be collected about me on tapes/photos. Data recorded on tape will be transcribed and de-identified;
- 17) I understand that the research findings will be used to produce a PhD level research thesis, one or few publications in peer-reviewed journals, a report for the Australian Bushfire and Natural Hazards Collective Research Centre, and the non-identifiable information will also be used for future related research as required;
- 18) I understand that my information will be kept confidential as explained in the information sheet.
- 19) I am aware that I should retain a copy of the Consent Form, when completed, and the Information Sheet;
- 20) On request, I will be offered a copy of the transcription and any resulting publications either electronically or by mail upon completion of this research.

**Please check the box below:**

<b>I wish to have:</b>	<b>YES</b>	<b>NO</b>
An easy to read summary of the findings of this research.		
A copy of a resulting publication		
Address where I want them to be sent: <b>By Email:</b> <b>By Mail:</b>		

Child Participant's Signature: \_\_\_\_\_ Date \_\_\_\_\_

Parent's/guardian's signature: \_\_\_\_\_ Date \_\_\_\_\_

Primary Investigator's Signature: \_\_\_\_\_ Date \_\_\_\_\_

## Appendix C: List of Pre-Primary level textbooks at Bengali-medium Schools

(Prepared with the information collected from NCTB, 2020)

Bengali-medium Pre-Primary Level Textbooks designed by the NCTB															
Books/Charts/Flash cards						Story Books: also available in five Indigenous Languages: i) Garo; ii) Marma; iii) Sadri; iv) Chakma; v) Tripura									
আমার বই ( My book)	এসো লিখতে শিখি ( Let's learn to write)	স্ল্যাশ কার্ড ( Flash cards)	ফ্লিপ চার্ট ( Flip Charts)	ব্যঞ্জনচার্ট ( Chart of Consonants)	স্বরবর্ণ চার্ট ( Chart of Vowels)	টিং টংকের গল্প ( Story of Ting Tong)	লাল পোকাকার গল্প ( Story of Red Bug)	অপুর বিড়াল ( Opu's cat)	বেড়ালোর একদিন ( A day for Going Out)	বর্গরাজা ও ত্রিভুজরানি ( The Square King and the Triangle Queen)	চাচা বাজারে যান ( Uncle Goes to the Market)	ফুল ফোটার আনন্দ ( Joy of Flower Blooming)	খুশি একদিন কুসুমপুরে ( One Day Khushi is in Kushumpur)	কোথায় আমার মা ( Where Is My Mother)	মজার মামা ( Funny Uncle)

### Appendix D: List of Primary level textbooks at Bengali-medium Schools

(Prepared with the information collected from NCTB, 2020)

Bengali-medium Primary Level Textbooks from NCTB						
Grade	Subjects and Textbooks					
I	Bengali	English	Mathematics			
II	Bengali	English	Mathematics			
III	Bengali	English	Mathematics	Science	Bangladesh and Global Studies	Religion and Moral Studies (separate books for Islam, Hindu, Buddhism and Christian)
IV	Bengali	English	Mathematics	Science	Bangladesh and Global Studies	Religion and Moral Studies (separate books for Islam, Hindu, Buddhism and Christian)
V	Bengali	English	Mathematics	Science	Bangladesh and Global Studies	Religion and Moral Studies (separate books for Islam, Hindu, Buddhism and Christian)

### Appendix E: List of Junior Secondary level textbooks at Bengali-medium Schools

(Prepared with the information collected from Tarua Girls High School, and NCTB, 2020)

Junior Secondary level Textbooks from NCTB		
Grade	Subject and Textbooks	
VI	Bengali	
	English	
	Mathematics	
	Science	
	Bangladesh and Global Studies	
	Religion and Moral Studies (Islam, Hindu, Buddhism, Christian)	
	Bengali Grammar	
	English Grammar	
	Arts and Crafts	
	Information and Computer Technology	
	Bengali Rapid Reading	
	Work- and Life-related Education	
	Agriculture Studies	
VII	Home Economics	
	Physical Education and Health	
	Language and culture of Minority Ethnic Groups	
	Supplementary Agriculture Studies (same textbook for grad VI, VII, VIII)	
	VIII	Bengali
		English
		Mathematics
		Science
		Bangladesh and Global Studies
		Religion and Moral Studies (Islam, Hindu, Buddhism, Christian)
		Bengali Grammar
		English Grammar
		Arts and Crafts
Information and Computer Technology		
Bengali Rapid Reading		
Work- and Life-related Education		
Agriculture Studies		

## Appendix F: List of Secondary level textbooks at Bengali-medium Schools

(Prepared with the information collected from Tarua Girls High School, and NCTB, 2020)

IX-X (Same textbooks for both grades)			
Grades	Types	Subject and Textbooks	
<b>Commerce group</b>	<b>General Compulsory Textbooks</b>	<b>Science group</b>	<b>Humanities group</b>
Accounting	Bengali Literature	Physics	Geography and Environment
Finance and Banking	Bengali supplementary readings	Chemistry	Economics
Business Entrepreneurship	Bengali Grammar	Biology	Civics and Citizenship
	Bengali Essays	Higher Mathematics	History of Bangladesh and World
	English		
	English Grammar and Composition		
	Science		
	Information and Computer Technology		
	Religion and Moral Studies (separate books for Islam, Hinduism, Buddhism and Christian)		
	Career Education		
	Bangladesh and Global studios		
	Arts and Crafts		
	Agriculture Studies		
	Home Economics		
	Physical Education, Health Science and Sports		
	Supplementary Agriculture Studies		

## REFERENCES

- Abdalla, A., Raisuddin, A. N. M., & Hussein, S. (2004). *Bangladesh Educational Assessment: Pre-primary and primary Madrasah education in Bangladesh*. Report prepared for Basic Education and Policy Support Activity. Washington, D.C.: United States Agency for International Development.
- Adler, P. A., & Adler, P. (1994). Observational techniques. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research*, pp. 377–392. Los Angeles, London, New Delhi, Singapore and Washington D.C.: Sage Publications, Inc.
- Adler, P., & Adler, P. (1987). *Membership roles in field research*. Newbury Park, CA: Sage.
- Ahmed, M. (2018, August 31). An education system that divides the nation. *The Daily Star*. Retrieved <https://www.thedailystar.net/news/opinion/perspective/education-system-divides-the-nation-1624840>
- Akram, O., Chakma, J., & Mahbub, A. (2012). Continuing education in disaster-affected schools in Bangladesh: An evaluation of the Education in Emergencies Project. *Children Youth and Environments*, 22(2), 249-262.
- Al Jazeera and News Agencies (2019, July 19). Worst floods in years 'submerge' Bangladesh villages: More than four million at risk of food insecurity and disease as flooding forces nearly 200,000 to flee their homes. *Al Jazeera*. Retrieved from <https://www.aljazeera.com/news/2019/07/worst-floods-years-submerge-bangladesh-villages-190719083053518.html>
- Alam, E. (2019). Importance of long-term earthquake, tsunami and tropical cyclone data for disaster risk reduction in Bangladesh. *Progress in Disaster Science*, 2(10019), 1-9.
- Alam, S.M.N., Begum, S., Chowdhury, E., Chowdhury, Z., Gazi, R., & Khan, M. S. I (Eds.) (2001). *Trafficking of Women and Children in Bangladesh: An overview*. CDDR,B Special Publication No. 111. Dhaka: Centre for Health and Population Research, ICDDR,B.
- Alderson, P. (2000). Children as Researchers: The effects of participation rights on research methodology. P. Christensen and A. James (Eds), *Research with children: Perspectives and practices*, pp. 241–257. London: Falmer Press.
- Alderson, P., & Morrow, V. (2011). *The ethics of research with children and young people: A practical handbook*. London, Thousand Oaks, New Delhi and Singapore: Sage publications Ltd.
- Altaf, A. (2019). *The many hidden faces of extreme poverty: Inclusion and exclusion of extreme poor people in development interventions in Bangladesh, Benin and Ethiopia*. Doctoral dissertation. Amsterdam: University of Amsterdam. Retrieved from <https://pure.uva.nl/ws/files/31376584/Thesis.pdf>

- Amin Md. R., & Sheikh M. R. I. (2011). Trafficking women and children in Bangladesh: A silent tsunami of Bangladesh. *Journal of Economics and Sustainable Development*, 2(4): 202-211.
- Amri, A., Bird, D. K., Ronan, K., & Towers, B. (2016). Disaster risk reduction education in Indonesia: Challenges and recommendations for scaling up. *Nat. Hazards Earth Syst. Sci.*, 17(4), 595-612.
- Anderson, W. A. (2000). Women and Children Facing Disaster. In A. T. Kreimer & M. Arnold (Eds.), *Managing disaster risk in emerging economies*, Pp. 85-90. Washington, D.C.: World Bank.
- Anderson, W. A. (2005). Bringing children into focus on the social science disaster research agenda. *International Journal of Mass Emergencies and Disasters*, 23(3), 159-175.
- Anik, S.S.B. (2019, July 27). Flood death toll reaches 114 in Bangladesh in 17 days. *Dhaka Tribune*. Retrieved from <https://www.dhakatribune.com/bangladesh/2019/07/27/flood-death-toll-reaches-114-in-bangladesh-in-17-day>
- Anzar, U. (2003). *Islamic education: A brief history of madrassas with comments on curricula and current pedagogical practices (draft report)*. Burlington, VT: University of Vermont.
- Aptekar, L., & Boore, J. A. (1990). The emotional effects of disaster on children: A review of the literature. *International Journal of Mental Health*, 19(2), 77-90.
- Archer, E., & Brown, G. T. (2013). Beyond rhetoric: Leveraging learning from New Zealand's assessment tools for teaching and learning for South Africa. *Education as Change*, 17(1), 131-147.
- Armitage, D., Marschke, M., & Plummer, R. (2008). Adaptive co-management and the paradox of learning. *Global environmental change*, 18(1), 86-98.
- Armstrong, M. (1980). *Closely observed children: The diary of a primary classroom*. London: Writers and Readers, in association with Chameleon.
- Asadullah, M. N., & Chaudhury, N. (2016). To madrasahs or not to madrasahs: The question and correlates of enrolment in Islamic schools in Bangladesh. *International Journal of Educational Development*, 49, 55-69.
- Asgary, A., & Halim, A. (2011). Measuring people's preferences for cyclone vulnerability reduction measures in Bangladesh. *Disaster Prevention and Management*, 20(2), 186-198.
- Asian Development Bank (2020). Poverty Data: Bangladesh. Retrieved from <https://www.adb.org/countries/bangladesh/poverty>
- Asian Disaster Reduction Centre (2020). Information on disaster risk reduction of the member countries: Bangladesh. Kobe, Hyogo prefecture: ADRC. Retrieved from

<https://www.adrc.asia/nationinformation.php?NationCode=50&Lang=en&NationNum=13>

- Asselin, M. E. (2003). Insider research: Issues to consider when doing qualitative research in your own setting. *Journal for Nurses in Staff Development*, 19(2), 99-103.
- Attride-Sterling J. (2001). Thematic networks: An analytic tool for qualitative research. *Qualitative Research*, 1(3), 385-405.
- Awal, M. A. (2015). Vulnerability to disaster: Pressure and release model for climate change hazards in Bangladesh. *International Journal of Environmental Monitoring and Protection*, 2(2), 15.
- Back, E., Cameron, C., & Tanner, T. (2009). *Children and disaster risk reduction: Taking stock and moving forward*. Brighton, UK: Children in a Changing Climate Research & UNICEF.
- Badruzzaman, M., & Mian, N. (2015). Right to education in Bangladesh: An appraisal for constitutional guarantee. *Journal of Studies in Social Sciences*, 13(1), 1-34.
- Bairagi, R. (1980). Is income the only constraint on child nutrition in rural Bangladesh?. *Bulletin of the World Health Organization* 58(5) 767-772.
- Bairagi, R. (1986). Food Crisis, nutrition, and female children in rural Bangladesh. *Population and Development Review*, 12(2), 307-315.
- Balen, R., Holroyd, C., Mountain, G., & Wood, B. (2000). Giving children a voice: Methodological and practical implications of research involving children. *Paediatric Nursing*, 12(10), 24.
- Ball, S.J. (1990) Introducing Monsieur Foucault. In S.J. Ball (Ed.), *Foucault and education: Disciplines and knowledge*, pp. 1-8. London: Routledge.
- Bangladesh Bureau of Educational Information and Statistics (BANBASE) (2018a). *List of technical schools*. Dhaka: BANBASE. Retrieved on May 9, 2020 from [https://banbeis.portal.gov.bd/sites/default/files/files/banbeis.portal.gov.bd/npfblock//list\\_Technical.zip](https://banbeis.portal.gov.bd/sites/default/files/files/banbeis.portal.gov.bd/npfblock//list_Technical.zip)
- Bangladesh Bureau of Educational Information and Statistics (BANBASE) (2018b). *List of Madrasha*. Dhaka: BANBASE. Retrieved on May 9, 2020 from [https://banbeis.portal.gov.bd/sites/default/files/files/banbeis.portal.gov.bd/page/5041a53f\\_6265\\_42cf\\_a92d\\_b633516ac9e0/LIST%20OF%20MADRSHA.pdf](https://banbeis.portal.gov.bd/sites/default/files/files/banbeis.portal.gov.bd/page/5041a53f_6265_42cf_a92d_b633516ac9e0/LIST%20OF%20MADRSHA.pdf)
- Bangladesh Bureau of Educational Information and Statistics (BANBEIS) (2018c). *Bangladesh education statistics*. Dhaka: BANBASE.
- Bangladesh Bureau of Statistics (BBS) & United Nations Children's Fund (UNICEF) (2015). *Bangladesh multiple indicator cluster survey 2012-2013, progotir pathay: Final report*. Dhaka: BBS and UNICEF.

- Bangladesh Bureau of Statistics (BBS) (2011). *Population & Housing Census 2011*. Dhaka: Ministry of Planning, Government of Bangladesh.
- Bangladesh Bureau of Statistics (BBS) (2013). *District statistics 2011: Narayanganj*. Dhaka: Ministry of Planning, Government of Bangladesh.
- Bangladesh Bureau of Statistics (BBS) (2015a). *Census of slum areas and floating population 2014*. Dhaka: Ministry of Planning, Government of Bangladesh.
- Bangladesh Bureau of Statistics (BBS) (2015b). *Population and housing census 2011. Community Report: Zila: Dhaka*. Dhaka: Ministry of Planning, Government of the people's republic of Bangladesh.
- Bangladesh Bureau of Statistics (BBS) (2015c). *Population and housing census 2011. Community Report: Narayanganj*. Dhaka: Ministry of Planning, Government of the people's republic of Bangladesh.
- Bangladesh Bureau of Statistics (BBS) (2015d). *Population and housing census 2011. Community Report: Brahmanbaria*. Dhaka: Ministry of Planning, Government of the people's republic of Bangladesh
- Bangladesh Madrasah Education Board (2020). Ministry of Education: Bangladesh Madrasah Education Board, Dhaka. Retrieved from <http://bmeb.ebmeb.gov.bd/>
- Bangladesh Ministry of Education (2010). *National education policy*. Dhaka: Government of Bangladesh.
- Bangladesh National Portal (2020). Dhaka District: At a glance. Retrieve on May 9, 2020 from [www.dhaka.gov.bd/site/view/primary\\_school?page=3&rows=20](http://www.dhaka.gov.bd/site/view/primary_school?page=3&rows=20)
- Bangladesh Technical Education Board (BTEB) (2018). *SSC (Vocational) curriculum regulation, 2013 and syllabus for general subjects of grade nine and ten*. Dhaka: BTEB. Retrieved from <https://drive.google.com/drive/folders/1mLOL3fYt3BYHpeATXfpbsLf4xMvmH6oG>
- Barker, J., & Weller, S. (2003). 'Is it fun?' Developing children centered research methods. *International Journal of Sociology and Social Policy*, 23(1), 33–58.
- Bartlett, S. (2008). The implications of climate change for children in lower-income countries. *Children Youth and Environments*, 18(1), 71-98.
- Bauer, K., Yang, Y. & Austin, S. (2004). "How can we stay healthy when you're throwing all of this in front of us?" Findings from focus groups and interviews in middle schools on environmental influences on nutrition and physical activity. *Health Education and Behavior*, 31(1), 34-46.
- Benadusi, M. (2014). Pedagogies of the unknown: Unpacking 'culture' in disaster risk reduction education. *Journal of Contingencies and Crisis Management*, 22(3), 174-183.

- Bender, K., Thompson, S.J., McManus, H., Lantry, J., and Flynn, P.M. (2007). Capacity for survival: Exploring strengths of homeless street youth. *Child & Youth Care Forum* 36(1), 25-42.
- Benson, L., & Bugge, J. (2007). *Child-led disaster risk reduction: A practical guide- part 1 & 2*. Stockholm: International Save the Children Alliance.
- Berg, B. L. (2001). *Qualitative research methods for the social scientists*. Needham Heights, MA: Allyn & Bacon, Inc.
- Berger, P. & Luckmann, T. (1966). *The social construction of reality: A treatise in the sociology of knowledge*. London: Allen Lane.
- Bern C., Sniezek J., Mathbor G. M., Siddiqi M. S., Ronsmans C., Chowdhury A. M., Choudhury A. E., Islam K., Bennish M., Noji E., et al. (1993). Risk factors for mortality in the Bangladesh cyclone of 1991. *Bulletin of the World Health Organization*, 71(1), 73-8.
- Berry, L., & King, D. (1998). Tropical cyclone awareness and education issues for Far North Queensland School Students: Storm watchers-a cyclone awareness education package for upper primary school children. *Australian Journal of Emergency Management*, 13(3), 25.
- Bhattacharya, S. (2006). The perspectives of madrasa education in Bangladesh. *Jadavpur Journal of International Relations*, 10(1), 224-234.
- Bhattacharya. S. (1948). Durmar (দুর্মর). In *Purbabhash (পূর্বাভাস)*. Reprinted in 1967 as *Sukanta samagra (সুকান্ত সমগ্র): Complete works of Sukanta*, pp.177-178. Kolkata, India: Saraswat Library.
- Bhengu, T. T., & Gounder, R. (2014). School leadership role in creating a learning organisation: Perspectives from the primary school teachers and school management. *International Journal of Educational Sciences*, 7(3), 633-642.
- Bickman, L. (1987). The functions of program theory. *New Directions for Program Evaluation*, 1987(33), 5-18.
- Birckmayer, J. D., & Weiss, C. H. (2000). Theory-based evaluation in practice: What do we learn?. *Evaluation Review*, 24(4), 407-431.
- Black, D. (1982). Children and disaster. *British Medical Journal (Clinical Research Ed.)*, 285(6347), 989.
- Blackmore, C. (2007). What kinds of knowledge, knowing and learning are required for addressing resource dilemmas?: A theoretical overview. *Environmental Science & Policy*, 10(6), 512-525.
- Blackmore, C., Ison, R. & Jiggins, J. (2007). Social learning: An alternative policy instrument for managing in the context of Europe's water. *Environmental Science & Policy*, 10(6), 493-498.

- Blaikie, P., Cannon, T., Davis, I., & Wisner, B (1995). *At risk: Natural hazards, people's vulnerability and disasters*. London and New York: Routledge.
- Bloch, D. A., Silber, E., & Perry, S. E. (1956). Some factors in the emotional reaction of children to disaster. *Am J Psychiatry*, 113(5), 416-422.
- Bloom, B. S. (Ed.) (1956). *Taxonomy of educational objectives: Classification of Educational goals. Handbook 1: Cognitive domain*. London: Longmans.
- Blumer, H. (1969). *Symbolic interactionism: Perspective and method*. Berkley: University of California Press.
- Bodley, J. H. (2008). *Anthropology and contemporary human problems (Fifth edition)*. Plymouth, UK: Altamira Press.
- Bolin, R. C., & Bolton, P. A. (1986). *Race, religion, and ethnicity in disaster recovery*. Colorado: Institute of Behavioral Science, University of Colorado.
- Braa, K., & Sørgaard, P. (1997). Stages and diversity in the implementation of World Wide Web and document technology. In T. McMaster, E. Mumford, E.B. Swanson, B. Warboys & D. Wastell (Eds.), *Facilitating technology transfer through partnership*, pp. 355-370. Boston, MA: Springer.
- Bradbury-Jones, C., & Taylor, J. (2015). Engaging with children as co-researchers: Challenges, counter- challenges and solutions. *International Journal of Social Research Methodology*, 18(2), 161-173.
- Braun V., & Clark V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101.
- Brett, E. A. (2003). Participation and accountability in development management. *The Journal of Development Studies*, 40(2), 1-29.
- Brewer, J., & Hunter, A. (1994). *Multimethod research: A synthesis of styles. Sage Library of Social Research Series, Vol. 175*. Newbury Park: Sage.
- Brooker, L. (2001). Interviewing children. In G. M. Naughton, S. A. Rolfe & I. Siraj-Blatchford (Eds.), *Doing early childhood research: International perspectives on theory and practice*, pp. 162-177. Crow's Nest, NSW: Allen & Unwin.
- Bryman, A. (1988). *Quantity and quality in social research*. London: Routledge.
- Bryman, A. (2004). *Social research methods (Second edition)*. Oxford: Oxford University Press.
- Bureau of Non-formal Education (2009). *Mapping of non-formal education activities in Bangladesh*. Dhaka: Ministry of Primary and Mass Education, Government of Bangladesh.

- Burgess-Limerick, T., & Burgess-Limerick, R. (1998). Conversational interviews and multiple-case research in psychology. *Australian Journal of Psychology*, 50(2), 63-70.
- Burke, J. D., Borus, J. F., Burns, B. J., Millstein, K. H., & Beasley, M. C. (1982). Changes in children's behavior after a natural disaster. *Am J Psychiatry*, 139(8), 1010–1014.
- Burke, J. D., Moccia, P., Borus, J. F., & Burns, B. J. (1986). Emotional distress in fifth-grade children ten months after a natural disaster. *Journal of the American Academy of Child Psychiatry*, 25(4), 536-541.
- Burrell, G., & Morgan, G. (1979). *Sociological paradigms and organizational analysis: Elements of the sociology of corporate life*. Portsmouth: Heinemann.
- Bush, T. (2013). Instructional leadership and leadership for learning: Global and South African perspectives. *Education as Change*, 17(sup1), S5-S20.
- Cadag, J. R. D. & Gaillard, J. C. (2012). Integrating knowledge and actions in disaster risk reduction: The contribution of participatory mapping. *Area*, 44(1), 100-109.
- Cannell, C. F., & Kahn, R. L. (1968). Interviewing. In G. Lindzey & E. Aronson (Eds.), *The handbook of social psychology*, Vol. 2 (Second edition), pp. 526–595. Reading, MA: Addison-Wesley.
- Cannon, T. (2008). Reducing people's vulnerability to natural hazards communities and resilience. *WIDER Research Paper*, No. 2008/34. Helsinki: UNU-WIDER.
- Carroll, L. (1865). *Alice's Adventures in Wonderland*. London: MacMillan Publishing Co.
- Centre for Policy Dialogue. (2001). Policy brief on education policy: CPD task force report, Dhaka: Centre for Policy Dialogue.
- Chen, H. T., & Rossi, P. H. (1983). Evaluating with sense: The theory-driven approach. *Evaluation Review*, 7(3), 283-302.
- Chew, M. (2020). *Adapting photovoice to visualise and influence environmental behaviour across Australia, Bangladesh, and China*. Doctoral dissertation. Melbourne: Monash University.
- Chompa, G. (2017). *Curriculum of Madrasahs and its nexus with unemployment: Problems and possibilities*. Student's research assignment. Dhaka: Department of Political Science, University of Dhaka.
- Chowdhury, A. M. R., Bhuyia, A. U., Choudhury, A. Y., & Sen, R. (1993). The Bangladesh cyclone of 1991: Why so many people died. *Disasters*, 17(4), 291-304.
- Chowdhury, A. M. R., Nath, S. R., & Choudhury, R. K. (2003). Equity gains in Bangladesh primary education. *International Review of Education*, 49(6), 601-619.

- Christensen, P. H. (1998). Difference and similarity: How children's competence is constituted in illness and its treatment. In I. Hutchby and J. Moran-Ellis (Eds), *Children and social competence: Arenas of action*, pp.187-201. London: Falmer Press.
- Christensen, P., & James, A. (2000). Researching children and childhood: Cultures of communication. In P. Christensen & A. James (Eds), *Research with children*, pp.1-8. New York: Falmer Press.
- Christensen, P., & James, A. (Eds.). (2008). *Research with children: Perspectives and practices*. Abingdon and New York: Routledge.
- Christensen, P., & Prout, A. (2002). Working with ethical symmetry in social research with children. *Childhood*, 9(4), 477-497.
- Ciborra, C. U. (1998). Crisis and foundations: An inquiry into the nature and limits of models and methods in the information systems discipline. *The Journal of Strategic Information Systems*, 7(1), 5-16.
- Clark, A., & Moss, P. (2001). *Listening to young children*. London: National Children's Bureau and Rowntree Foundation.
- Coad, J., & Evans, R. (2008). Reflections on practical approaches to involving children and young people in the data analysis process. *Children & Society*, 22(1), 41-52.
- Cohen, J. H. (2000). Problems in the field: Participant observation and the assumption of neutrality. *Field Methods*, 12(4), 316-333.
- Conolly, A. (2008). Challenges of generating qualitative data with socially excluded young people. *International Journal of Social Research Methodology*, 11(3), 201-214.
- Cornwall, A., Lucas, H., & Pasteur, K. (2000). Introduction: Accountability through participation: Developing workable partnership models in the health sector. *IDS Bulletin*. 31(1), 1-13.
- Corsaro, W. A. (1997). *The sociology of childhood*. Thousand Oaks, CA: Pine Forge Press.
- Coyne, I. T. (1998). Researching children: Some methodological and ethical considerations. *Journal of Clinical Nursing*, 7(5), 409-416.
- CRED (2018). *Natural Disasters 2017*. Brussels: CRED.
- Creed, L. (Lyricist) & Masser, M. (Composer) (1977). *The greatest love of all* (from the movie 'The Greatest', Vocal: Benson, G.). London: EMI Golden Horizon Music Corporation/EMI Golden Torch Music Corporation.
- Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*. Crow's Nest, NSW: Allen & Unwin.
- Cummings, F. H. (1997). Role of participation in the evaluation and implementation of development projects. *Knowledge and Policy*, 10(1-2), 24-33.

- Cunningham, J.B. (1983). Gathering data in a changing organisation. *Human Relations*, 36(5), 403-420.
- Curie, E., (1937). *Madame Curie: A Biography* (Translated by Sheean, V.). Garden City, New York: Doubleday, Doran & Company.
- Daines, N. (2018, May 8). The Sundarbans- home of the man-eating Royal Bengal Tiger. *Nicholas Daines's Blog*. Retrieved from <https://www.nicholasdaines.com/blog/the-sundarbans-home-of-the-man-eating-royal-bengal-tiger>
- Darbyshire, P., MacDougall, C., & Schiller, W. (2005). Multiple methods in qualitative research with children: More insight or just more?. *Qualitative Research*, 5(4), 417-436.
- Davis, J. M. (1998). Understanding the meanings of children: A reflexive process. *Children & Society*, 12, 325-335.
- de Feiter, L., Vonk, H., & van den Akker, J. (1995). *Towards more effective science teacher development in Southern Africa*. Amsterdam: VU University Press.
- Delanty, G. (2005). *Social science: Philosophical and methodological foundations*. Berkshire and New York: Open University Press.
- Delica, Z. G. (1998). Balancing vulnerability and capacity: Women and children in the Philippines. In E. Enarson & B. H. Morrow (Eds.), *The gendered terrain of disaster: Through women's eyes*, pp. 109-113. Westport CT: Praeger Press.
- Denzin, N. K. (1972). The research act. In G. Manis & B. N. Meltzer (Eds.), *Symbolic interaction: A reader in social psychology (Second edition)*, pp. 897-922. Needham Heights, MA: Allyn & Bacon, Inc.
- Derry, S. J. (1999). A fish called peer learning: Searching for common themes. *Cognitive Perspectives on Peer Learning*, 9(1), 197-211.
- DeWalt, K. M., DeWalt, B. R., & Wayland C. B. (1998). Participant observation. In H. R. Bernard (Eds), *Handbook of methods in cultural anthropology*, pp. 259-99. Walnut Creek, CA: Alta Mira.
- Dewey, J. (1929). *The quest for certainty*. New York: Minton, Balch and Company.
- Diduck, A. (2010). The learning dimension of adaptive capacity: Untangling the multi-level connections. In D. Armitage & R. Plummer (Eds.), *Adaptive capacity and environmental governance*, pp. 199-221. Berlin: Springer-Verlag.
- Directorate of Secondary and Higher Education (DSHE), Bangladesh (2020). History: Directorate of Secondary and Higher Education. Dhaka: DSHE. Retrieved March 27, 2020, from <http://www.dshe.gov.bd/site/page/b248fb28-7b6d-48b2-8695-fcc837e12125/nolink/%E0%A6%AC%E0%A6%BF%E0%A6%B6%E0%A7%87%E0%A6%B7->

[%E0%A6%B6%E0%A6%BF%E0%A6%95%E0%A7%8D%E0%A6%B7%E0%A6%BE](#)

District Primary Education Office (DPEO) Brahmanbaria (2020). At a glance. Retrieve on May 9, 2020 from <http://dpeo.brahmanbaria.gov.bd/site/page/1ba08544-1b0e-4380-8616-68aaa0f54195/%E0%A6%8F%E0%A6%95%20%E0%A6%A8%E0%A6%9C%E0%A6%B0%E0%A7%87>

District Primary Education Office (DPEO) Narayanganj (2020). At a glance. Retrieve on May 9, 2020 from <http://dpe.narayanganj.gov.bd/site/page/318c8b08-5cd2-454f-b990-d0bad4e5ac56/%E0%A6%8F%E0%A6%95%20%E0%A6%A8%E0%A6%9C%E0%A6%B0%E0%A7%87>

Djalante, R., & Thomalla, F. (2012). Disaster risk reduction and climate change adaptation in Indonesia: Institutional challenges and opportunities for integration. *International Journal of Disaster Resilience in the Built Environment*, 3(2), 166-180.

Dominey-Howes, D., Gorman-Murray, A., & McKinnon, S. (2014). Queering disasters: On the need to account for LGBTI experiences in natural disaster contexts. *Gender, Place & Culture: A Journal of Feminist Geography*, 21(7), 905-918.

Dudovskiy, J. (2016). *The ultimate guide to writing a dissertation in business studies: A step-by-step assistance* [E-reader]. Published by the Research-methodology.net.

Dufty, N. (2009). Natural hazards education in Australian schools: How can we make it more effective?. *The Australian Journal of Emergency Management*, 24(2), 13-16.

Dufty, N. (2014). A review of progress in the integration of disaster risk reduction into Australian school curricula programs and materials. *Input paper prepared for the Global Assessment Report on Disaster Risk Reduction 2015*. Geneva: UNISDR & GAR.

Dwyer, S. C., & Buckle, J. L. (2009). The space between: On being an insider-outsider in qualitative research. *International Journal of Qualitative Methods*, 8(1), 54-63.

Easterby-Smith, M., Thorpe, R. & Lowe, A. (2002). *Management Research: An introduction (Second edition)*. London: Sage Publications Limited.

Ebrahim, A. (2002). Information struggles: The role of information in the reproduction of NGO-funder relationships. *Nonprofit and Voluntary Sector Quarterly*, 31(1), 84-114.

Ebrahim, A. (2005). Accountability myopia: Losing sight of organizational learning. *Nonprofit and Voluntary Sector Quarterly*, 34, 56-87

Ebrahim, A. (2010). The many faces of non-profit accountability. *Working paper, 10-069*. Boston: Harvard Business School.

Ebrahim, A. (2016). The many faces of nonprofit accountability. In Renz D. O. & Herman R. D. (Eds.), *The Jossey-Bass handbook of nonprofit leadership and management (Fourth edition)*, 102-123. New Jersey: John Wiley & Sons.

- Eder, D. & Fingerson, L. (2003). Interviewing children and adolescents. In J. A. Holstein & F. J. Gubrium (Eds.), *Inside interviewing: New lenses, new concerns*, pp.33–55. London: Sage.
- Education Board Computer Center (2020). Ministry of Education: Education Board. Retrieved from <http://www.educationboard.gov.bd/computer/>
- Edwards, M. & Hulme, D. (1995). NGO performance and accountability in the post-cold war world. *Journal of International Development*, 7(6), 849-856.
- Einarsdóttir, J. (2003). When the bell rings we have to go inside: Preschool children's views on the primary school. *European Early Childhood Educational Research Journal. Themed Monograph Series, 1*, 35–50.
- Einarsdóttir, J. (2005a). Mér finnst það bara svo skemmtilegt. *Þróunarverkefni í leikskólanum Hofi um þátttöku barna í mati á leikskólastarfi* [I think it is so much fun: A project in the Hof Playschool about children's participation of assessing quality of playschool education]. Reykjavík: Rannsóknarstofnun Kennaraháskóla Íslands.
- Einarsdóttir, J. (2005b). We can decide what to play! Children's perception of quality in an Icelandic playschool. *Early Education and Development*, 16(4), 469–488.
- Einarsdóttir, J. (2007). Research with children: Methodological and ethical challenges. *European Early Childhood Education Research Journal*, 15(2), 197-211.
- Elangovan, A. R., & Kasi, S. (2015). Psychosocial disaster preparedness for school children by teachers. *International Journal of Disaster Risk Reduction*, 12, 119-124.
- Engeström, Y. & Kerosuo, H. (2007). From workplace learning to inter-organizational learning and back: The contribution of activity theory. *Journal of Workplace Learning*, 19(6), 336-342.
- Engeström, Y. (1996). Developmental work research as educational research: Looking ten years back and into the zone of proximal development. *Nordisk Pedagogik*, 16(3), 131-143.
- Engeström, Y. (1999). Activity theory and individual and social transformation. In Y. Engeström, R. Miettinen & R. L. Punamäki (Eds), *Perspectives on activity theory*, pp. 19-30. Cambridge: Cambridge University Press.
- Engeström, Y. (2001). Expansive learning at work: Toward an activity theoretical reconceptualization. *Journal of education and work*, 14(1), 133-156.
- Engeström, Y. (1987). *Learning by expanding: An activity theoretical approach to developmental research*. Helsinki: Orienta-Konsultit.
- Ernest, P. (1999). Social constructivism as a philosophy of mathematics. *Zentralblatt für Didaktik der Mathematik*, 99 (2), 71–73.

- Etherington, K. (2004). *Becoming a reflexive researcher: Using our selves in research*. London and Philadelphia: Jessica Kingsley Publishers.
- Evans, P., & Fuller, M. (1996). Hello. Who am I speaking to? Communicating with pre-school children in educational research settings. *Early Years*, 17(1), 17–20.
- Evered, R., & Louis, M. R. (1981). Alternative perspectives in the organizational sciences: “Inquiry from the inside” and “inquiry from the outside”. *Academy of Management Review*, 6(3), 385-395.
- Fargas-Malet, M., McSherry, D., Larkin, E., & Robinson, C. (2010). Research with children: Methodological issues and innovative techniques. *Journal of Early Childhood Research*, 8(2), 175-192.
- Findlay, J. N. (1970). *Axiological ethics*. London and Basingstoke: Macmillan and Co. Ltd.
- Finnis, K., Standring, S., Johnston, D., & Ronan, K. (2004). Children's understanding of natural hazards in Christchurch, New Zealand. *The Australian Journal of Emergency Management*, 19(2), 11.
- Fitz-Gibbon, C. T., & Morris, L. L. (1996). Theory-based evaluation. *Evaluation Practice*, 17(2), 177-184.
- Flewitt, R. (2005). Conducting research with young children: Some ethical considerations. *Early Child Development and Care*, 175(6), 553–566.
- Floodlist News (2019, July 27). Bangladesh – over 5 million affected by monsoon floods. *Floodlist*. Retrieved from <http://floodlist.com/asia/bangladesh-monsoon-floods-july-2019>
- Fontana, A., & Frey, J. H. (2005). The interview: From neutral stance to political involvement. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research*, pp. 695-727. Thousand Oaks: Sage Publications.
- Fothergill, A. & Peek, L. (2006). Surviving catastrophe: A study of children in Hurricane Katrina. In Natural Hazards Center (Ed.), *Learning from catastrophe: Quick response research in the wake of Hurricane Katrina*, pp. 97-12930. Boulder: Institute of Behavioral Science, University of Colorado.
- Fothergill, A., & Peek, L. (2015). *Children of Katrina*. Austin, TX: University of Texas Press.
- Foucault, M. (1971). Orders of discourse. *Social Science Information*, 10(2), 7-30.
- Foucault, M. (1972). *The archaeology of knowledge and the discourse on language* (Translated by. Smith, A. M. S.). New York: Pantheon Books.
- Fraser, S., Lewis, V., Ding, S., Kellett, M., & Robinson, C. (Eds) (2004). *Doing research with children and young people*. Thousands Okas: Sage Publications.
- Freire, P. (1968). *Pedagogy of the oppressed*. New York: Seabury Press.

- Funnell, S. C. (2000). Developing and using a program theory matrix for program evaluation and performance monitoring. *New Directions for Evaluation*, 2000(87), 91-101.
- Gaillard, J. C., & Mercer, J. (2013). From knowledge to action: Bridging gaps in disaster risk reduction. *Progress in Human Geography*, 37(1), 93-114.
- Gaillard, J. C., Gorman-Murray, A., & Fordham, M. (2017a). Sexual and gender minorities in disaster. *Gender, Place & Culture: A Journal of Feminist Geography*, 24 (1), 18-26.
- Gaillard, J. C., Sanz, K., Balgos, B. C., Dalisay, S. N. M., Gorman-Murray, A., Smith, F., & Toelupe, V. A. (2017b). Beyond men and women: A critical perspective on gender and disaster. *Disasters*, 41(3), 429-447.
- Gaillard, J.C. (2011). *People's Response to Disasters: Vulnerability, Capacities and Resilience in Philippine Context*. Angeles City: Center for Kapampangan Studies.
- Galappatti, A., & Richardson, S. (2016). Linking mental health and psychosocial support and disaster risk reduction: Applying a wellbeing lens to disaster risk reduction. *Intervention*, 14(3), 223-231.
- Galilei, G. (1632). *Dialogo sopra i due massimi sistemi del mondo- Tolemaico, e Copernicano*. Florence: Giovanni Battista Landini. Translated by Drake, S. in Galileo (1970), *Dialogue concerning the two chief world systems-Ptolemaic & Copernican*. Berkeley, Los Angeles: Univ. California Press.
- Galliers, R. D. (1992). Choosing information systems research approaches. In R. D. Galliers (Ed.), *Information systems research: Issues, methods and practical guidelines*, pp.144-162. Oxford: Blackwell Scientific Publications.
- Garai, J. (2016). Gender specific vulnerability in climate change and possible sustainable livelihoods of coastal people: A case from Bangladesh. *Revista de Gestão Costeira Integrada- Journal of Integrated Coastal Zone Management*, 16(1), 79-88.
- Geertz, C. (1973). *The interpretation of cultures: Selected essays*. New York: Basic Books, Inc.
- Gergen K.J. (1985). Social constructionist inquiry: Context and Implications. In: K.J. Gergen and K.E. Davis (Eds), *The social construction of the person. Springer Series in Social Psychology*, pp. 3-18. New York: Springer.
- Gergen, K. J. (1991). *The saturated self: Dilemmas of identity in contemporary life (Vol. 166)*. New York: Basic books.
- Gibran, K. (1923). *The Prophet*. New York: AA Knopf (Reprint 1985).
- Gilchrist, V. J., & Williams, R.L. (1992). Key informant interviews. In B.F. Crabtree, W.L. Miller (Eds.), *Doing qualitative research (Second edition)*, pp. 71-88. Thousand Oaks, CA: Sage Publications.

- Gollop, M. M. (2000). Interviewing children: A research perspective. In A. B. Smith, N. J. Taylor & M. M. Gollop (Eds.), *Children's voices: Research, policy and practice*, pp. 18–37. Auckland: Pearson Education.
- Gordon R. & Wraith R. (1993). Responses of children and adolescents to disaster. In J.P. Wilson & B. Raphael (eds), *International handbook of traumatic stress syndromes: The plenum series on stress and coping*. Boston, MA: Springer.
- Gow, D. D., & Morss, E. R. (1988). The notorious nine: Critical problems in project implementation. *World development*, 16(12), 1399-1418.
- Graue, E. M. & Walsh, D. J. (1998). *Studying children in context: Theories, methods and ethics*. Thousand Oaks, CA: Sage.
- Gredler, M. E. (1997). *Learning and instruction: Theory into practice (Third edition)*. Upper Saddle River, NJ: Prentice-Hall.
- Grifford, B. R., & Enyedy, N. D. (1999). Activity centered design: Towards a theoretical framework for CSCL. In C. Hoadley & J. Roschelle (Eds.), *The Proceedings of the Third International Conference on Computer Support for Collaborative Learning (CSCL 1999)*. Palo Alto, CA: Stanford University.
- Groundwater-Smith, S., Dockett, S. & Bottrell, D. (2015). Ethical questions in relation to participatory research with children and young people. In S. Groundwater-Smith, S. Dockett & D. Bottrell (Eds.), *Participatory research with children and young people*, pp. 37-54. London: SAGE Publications Ltd.
- Guba, E. & Lincoln, Y.S. (2005). Paradigmatic controversies, contradictions, and emerging 332 confluences. In N. Denzin & Y. Lincoln (Eds.), *Handbook of qualitative research*, pp. 191- 215. Thousand Oaks: Sage.
- Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In M. K. Denzin & Y.S. Lincoln (Eds.), *Handbook of qualitative research*, pp.105-117. Thousand Oaks: Sage.
- Guba, E.G. (1981), Criteria for assessing the trustworthiness of naturalistic inquiries. *Educational Communication and Technology Journal* 29, 75–91.
- Guha-Sapir, D., Hoyois, P., & Below, R. (2013). *Annual disaster statistical review 2012: The numbers and trends*. Brussels: CRED.
- Guha-Sapir, D., Hoyois, P., & Below, R. (2014). *Annual disaster statistical review 2013: The numbers and trends*. Brussels: CRED.
- Guha-Sapir, D., Hoyois, P., & Below, R. (2015). *Annual disaster statistical review 2014: The numbers and trends*. Brussels: CRED.
- Guha-Sapir, D., Hoyois, P., & Below, R. (2016). *Annual disaster statistical review 2015: The numbers and trends*. Brussels: CRED.

- Guha-Sapir, D., Hoyois, P., Wallemacq P., & Below, R. (2017). *Annual disaster statistical review 2016: The numbers and trends*. Brussels: CRED.
- Guha-Sapir, D., Vos, F., Below, R., & Ponserre, S. (2011). *Annual disaster statistical review 2010*. Brussels: CRED.
- Guha-Sapir, D., Vos, F., Below, R., & Ponserre, S. (2012). *Annual disaster statistical review 2011: The numbers and trends*. Brussels: CRED.
- Gustafson, T. S. (2009). *Empowering children to lead change: Incorporating preparedness curricula in the K–12 educational system*. Master's dissertation. Monterey, California: Naval Postgraduate School.
- Habiba, U., Abedin, M. A. & Shaw, R. (2013). Disaster education in Bangladesh: Opportunities and challenges. In R. Shaw, F. Mallick & A. Islam (Eds.), *Disaster risk reduction approaches in Bangladesh*, pp. 307-330. Tokyo: Springer.
- Hamid, O.M., & Rahman, A. (2019). Language in education policy in Bangladesh: A neoliberal turn?. In A. Kirkpatrick & A. J. Liddicoat (Eds.), *The Routledge international handbook of language education policy in Asia*, pp. 382-398. London: Routledge.
- Hamlyn, D. (1967). History of epistemology. In P. Edwards (Ed.), *The encyclopedia of philosophy (Vol. 3)*, pp. 8-38. New York: Macmillan.
- Hammersley, M., & Atkinson, P. (1983). *Ethnography: Principles in practice (Second edition)*. London: Routledge.
- Haque, C. E. (1997). *Hazards in a fickle environment: Bangladesh*. Berlin: Kluwer Academic Publishers.
- Harcourt, D., & Quennerstedt, A. (2014). Ethical guardrails when children participate in research: Risk and practice in Sweden and Australia. *SAGE Open*, 2014(July-September), 1-8.
- Hardman, C. (1973). Can there be an anthropology of children? *Journal of the Anthropological Society Oxford*, 4(1), 85-99.
- Harkema, S. J., & Schout, H. (2008). Incorporating student-centred learning in innovation and entrepreneurship education. *European Journal of Education*, 43(4), 513-526.
- Hart, R. A. (1997). *Children's participation: The theory and practice of involving young citizens in community development and environmental care*. New York: UNICEF.
- Hartmann, B., & Boyce, J. K. (1979). *Needless hunger: Voices from a Bangladesh village*. Oakland, California: Food First Books.
- Hartmann, B., & Boyce, J. K. (1983). *A quiet violence: View from a Bangladesh village*. London: Zed Books Ltd.

- Hashim, N. H., & Jones, M. L. (2007, 3-5 September). Activity Theory: A framework for qualitative analysis [Paper presentation]. 4<sup>th</sup> International Qualitative Research Convention (QRC), PJ Hilton, Malaysia.
- Hayes, J. (2016). *Children's voices: An evaluation of how Save the Children Australia is engaging children in child-focused development initiatives*. Dhaka: Save The Children.
- Haynes, K., Lassa, J. & Towers, B. (2010a). *Child centred disaster risk reduction and climate change adaptation- roles of gender and culture in Indonesia*. Brighton: Children in a Changing Climate.
- Haynes, K., Lim-Mangada, L., Akhmady, S. & Roquino, E. (2010b). *Developing innovative participatory tools to promote child and youth-centered disaster risk reduction*. Plan Surrey: International.
- Hemingway, L., & Priestly, M. (2006). Natural hazards, human vulnerability and disabling societies: A disaster for disabled people? *The Review of Disability Studies*, 2(3), 57–67.
- Hennessey, E. & Heary, C. (2005). Exploring children's views through focus groups. In S. Greene & D. Hogan (Eds.), *Researching children's experience*, pp. 236-252. London: Sage.
- Heron, J. (1996). *Co-operative inquiry: Research into the human condition*. London, Thousand Oaks and New Delhi: Sage Publications.
- Hill, M. (2005). Ethical considerations in researching children's experiences. In S. Greene & D. Hogan (Eds.), *Researching children's experience*, pp. 61–86. Thousand Oaks: Sage.
- Höfler, M. (2014). Psychological resilience building in disaster risk reduction: Contributions from adult education. *International Journal of Disaster Risk Science*, 5(1), 33-40.
- Holly, M. L., & Altrichter, H. (2011). Research diaries. In B. Smoeth & C. Lewin (Eds.), *Theory and methods in social research (Second edition)*, pp. 43-52. Los Angeles, London, New Delhi, Singapore and Washington D.C.: Sage Publications.
- Holt, G. R., & Morris, A. W. (1993). Activity theory and the analysis of organizations. *Human Organization*, 97-109.
- Holt, J. (1967). *How children learn*. New York: Pitman
- Horner, S. (2000). Using focus group methods with middle school children. *Research in Nursing and Health*, 23(6), 510-517.
- Hossain, A. (2017). The paradox of recognition: Hijra, third gender and sexual rights in Bangladesh. *Culture, Health & Sexuality*, 19(12), 1418-1431.
- Hossain, A., & Zeitlyn, B. (2010). Poverty, Equity and Access to Education in Bangladesh. *CREATE Pathways to Access, Research Monograph No. 51*. Sussex, UK: The Consortium for Research on Educational Access, Transitions & Equity.

- Hossain, M. Z. (1989). *Riverbank erosion and population displacement: A study of the Serajganj Urban Squatters*. Master's dissertation. Winnipeg: University of Manitoba.
- Houston J. B. (2012). Public disaster mental/behavioral health communication: Intervention across disaster phases. *Journal of Emergency Management*, 10(4), 283–292.
- Hunkins, F. P., & Ornstein, A. C. (2016). *Curriculum: Foundations, principles, and issues (Seventh edition)*. London: Pearson Education.
- Hunleth, J. (2011). Beyond on or with: Questioning power dynamics and knowledge production in 'child-oriented' research methodology. *Childhood*, 18(1), 81-93.
- Huq, S.M.I., & Shoaib, J.U.M. (2013). *The soils of Bangladesh. World soils book series 1. New York London: Springer Science + Business media Dordrecht*.
- International Federation of Red Cross (IFRC) and Red Crescent Societies (RCS) (2018). *World disaster report 2018: Leaving no one behind*. Geneva, Switzerland: IFRC and RCS.
- International Monetary Fund (IMF) (2013). *Bangladesh: Poverty reduction strategy paper*. Washington, D.C.: IMF.
- Ison, R., Röling, N., & Watson, D. (2007). Challenges to science and society in the sustainable management and use of water: Investigating the role of social learning. *Environmental Science & Policy*, 10(6), 499-511.
- Izadkhah, Y. O., & Hosseini, M. (2005). Towards resilient communities in developing countries through education of children for disaster preparedness. *International Journal of Emergency Management*, 2(3), 138-148.
- James, A., & James, A.L. (2004). *Constructing childhood: Theory, policy and social practice*. New York: Pallgrave Macmillan.
- James, A., & Prout, A. (1990) (Eds.). *Constructing and reconstructing childhood: Contemporary issues in the sociological study of childhood*. London: Falmer press.
- James, A., Jenks, C. & Prout, A. (1998). *Theorizing childhood*. Cambridge: Polity Press.
- Januzzi, F., & Peach, J. T. (1980). *Agrarian Structure of Bangladesh: An impediment to development. Westview special studies on South and Southeast Asia (First edition)*. Boulder, CO: Westview Press.
- Johnson, V. (1996). Starting a Dialogue: Children's participation. *Participatory Learning and Action Notes*, 25, 3-16. London: International Institute for Environment and Development.
- Johnson, V. A., Johnston, D. M., Ronan, K. R., & Peace, R. (2014a). Evaluating children's learning of adaptive response capacities from ShakeOut, an earthquake and tsunami drill in two Washington State school districts. *Journal of Homeland Security & Emergency Management*, 11(3), 347–373.

- Johnson, V. A., Ronan, K. R., Johnston, D. M., & Peace, R. (2016). Improving the impact and implementation of disaster education: Programs for children through theory-based evaluation. *Risk analysis*, 36(11), 2120-2135.
- Johnson, V.A., Ronan, K.R., Johnston, D.M. & Peace, R. (2014b). Evaluations of disaster education programs for children: A methodological review. *International Journal of Disaster Risk Reduction*, 9, 107-123.
- Johnson, V.A., Ronan, K.R., Johnston, D.M. & Peace, R. (2014c). Implementing disaster preparedness education in New Zealand primary schools. *Disaster Prevention and Management*, 23(4), 370-380.
- Jonassen, D. H., & Rohrer-Murphy, L. (1999). Activity theory as a framework for designing constructivist learning environments. *Educational Technology Research and Development*, 47(1), 61-79.
- Jones, L. (2008). Responding to the needs of children in crisis. *International Review of Psychiatry*, 20(3), 291-303.
- Jorgensen, D. L. (1989). *Participant observation: A methodology for human studies. Applied Social Research Methods Series, Vol. 15*. Newbury Park, London and New Delhi: Sage Publications, Inc.
- Kabir, R., Khan, H. T., Ball, E., & Caldwell, K. (2016). Climate change impact: The experience of the coastal areas of Bangladesh affected by Cyclones Sidr and Aila. *Journal of Environmental and Public Health*, 2016.
- Kagawa, F., & Selby, D. (2013). *Enhancing child-centered disaster risk reduction for safe schools: Insights from Cambodia, China and Indonesia*. Bangkok: Plan Asia Regional Office.
- Kagawa, F., & Selby, D. (2014). Disaster risk reduction in the school curriculum: The present and potential role of development agencies and the implications for the Hyogo framework for action 2005-2015 successor. *Input paper prepared for the Global Assessment Report on Disaster Risk Reduction 2015*. Geneva: UNISDR & GAR.
- Kamal, A. S. M. (2013). Earthquake risk and reduction approaches in Bangladesh. In R. Shaw, F. Mallick & A. Islam (Eds.), *Disaster risk reduction approaches in Bangladesh*, pp. 103-130. Tokyo: Springer.
- Kanuha, V. K. (2000). "Being" native versus "going native": Conducting social work research as an insider. *Social Work*, 45(5), 439-447.
- Karim, M. A. (2018). Some notes on Madrasah education in Bangladesh: A historical description. *International Journal of Islamic Studies and Humanities*, 1(1), 1-8.
- Karnieli-Miller, O., Strier, R., & Pessach, L. (2009). Power relations in qualitative research. *Qualitative Health Research*, 19(2), 279-289.

- Kellehear, A. (1993). *The unobtrusive researcher: A guide to methods*. Crow's Nest, NSW: Allen & Unwin.
- Kellett, M. (2010). Small shoes, big steps! Empowering children as active researchers. *American Journal of Community Psychology*, 46(1-2), 195-203.
- Kellett, M. (2011). Researching with and for children and young people. *Background Briefing Series, no. 5*. Gold Coast: Centre for Children and Young People, Southern Cross University.
- Kellett, M., Forrest, R., Dent, N., & Ward, S. (2004). 'Just teach us the skills please, we'll do the rest': Empowering ten-year-olds as active researchers. *Children & Society*, 18(5), 329-343.
- Kelman, H. C. (1972). The rights of the subject in social research: An analysis in terms of relative power and legitimacy. *American Psychologist*, 27(11), 989.
- Kemmis, S. & McTaggart, R. (2008). Participatory Action Research. Communicative action and the public sphere. In Denzin, NK & Lincoln, YS (ed.). *Strategies of Qualitative Inquiry (Third edition)*, pp. 223-330. California: Sage Publications, Inc.
- Khan, I. N. (2015). *A study on co-ed school versus single gender school: Does single gender schools are good for education?* Student's research assignment. Dhaka: University of Liberal Arts.
- Khan, S. I., Hussain, M. I., Parveen, S., Bhuiyan, M. I., Gourab, G., Sarker, G. F., Arafat, S.M., & Sikder, J. (2009). Living on the extreme margin: Social exclusion of the transgender population (hijra) in Bangladesh. *Journal of Health, Population, and Nutrition*, 27(4), 441.
- Khatun, A., Rahman, S. S., Rahman, H., & Hossain, S. (2013). A cross sectional study on prevalence of diarrhoeal disease and nutritional status among children under 5-years of age in Kushtia. *Science Journal of Public Health*. 1(2): 56-61.
- Kilby, P. (2006). Accountability for empowerment: Dilemmas facing non-governmental organizations. *World Development*, 34, 951-963.
- Kim, B. (2010). Social constructivism. In M. Orey (Ed.), *Emerging perspectives on learning, teaching and technology*, pp. 55-61. Athens, GA: Global Text.
- Kim, C. Y. (2016). Why research 'by' children? Rethinking the assumptions underlying the facilitation of children as researchers. *Children & Society*, 30(3), 230-240.
- Kitzinger, J. (1994). The methodology of focus groups: The importance of interaction between research participants. *Sociology of Health & Illness*, 16(1), 103-121.
- Kitzinger, J. (1995). Qualitative research: Introducing focus groups. *British Medical Journal*, 311(7000), 299.

- Klein, H. K., & Myers, M. D. (1999). A set of principles for conducting and evaluating interpretive field studies in information systems. *MIS Quarterly*, 67-93.
- Knorr-Cetina, K. (1981). *The manufacture of knowledge: An essay on the constructivist and contextual nature of science*. Oxford: Pergamon.
- Korczak, J. (1929). *Prawo dziecka do szacunku*. Warszawa, Polska: Mortkowicz.
- Krasny, M. E., & Roth, W. M. (2010). Environmental education for social–ecological system resilience: A perspective from activity theory. *Environmental Education Research*, 16(5-6), 545-558.
- Krasny, M. E., & Tidball, K. G. (2009). Applying a resilience systems framework to urban environmental education. *Environmental Education Research*, 15(4), 465-482.
- Krasny, M. E., Tidball, K. G., & Sriskandarajah, N. (2009). Education and resilience: Social and situated learning among university and secondary students. *Ecology and Society*, 14(2).
- Krueger, R. A., & Casey, M. A. (2001). Designing and conducting focus group interviews. In R. A. Krueger, M. A. Casey, J. Donner, S. Kirsch & J. N. Maack, *Social analysis: Selected tools and techniques. Social Development Papers No. 36*, pp. 4-23. Washington, D.C.: Social Development Family of the World Bank.
- Krueger, R. A., & Casey, M. A. (2014). *Focus groups: A practical guide for applied research (Fifth edition)*. Thousand Oaks: Sage publications, Inc.
- Kuhn, T. (1970). *The structure of scientific revolutions*. Chicago: University of Chicago Press.
- Kukla, A. (2000). *Social constructivism and the philosophy of science*. London and New York: Routledge.
- Kuutti, K. (1996). Activity theory as a potential framework for human-computer interaction research. In B. Nardi (Ed.), *Context and consciousness: Activity theory and human-computer interaction*, pp. 17-44. Cambridge: MIT Press.
- Lahey, K. (2015). Recognizing the vulnerability and capacities of young people: Dr Lori Peek talks with Kate Lahey about the importance of engaging young people in disaster preparedness and recovery. *Australian Journal of Emergency Management*, 29(1), 59-62.
- Lapie, P. (1902). *Logique de la volonté*. Paris: F. Alcan.
- Larsson, I., Staland-Nyman, C., Svedberg, P., Nygren, J. M., & Carlsson, I.-M. (2018). Children and young people's participation in developing interventions in health and well-being: A scoping review. *BMC Health Services Research*, 18(1), 507.
- Latour, B. & S. Woolgar. (1979). *Laboratory life: The construction of scientific facts*. London: Sage.

- Laufer, A. (2002). Disaster Preparedness and Safe Villages in Central Viet Nam. In A. Jabry (Ed.), *Children and Disasters: After the cameras have gone*, pp. 34-40. London: Plan UK.
- Leont'ev, A. N. (1978). *Activity, consciousness and personality*. Englewood Cliffs: Prentice-Hall
- Liaw, S. S., Huang, H. M., & Chen, G. D. (2007). An activity-theoretical approach to investigate learners' factors toward e-learning systems. *Computers in Human Behavior*, 23(4), 1906-1920.
- Lincoln, Y.S. & Guba, E.G. (1985). *Naturalistic inquiry*. Beverly Hills: Sage.
- Lincoln, Y.S. (1995). Emerging criteria for quality in qualitative and interpretive research. *Qualitative Inquiry* 1, 275–289.
- Lipsey, M. W., & Pollard, J. A. (1989). Driving toward theory in program evaluation: More models to choose from. *Evaluation and Program Planning*, 12(4), 317-328.
- Lonigan, C. J., Shannon, M. P., Finch Jr, A. J., Daugherty, T. K., & Taylor, C. M. (1991). Children's reactions to a natural disaster: Symptom severity and degree of exposure. *Advances in Behaviour Research and Therapy*, 13(3), 135-154.
- Lopez, Y., Hayden, J., Cologon, K. & Hadley, F. (2012). Child participation and disaster risk reduction. *International Journal of Early Years Education*, 20(3), 300-308.
- Louis, M. R., & Bartunek, J. M. (1992). Insider/outsider research teams: Collaboration across diverse perspectives. *Journal of Management Inquiry*, 1(2), 101-110.
- Luna, E. M. (2007, January 17). *Mainstreaming community-based disaster risk management in local development planning* [Paper presentation]. Forum on Framework-Building for Investigation of Local Government Settlement Planning Responses to Disaster Mitigation, Quezon City, the Philippines. [http://alterplan.org.ph/documents/EmmanuelMLuna\\_MainstreamingCommunity-BasedDisasterRiskManagementInLocalDevelopmentPlanning.pdf](http://alterplan.org.ph/documents/EmmanuelMLuna_MainstreamingCommunity-BasedDisasterRiskManagementInLocalDevelopmentPlanning.pdf)
- Luna, E. M. (2012). Education and disaster. In B. Wisner, J. C. Gaillard & I. Kelman (Eds.), *The Routledge handbook of hazards and disaster risk reduction*, pp.750-760. New York: Routledge.
- Majumder, S. (2013). *The economics of early response and resilience: Bangladesh country study*. London, UK: Government Department for International Development
- Malinowski, B. (1967). *A Diary in the strictest sense of the term*. London: Kegan Paul and Harcourt.
- Mallick, B., Rahaman, K. R., & Vogt, J. (2011). Social vulnerability analysis for sustainable disaster mitigation planning in coastal Bangladesh. *Disaster Prevention and Management*, 23(3), 220-237.

- Manyena, S. B., Fordham, M., & Collins, A. (2008). Disaster resilience and children: Managing food security in Zimbabwe's Binga District. *Children Youth and Environments*, 18(1), 303-331.
- Marshall, C. & Rossman, G. B. (2006). *Designing qualitative research (Fourth edition)*. Thousand Oaks: Sage Publications, Inc.
- Marshall, M. N. (1996). The key informant technique. *Family Practice*, 13(1), 92-97.
- Martin, M. (2010). Child participation in disaster risk reduction: The case of flood-affected children in Bangladesh. *Third World Quarterly*, 31(8), 1357-75.
- Masten, A. S., Best, K. M., & Garmezy, N. (1990). Resilience and development: Contributions from the study of children who overcome adversity. *Development and Psychopathology*, 2(4), 425-444.
- Matthews, H., Limb, M., & Taylor, M. (1999). Young people's participation and representation in society. *Geoforum*, 30(2), 135-144.
- Mauthner, M. (1997). Methodological aspects of collecting data from children: Lessons from three research projects. *Children & Society*, 11, 16-28.
- Mayall, B. (2000). Conversations with children: Working with generational issues. In P. Christensen & A. James (Eds.), *Research with children*, pp. 120-135. New York: Falmer Press.
- Maykut, P., & Morehouse, R. (1994). *Beginning qualitative research: A philosophic and practical guide*. London: Falmer Press.
- Maynard, M. (1994). Methods, practice and epistemology: The debate about feminism and research. In M. Maynard & J. Purvis (Eds), *Researching women's lives from a feminist perspective*, pp. 10-26. Oxon and New York: Taylor & Francis.
- Mayo, M. (2001). Children's and young people's participation in development in the South and in urban regeneration in the North. *Progress in Development Studies*, 1(4), 279-293.
- McAllister, K. (1999). Understanding participation: Monitoring and evaluating process, outputs and outcomes. *Rural poverty and environment working paper series; no. 2*. Ottawa: International Development Research Centre.
- McDonnell, T. (2019, January 24). Climate change creates a new migration crisis for Bangladesh. *National Geographic*. Retrieved from <https://www.nationalgeographic.com/environment/2019/01/climate-change-drives-migration-crisis-in-bangladesh-from-dhaka-sundabans/>
- McMahon, M. (1997, December 7-10). *Social Constructivism and the World Wide Web- a paradigm for learning* [Paper presentation]. ASCILITE Conference, Perth, Australia. <https://www.ascilite.org/conferences/perth97/papers/Mcmahon/Mcmahon.html>

- Michener, V. J. (1998). The participatory approach: Contradiction and co-option in Burkina Faso. *World Development*, 26(12), 2105-2118.
- Midtbust, L. G. H., Dyregrov, A., & Djup, H. W. (2018). Communicating with children and adolescents about the risk of natural disasters. *European Journal of Psychotraumatology*, 9 (sup2), 1429771.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook (Second edition)*. California: Sage.
- Millei, Z. J. (2005). The discourse of control: Disruption and Foucault in an early childhood classroom. *Contemporary Issues in Early Childhood*, 6(2), 128-139.
- Miller, G., & Fox, K. (2004). Building bridges: The possibility of analytic dialogue between ethnography, conversation analysis and Foucault. In D. Silverman (Ed.), *Qualitative research: Theory, method and practice*, pp. 35-55. London: Sage Publications.
- Ministry of Disaster Management and Relief (MoDMR) (2010). *National Plan for Disaster Management 2010-2015*. Dhaka: Government of the People's Republic of Bangladesh.
- Ministry of Disaster Management and Relief (MoDMR) (2017). *National Plan for Disaster Management 2016-2020*. Dhaka: Government of the People's Republic of Bangladesh.
- Ministry of Education, Bangladesh (2010). *National Education Policy 2010*. Dhaka: Government of the People's Republic of Bangladesh
- Mitchell T., Tanner, T. & Haynes, K. (2009). *Children as agents of change disaster risk reduction: Lessons from El Salvador and the Philippines. Working paper No.1*. Brighton: Children in a Changing Climate, Institute of Development Studies.
- Mitchell, T., Haynes, K., Choong, W., Hall, N. & Oven, K. (2008). The role of children and youth in communicating disaster risk. *Children, Youth and Environments*, 18(1), 254-279.
- Mizutori, M., & Guha-Sapir, D. (2018). *Economic losses, poverty and disasters 1998–2017*. Brussels and Geneva: CRED and UNISDR.
- Mngomezulu, N. M. (2015). *Strategies of Monitoring Teaching and Learning: A School Management Team Perspective*. Master's dissertation. Edgewood: University of KwaZulu-Natal.
- Mojkowski, C. (2000). The essential role of principals in monitoring curriculum implementation. *NASSP Bulletin*, 84(613), 76–83.
- Mondal, D. R. (2019). High risk of post-earthquake fire hazard in Dhaka, Bangladesh. *Fire*, 2(2), 24.
- Monitoring and Evaluation Division (MED) & Directorate of Primary Education (DPE) (2019). *Annual primary school census 2019*. Retrieved on May 9, 2020 from

[http://dpe.gov.bd/sites/default/files/files/dpe.portal.gov.bd/publications/321eae8\\_454\\_d\\_4fd0\\_8a55\\_02462faf1520/Draft%20APSC\\_2019\\_PDF.pdf](http://dpe.gov.bd/sites/default/files/files/dpe.portal.gov.bd/publications/321eae8_454_d_4fd0_8a55_02462faf1520/Draft%20APSC_2019_PDF.pdf)

- Morf, M. E., & Weber, W. G. (2000). I/O Psychology and the bridging potential of A. N. Leont'ev's activity theory. *Canadian Psychology, 41*(2), 81-93.
- Morgan, D. L. (1996a). *Focus groups as qualitative research (Vol. 16)*. Thousand Oaks: Sage Publications, Inc.
- Morgan, D. L. (1996b). Focus groups. *Annual review of sociology, 22*(1), 129-152.
- Morgan, D. L., & Krueger, R. A. (1993). When to use focus groups and why. In D. L. Morgan (ed.), *Successful focus groups: Advancing the state of the art. A SAGE focus edition*, pp. 3-19. Thousand Oaks, CA: SAGE Publications, Inc.
- Morgan, D. L., Krueger, R. A., & King, J. A. (1998). *The focus group kit, Vols. 1-6*. Thousand Oaks, London and New Delhi: Sage Publications, Inc.
- Morgan, M., Gibbs, S., Maxwell, K. & Britten, N. (2002). Hearing children's voices: Methodological issues in conducting focus groups with children aged 7-11 years. *Qualitative Research, 2*(1), 5-20.
- Morris, K. A. N., & Edwards, M. T. (2008). Disaster risk reduction and vulnerable populations in Jamaica: Protecting children within the comprehensive disaster management framework. *Children Youth and Environments, 18*(1), 389-407.
- Morrow, V. & Richards, M. (1996). The ethics of social research with children: An overview. *Children and Society 10*, 90-105.
- Morse, J. M. (1994). Designing funded qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research*, pp. 220-235. Thousand Oaks, CA: Sage.
- Mousumi, M. A., & Kusakabe, T. (2017a). Proliferating English-medium schools in Bangladesh and their educational significance among the "Clientele". *Journal of International Development and Cooperation, 23*(1), 1-13.
- Mousumi, M. A., & Kusakabe, T. (2017b). The dynamics of supply and demand chain of English-medium schools in Bangladesh. *Globalisation, Societies and Education, 15*(5), 679-693.
- Mudavanhu, C. (2016). A review of children's participation in disaster risk reduction. *Jambá: Journal of Disaster Risk Studies, 8*(1), Art. #218, 6 pages.
- Mudavanhu, C., Manyena, B. & Collins, A. E. (2016). Disaster risk reduction knowledge among children in Muzarabani District, Zimbabwe. *Natural Hazards, 84*(2), 911-931.
- Mudavanhu, C., Manyena, S. B., Collins, A. E., Bongo, P., Mavhura, E. & Manatsa, D. (2015). Taking children's voices in disaster risk reduction a step forward. *International Journal of Disaster Risk Science, 6*(3), 267-281.

- Muris, P., Merckelbach, H., & Collaris, R. (1997). Common childhood fears and their origins. *Behaviour Research and Therapy*, 35(10), 929–937.
- Mutton, D., & Haque, C. E. (2004). Human vulnerability, dislocation and resettlement: Adaptation processes of river-bank erosion-induced displacees in Bangladesh. *Disasters*, 28(1), 41-62.
- Nagy, S., & Viney, L. (1994, September). *The rigorous application of qualitative methods to constructivist research* [Paper presentation]. The Australian Psychological Society Conference, Wollongong, Australia.
- Narayanasamy, N., Dwaraki, B. R., Tamilmani, B., & Ramesh, R. (1996). Whither children's hour? An experimental PRA among labouring rural children. *Participatory Learning and Action Note*, 65-69. London: IIED
- Nardi, B. A. (1996). Studying context: A comparison of activity theory, situated action models and distributed cognition. In M. Nardi (Ed.), *Context and Consciousness: Activity theory and human-computer interaction*, pp. 69-102. Cambridge: MIT Press.
- Neimeyer, R. (1993a). Constructivism and the cognitive psychotherapies: Some conceptual and strategic contrasts. *Journal of Cognitive Psychotherapy*, 7(3), 159-171.
- Neimeyer, R. A. (1993b). Constructivist approaches to the measurement of meaning. In Neimeyer, G. J. (Ed.), *Constructivist assessment: A casebook. Counselling psychologist casebook series, Vol. 2*. pp. 58–103. Thousand Oaks: Sage Publications, Inc.
- Neumark-Sztainer, D., Story, M., Perry, C. & Casey, M. (1999). Factors influencing food choices of adolescents: Findings from focus group discussions with adolescents. *Journal of the American Dietetic Association*, 99(8), 929-937.
- Newman, C.J. (1976). Children of disaster: Clinical observations at Buffalo Creek. *Am J Psychiatry*, 133(3), 306–312.
- Nikku B.R., Nepali S., Karkara R. & Ahmed S. (2006). *Child rights perspective in response to natural disasters in South Asia: A retrospective study*. Kathmandu: Save the Children.
- Nikku, B.R. (2012). Children's rights in disasters: Concerns for social work: Insights from South Asia and possible lessons for Africa. *International Social Work* 56(1): 51–66.
- Nind, M. (2011). *Participatory data analysis: A step too far?* *Qualitative research*, 11(4), 349-363.
- Norris, F.H., Friedman, M.J., Watson, P.J., Byrne, C.M., Diaz, E., & Kaniasty, K. (2002). 60,000 disaster victims speak: Part I. An empirical review of the empirical literature, 1981–2001. *Psychiatry: Interpersonal and Biological Processes*, 65(3), 207–239.
- O’Cathain, A., Hoddinott, P., Lewin, S., Thomas, K. J., Young, B., Adamson, J., Jansen, Y. J., Mills, N., Moore, G. & Donovan, J. L. (2015). Maximising the impact of qualitative research in feasibility studies for randomised controlled trials: Guidance for researchers. *Pilot and Feasibility Studies*, 1(32), 1-13.

- O'Connor, D. L., & O'Neill, B. J. (2004). Toward social justice: Teaching qualitative research. *Journal of Teaching in Social Work, 24*(3-4), 19-33.
- Oda, T. (2016). Schools, teachers, and training in risk reduction after the 2011 Tohoku disaster. In K. Shiwaku, A. Sakurai & R. Shaw (Eds.), *Disaster Resilience of education systems*, pp. 53-71. Tokyo: Springer.
- Pahl-Wostl, C., & Hare, M. (2004). Processes of social learning in integrated resources management. *Journal of Community & Applied Social Psychology, 14*(3), 193-206.
- Parkinson, J. (1981). Food aid. In J. Faaland (Ed.), *Aid and influence: A case of Bangladesh*, pp. 82-102. London and Basingstoke: The Macmillan Press Ltd.
- Patton, M. Q. (2002). *Qualitative research and evaluation methods (Third edition)*. Thousand Oaks, CA: Sage.
- Patton, M. Q. (2003). Utilization-focused evaluation. In T. Kellaghan, & D. L. Stufflebeam (Eds.), *International handbook of educational evaluation*, pp. 223-242. Dordrecht: Springer.
- Pawson, R., & Tilley, N. (1997). *Realistic evaluation*. London: Sage.
- Peek, L. & Fothergill, A. (2006). Reconstructing childhood: An exploratory study of children in Hurricane Katrina. *Quick response report #186*. Boulder: Natural Hazards Research and Applications Information Centre, University of Colorado.
- Peek, L. & Fothergill, A. (2009). Using focus groups: Lessons from studying daycare centers, 9/11, and Hurricane Katrina. *Qualitative Research, 9*(1), 31-59.
- Peek, L. (2008). Children and disasters: Understanding vulnerability, developing capacities, and promoting resilience- an introduction. *Children, Youth and Environments 18*(1), 1-29.
- Peek, L. (2010). In their own words: Displaced children's educational recovery needs after Hurricane Katrina. *Disaster Medicine and Public Health Preparedness, 4*(3), S63-S70.
- Peek, L., & Stough, L. M. (2010). Children with disabilities in the context of disaster: A social vulnerability perspective. *Child Development, 81*(4), 1260-1270.
- Penrose, A., & Takaki, M. (2006). Children's rights in emergencies and disasters. *The Lancet, 367*(9511), 698-699.
- Petal M., & Sanduvac Z.T. (2012). *DREAMS for Turkey: A case study of scale and reach of disaster-learning self-study for individual and household preparedness and school disaster management*. London: Risk RED.
- Petal, M. & Crocetti, E., (2018). *Child-centred research-into-action brief: Children's impacts on household safety*. GADRRRES.

- Petal, M., Ronan, K., Ovington, G., & Tofa, M. (2020). Child-centred risk reduction and school safety: An evidence-based practice framework and roadmap. *International Journal of Disaster Risk Reduction*, 49(101633), 1-12.
- Pitts, J. M. (1995). *Personal understandings and mental models of information: A qualitative study of factors associated with the information-seeking and use of adolescents*. Doctoral dissertation. Florida: The Florida State University.
- Plan International (2010). *Child-centred DRR toolkit*. Bangladesh, Cambodia and El Salvador: Plan International.
- Plan UK (2010). *Child-centred disaster risk reduction: Building resilience through participation— lessons from Plan International*. London: Plan UK.
- Plummer, R., & FitzGibbon, J. (2007). Connecting adaptive co-management, social learning, and social capital through theory and practice. In D. Armitage, F. Berkes & N. Doubleday (Eds.), *Adaptive co-management: Collaboration, learning, and multi-level governance*, pp. 38–61. Vancouver: UBC Press.
- Pope C., Ziebland, S., & Mays N. (2000). Analysing qualitative data. *British Medical Journal*, 320(7227), 114–116.
- Pope, A. M., Finney, S. J., & Bare, A. K. (2019). The essential role of program theory: Fostering theory-driven practice and high-quality outcomes assessment in student affairs. *Research & Practice in Assessment*, 14(Summer), 5-17.
- Porter, G., Hampshire, K., Bourdillon, M., Robson, E., Munthali, A., Abane, A., & Mashiri, M. (2010). Children as research collaborators: Issues and reflections from a mobility study in sub-Saharan Africa. *American Journal of Community Psychology*, 46, 215-227.
- Prawat, R. S., & Floden, R. E. (1994). Philosophical perspectives on constructivist views of learning. *Educational Psychologist*, 29(1), 37-48.
- Prout, A., & James, A. (1990). A new paradigm for the sociology of childhood? Provenance, promise and problems. In A. James & A. Prout (eds), *Constructing and Reconstructing Childhood*, pp. 6-28. London: Falmer Press.
- Punch, S. (2002a). Research with children: The same or different from research with adults?. *Childhood*, 9(3), 321–341.
- Punch, S. (2002b). Interviewing strategies with young people: The “secret box”, stimulus material and task-based activities. *Children and Society* 16(1), 45–56.
- Rabiee F. (2004). Focus-group interview and data analysis. *Proceedings of the Nutrition Society*, 63(4), 655–660.
- Raftree, L., Machingaidze, S., del Valle, L., & Foster, F. (2003). Coping in the aftermath of calamity: The earthquakes of El Salvador. In A. Jabry (Ed.), *After the cameras have gone: Children and disasters*, pp. 15-24. London: Plan UK.

- Rashid M., Ronan, K. R., & Towers B. (2016). Children as change agents in reducing risks of disasters. In Winograd K. (Ed.), *Education in times of environmental crises: Teaching children to be agents of change*, pp. 233-246. New York: Routledge.
- Rashid, S. F. (2009). Strategies to reduce exclusion among populations living in urban slum settlements in Bangladesh. *Journal of Health, Population, and Nutrition*, 27(4), 574.
- Razzaque, A., Alam, N., Wai, L., & Foster, A. (1990). Sustained effects of the 1974–5 famine on infant and child mortality in a rural area of Bangladesh. *Population Studies*, 44(1), 145-154.
- Reason, P. (Ed.). (1994). *Participation in human inquiry*. London: Sage.
- Reilly, J., Armstrong, J., Dorosty, A., Emmett, P., Ness, A., Rogers, I., Steer, C. & Sheriff, A. (2005). Early life risk factors for obesity in childhood: A cohort study. *British Medical Journal*, 330(7504), 745-761.
- Rescher, N. (2004). *Value matters: Studies in axiology (Vol. 8)*. Berlin: Walter de Gruyter.
- Riemer, M., & Bickman, L. (2011). Using program theory to link social psychology and program evaluation. In M. M. Mark, S. I. Donaldson & B. Campbell (Eds.), *Social Psychology and Evaluation*, pp.104 -138. New York: Guilford Press.
- Ripley, A. (2009). *The unthinkable: Who survives when disaster strikes – and why*. New York: Three Rivers Press.
- Ritchie J. & Spencer L. (1994). Qualitative data analysis for applied policy research. In A. Bryman & R.G. Burgess (Eds.), *Analysing qualitative data*, pp. 172–194. London: Routledge.
- Ritchie J., Spencer L. & O'Connor W. (2003). Carrying out Qualitative Analysis. In I. Ritchie & J. Lewis (Eds.), *Qualitative research practice: A guide for social science students and researchers*, pp. 219–262. London: Sage Publications.
- Rivers, J. P. W. (1982). Women and children last: An essay on sex discrimination in disasters. *Disasters*, 6(4), 256-267.
- Robinson, C. & Kellett, M. (2004). Power. In S. Fraser, A. Lewis, S. Ding, M. Kellett & C. Robinson (Eds.), *Doing research with children and young people*, pp. 81–96. London: Sage.
- Rogan, J. M., & Grayson, D. J. (2003). Towards a theory of curriculum implementation with particular reference to science education in developing countries. *International Journal of Science Education*, 25(10), 1171-1204.
- Rogers, K. G., & Goodbred, S. L. (2014). The Sundarbans and Bengal delta: The world's largest tidal mangrove and delta system. In V. S. Kale (Ed.), *Landscapes and Landforms of India*, pp. 181-187. Dordrecht: Springer.

- Rogers, P. J., Petrosino, A., Huebner, T. A., & Hacsí, T. A. (2000). Program theory evaluation: Practice, promise, and problems. *New Directions for Evaluation*, 2000(87), 5-13.
- Rogge, J. R., & Elahi, K. M. (1989). *The riverbank erosion impact study Bangladesh. Final report to the International Development Research Centre*. Ottawa: IDRC.
- Ronan, K. R. (2015). Advances and continuing challenges towards HFA2 and post-2015: Background chapter prepared for the 2015 Global Assessment Report on Disaster Risk Reduction. Paris/Geneva: UNESCO/UNICEF.
- Ronan, K. R., & Johnston, D. M. (1999). Behaviourally-based interventions for children following volcanic eruptions: An evaluation of effectiveness. *Disaster Prevention and Management*, 8(3), 169-176.
- Ronan, K. R., & Johnston, D. M. (2001). Correlates of hazard education programs for youth. *Risk Analysis*, 21(6), 1055-1064.
- Ronan, K. R., & Johnston, D. M. (2005). *Promoting community resilience in disasters: The role for schools, youth, and families*. New York: Springer.
- Ronan, K. R., & Johnston, D., M. (2003). Hazards Education for Youth: A quasi-experimental investigation. *Risk Analysis*, 23(5), 1009-1020.
- Ronan, K. R., Alisic, E., Towers, B., Johnson, V. A., & Johnston, D. M. (2015). Disaster preparedness for children and families: A critical review. *Current Psychiatry Reports*, 17(7), 1-9.
- Ronan, K. R., Crellin, K., Johnston, D. M., Finnis, K., Paton, D. & Becker, J. (2008). Promoting child and family resilience to disasters: Effects, interventions, and prevention effectiveness. *Children Youth and Environments*, 18(1), 332-353.
- Ronan, K. R., Haynes, K., Towers, B., Alisic, E., Ireland, N., Amri, A., Susan, D., & Petal, M. (2016). Child-centred disaster risk reduction: Can disaster resilience programs reduce risk and increase the resilience of children and households?. *The Australian Journal of Emergency Management*, 31(3), 49-58.
- Ronan, K.R, Crellin, K., & Johnston, D. M. (2010). Correlates of hazards education for youth: A replication study. *Natural Hazards*, 53(3), 503–526.
- Ronan, K.R., & Towers, B. (2014). Systems education for a sustainable planet: Preparing children for natural disasters. *Systems*, 2, 1-23.
- Ronan. K. R., Petal, M., Johnson, V., Alisic, E., Haynes, K., Johnston, D. M. & Davie, S. (2014). *School curricula, education material and relevant training include disaster risk reduction and recovery. HFA Progress Report - Indicator 3.2*. Geneva: UNISDR.
- Ronoh, S., Gaillard, J. C., & Marlowe, J. (2015a). Children with disabilities and disaster risk reduction: A review. *International Journal of Disaster Risk Science*, 6(1), 38-48.

- Ronoh, S., Gaillard, J. C., & Marlowe, J. (2015b). Children with disabilities and disaster preparedness: A case study of Christchurch. *Kōtuitui: New Zealand Journal of Social Sciences Online*, 10(2), 91-102.
- Ronoh, S., Gaillard, J. C., & Marlowe, J. (2017). Children with disabilities in disability-inclusive disaster risk reduction: Focussing on school settings. *Policy Futures in Education*, 15(3), 380-388.
- Rubenstein, J. (2007). Accountability in an unequal world. *Journal of Politics*, 69, 616-632.
- Sam, C. (2012). Activity theory and qualitative research in digital domains. *Theory into Practice*, 51(2), 83-90.
- Sandlin, J. A., Quiroga, S. S., & Hammerand, A. (2018). Struggling to see through the eyes of youth: On failure and (un) certainty in a photovoice project. In M., Capous-Desyllas & K., Morgaine (Eds), *Creating social change through creativity*, pp. 57-76. Cham, Switzerland: Palgrave Macmillan.
- Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students*. P Essex: Pearson education.
- Save the Children (2008). *In the face of disaster: Children and climate change*. London, UK: International Save the Children Alliance.
- Save the Children UK (2007). *Legacy of disasters: The impact of climate change on children*. London: Save The Children UK.
- Sayer, A. (1992). *Method in social science: A realist approach*. London: Routledge.
- Schmitz, H. P., Raggio, P., & Bruno-van Vijfeijken, T. (2012). Accountability of transnational NGOs: Aspirations vs. practice. *Nonprofit and Voluntary Sector Quarterly*, 41(6), 1175-1194.
- Schunk, D. H. (1995). Inherent details of self-regulated learning include student perceptions. *Educational Psychologist*, 30(4), 213-216.
- Schwandt, T. A. (1994). Constructivist, interpretivist approaches to human inquiry. In N. K. Denzin & Y. S. Lincoln (Eds.), *The landscape of qualitative research: Theories and Issues*, pp. 221-259. Thousand Oaks, CA: Sage.
- Scriven, M. (1998). Minimalist theory: The least theory that practice requires. *The American Journal of Evaluation*, 19(1), 57-70.
- Secondary and Higher Education Division (SHED) (2020). *List of Institutions*. Dhaka: Bangladesh Ministry of Education. Retrieved on May 9, 2020 from <http://shed.portal.gov.bd/>
- Selby, D., & Kagawa, F. (2012). *Disaster risk reduction in school curricula: Case studies from thirty countries*. Paris and Geneva: UNESCO and UNICEF.

- Sen, A. (1981). *Poverty and famines: An essay in entitlement and deprivation*. Oxford, UK: Clarendon Press.
- Sen, A. (1998, July 26). Famine: The man-made disaster. *The New York Times*, section 4, pp. 14.
- Shah, S., & Conchar, C. (2009). Why single-sex schools? Discourses of culture/faith and achievement. *Cambridge Journal of Education*, 39(2), 191-204.
- Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, 22(2), 63-75.
- Sheridan, S., & Samuelsson, I. P. (2001). Children's conceptions of participation and influence in pre-school: A perspective on pedagogical quality. *Contemporary Issues in Early Childhood*, 2(2), 169-194.
- Shiwaku, K., & Fernandez, G. (2011). Innovative approaches in disaster education. *Disaster education. Community, Environment and Disaster Risk Management*, 7, 115 – 136.
- Shiwaku, K., Shaw, R., Kandel, R. C., Shrestha, S. N. & Dixit, A. M. (2007). Future perspective of school disaster education in Nepal. *Disaster Prevention and Management*, 16(4), 576-587.
- Shiwaku, K., Shaw, R., Kandel, R. C., Shrestha, S. N., & Dixit, A. M. (2006). Promotion of disaster education in Nepal: The role of teachers as change agents. *International Journal of Mass Emergencies and Disasters*, 24(3), 403–420
- Shohel, M. M. C. (2010). *Transition from nonformal to formal education in Bangladesh: An exploration of the challenges students face*. Saarbrücken, Germany: LAMBERT Academic Publishing.
- Shohel, M. M. C., & Howes, A. J. (2007). Transition from nonformal schools: Photo elicitation as research tool in education fieldwork in Bangladesh. *Visual Studies*, 22(1), 53–61.
- Shohel, M. M. C., & Howes, A. J. (2018). The relevance of formal and nonformal primary education in relation to health, well-being and environmental awareness: Bangladeshi pupils' perspectives in the rural contexts. *International Journal of Qualitative Studies on Health and Well-Being*, 13(1), 1-9.
- Slim, H. (2002, January 10-12). *By what authority? The legitimacy and accountability of non-governmental organisations* [Paper presentation]. International Meeting on Global Trends and Human Rights – Before and After September 11, The International Council on Human Rights Policy, Geneva.
- Slotema, M., & Shahi, I.A. (2010). *Child centered disaster risk reduction*. Dhaka: PLAN Bangladesh.
- Smith, J., Firth, J. (2011). Qualitative data analysis: Application of the framework approach. *Nurse Researcher*, 18(2): 52-62

- Smith, L. M., & Geoffrey, W. (1968). *The complexities of an urban classroom*. New York: Holt, Rinehart and Winston.
- Spillane, J. P., Halverson, R., & Diamond, J. B. (2001). Investigating school leadership practice: A distributed perspective. *Educational Researcher*, 30(3), 23-28.
- Spriggs, M., & Gillam, L. (2019). Ethical complexities in child co-research. *Research Ethics*, 15(1), 1-16.
- Stabback, P. (2016). What makes a quality curriculum? In M. Amadio, R. Opertti, L. Ji & É. Brylinski (coordination and production), *Current and critical issues in curriculum and learning (In-Progress reflection no. 2)*. Geneva: UNESCO International Bureau of Education.
- Strauss, A. (1987). *Qualitative analysis for social scientists*. New York: Cambridge University Press.
- Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage.
- Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: techniques and procedures for developing grounded theory (Second edition)*. Thousand Oaks, CA: Sage.
- Sugar, M. (1989). Children in a disaster: An overview. *Child Psychiatry & Human Development*, 19, 163-179.
- Tacoli, C., Polack, E., Nhantumbo, I., & Tenzing, J. (2014). *Building resilience to environmental change by transforming gender relations. Briefing paper*. London: International Institute for Environment and Development.
- Talbot, K. (1998-99). Mothers now childless: Personal transformations after the death of an only child. *Omega*, 38(3), 167-186.
- Tanner, T. & Seballos, F. (2012). Children, climate change and disasters. *IDS In Focus policy briefing: Research and analysis from The Institute of Development Studies*, 23. Brighton: IDS, University of Sussex.
- Tanner, T. (2010). Shifting the narrative: Child-led responses to climate change and disasters in El Salvador and the Philippines. *Children & Society*, 24(4), 339-351.
- Tanner, T. M., Garcia, J., Lazcano, F., Molina, F., Molina, G., Rodríguez, G., Tribunalo, B., & Seballos, F. (2009). Children's participation in community-based disaster risk reduction and adaptation to climate change. *Participatory Learning and Action*, 60, 54-64.
- Tatebe, J., & Mutch, C. (2015). Perspectives on education, children and young people in disaster risk reduction. *International Journal of Disaster Risk Reduction*, 14, 108-114.
- Taylor, H., & Peace, R. (2015). Children and cultural influences in a natural disaster: Flood response in Surakarta, Indonesia. *International Journal of Disaster Risk Reduction*, 13, 76-84.

- Taylor, S. J., & Bogdan, R. (1998). *Introduction to qualitative research methods (Third edition)*. New York: John Wiley.
- The Daily Star (2018, August 14). Master's Status for Top Qawmi Degree: Towards legal recognition. 2020/*thedailystar.net*. Retrieved from <https://www.thedailystar.net/news/country/bangladesh-cabinet-approves-bill-recognising-qawmi-madrasahs-dawrae-hadith-1620178>
- Thomas, N., & O’Kane, C. (1998). The ethics of participatory research with children. *Children and Society*, 12(5), 336-48.
- Thorne, B. (1980). "You still takin' notes?" Fieldwork and problems of informed consent. *Social Problems*, 27(3), 284-297.
- Thorne, B. (1993). *Gender play: Girls and boys in school*. New Brunswick, NJ: Rutgers University Press.
- Tidball, K. G., Krasny, M. E., Svendsen, E., Campbell, L., & Helphand, K. (2010). Stewardship, learning, and memory in disaster resilience. *Environmental Education Research*, 16(5-6), 591-609.
- Tierney, K. J., Petak, W. J., & Hahn, H. (1988). *Disabled persons and earthquake hazards*. Boulder, CO: Institute of Behavioral Science, University of Colorado.
- Towers, B. (2012). *Children's knowledge of vulnerability and resilience to bushfires*. Doctoral dissertation. Hobart: University of Tasmania.
- Towers, B. (2015). Children’s knowledge of bushfire emergency response. *International Journal of Wildland Fire*, 24(2), 179-189.
- Towers, B., Haynes, K., Sewell, F., Bailie, H., & Cross, D. (2014). Child-centred disaster risk reduction in Australia: Progress, gaps and opportunities. *The Australian Journal of Emergency Management*, 29(1), 31-38.
- Towers, B., Ronan, K., Haynes, K., & Noonan, R., et al. (2016). *Disaster resilience education: A practice framework for Australian emergency management agencies*. East Melbourne: Bushfire and Natural Hazards Cooperative Research Centre.
- Tremblay, M. A. (1957). The key informant technique: A non-ethnographic application. *American Anthropologist*, 59(4), 688-701.
- Turnbull, B. (2002). Program theory building: A strategy for deriving cumulative evaluation knowledge. *American Journal of Evaluation*, 23(3), 275-290.
- United Nations (1989). *Convention on the rights of the child (UNCRC)*. Geneva: United Nations.
- United Nations (2014). *The millennium development goals report 2014*. New York: United Nations.

- United Nations (2015). *The Sendai framework for disaster risk reduction 2015-2030*. Sendai: Third UN World Conference on Disaster Risk Reduction.
- United Nations Children's Fund (UNICEF) (2011). *UNICEF's Disaster risk reduction and preparedness at school: A report on evaluation of approaches and capturing the lessons*. UNICEF: Geneva.
- United Nations Children's Fund (UNICEF) (2014). *Situation analysis on children with disabilities in Bangladesh*. Dhaka: UNICEF
- United Nations Children's Fund (UNICEF) (2020). Children in cities: Bangladesh among 10 nations that top the list for rapid urbanisation. Dhaka: UNICEF. Retrieved April 5, 2020, from <https://www.unicef.org/bangladesh/en/children-cities%C2%A0>
- United Nations Department of Economic and Social Affairs, Population Division (2018). *World urbanization prospects: The 2018 revision*. Custom data acquired via website.
- United Nations Educational, Scientific and Cultural Organization (UNESCO)/United Nations Children's Fund (UNICEF) (2013). *Towards a learning culture of safety and resilience: Technical guidance for integrating disaster risk reduction in the school curriculum*. Paris and Geneva: UNESCO and UNICEF.
- United Nations International Strategy for Disaster Reduction (UNISDR) (2013). *Synthesis report on consultations on the post-2015 framework on disaster risk reduction (HFA2)*. Geneva: UNISDR. Retrieved October 3, 2015, from [www.preventionweb.net/english/professional/publications/v.php?id=32535](http://www.preventionweb.net/english/professional/publications/v.php?id=32535)
- United Nations Office for Disaster Risk Reduction (UNDRR)- Regional Office for Asia and Pacific (2019, December 10). The climate trail to Dhaka's slums. Geneva: UNDRR. Retrieved from <https://www.undrr.org/news/climate-trail-dhakas-slums>
- United States Agency for International Development (USAID) (2006). *Literature review: Trafficking in humanitarian emergencies*. Washington, D.C.: USAID.
- Van Joolingen, W.R. (1998). Cognitive tools for discovery learning. *International Journal of Artificial Intelligence in Education*, 10, 385-397.
- Van Maanen, J. (1979). The fact of fiction in organizational ethnography. *Administrative Science Quarterly*, 24(4), 539-550.
- Verenikina, I. (2001). Cultural-Historical psychology and activity theory in everyday practice. In H. Hasan, E. Gould, P. Larkin & L. Vrazalic (Eds.), *Information systems and activity theory: Volume 2 theory and practice*, pp. 23-38. Wollongong: University of Wollongong Press.
- Visweswaran, K. (1994). *Fictions of feminist ethnography*. Minneapolis: University of Minnesota Press.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological process*. Cambridge MA, USA and London, UK: Harvard University Press.

- Walkerdine, V. (2008). Contextualizing debates about psychosocial studies. *Psychoanalysis, Culture & Society*, 13(4), 341-345.
- Walsham, G. (1993). *Interpreting information systems in organizations*. Chichester: Wiley.
- Warming, H. (2005). Participant observation: A way to learn about children's perspectives. In A. Clark, A. T. Kjörholt & P. Moss (Eds.), *Beyond listening: Children's perspectives on early childhood services*, pp. 51-70. Bristol: Policy Press.
- Webb, M., & Ronan, K. R. (2014). Interactive hazards education program for youth in a low SES community: A quasi-experimental pilot study. *Risk analysis*, 34(10), 1882-1893.
- Weiss, C. H. (1997). Theory-based evaluation: Past, present, and future. *New Directions for Evaluation*, 1997(76), 41-55.
- Whiting, B., & Whiting, J. (1970). Methods for observing and recording behavior. In R. Naroll & R. Cohen (Eds.), *A handbook of method in cultural anthropology*, pp. 282-315. New York: Columbia University press.
- Whittaker, W. (2008). *Vulnerability to bushfires in south-eastern Australia: A case study from East Gippsland, Victoria*. Doctoral dissertation. Melbourne: RMIT University.
- Whyte, W. F. (1955). *Street corner society: The structure of an Italian slum*. Chicago: University of Chicago Press.
- Willumsen, E., Hugaas, J. V., & Studsrød, I. (2014). The child as co-researcher- moral and epistemological issues in childhood research. *Ethics and Social Welfare*, 8(4), 332-349.
- Wiltz, N. W., & Klein, E. L. (2001). 'What do you do in child care?' Children's perceptions of high and low quality classrooms. *Early Childhood Research Quarterly*, 16(2), 209-236.
- Winograd, K. (Ed.). (2016). *Education in times of environmental crises: Teaching children to be agents of change*. New York: Routledge.
- Winstone, N., Huntington, C., Goldsack, L., Kyrou, E., & Millward, L. (2014). Eliciting rich dialogue through the use of activity-oriented interviews: Exploring self-identity in autistic young people. *Childhood*, 21(2), 190-206.
- Wisner B. (2006). *Let our children teach us! A review of the role of education and knowledge in disaster risk reduction*. Bengaluru, India: Books for Change.
- Wisner, B., Blaikie, P., Cannon, T., & Davis, I. (2004). The disaster pressure and release model. In B. Wisner, P. Blaikie, T. Cannon & I Davis, (Eds.), *At risk. Natural hazards, people's vulnerability and disasters (Second edition)*, pp. 49-86. New York: Routledge.
- Wisner, B., Gaillard, J. C., & Kelman, I. (2012). Framing disaster: Theories and stories seeking to understand hazards, vulnerability and risk. In B. Wisner, J.C. Gaillard & I. Kelman (Eds.), *Handbook of hazards and disaster risk reduction*, pp. 47-62. Abingdon: Routledge.

- Wittenbough, A. (2014). Re-thinking poverty in light of climate change. Blog post. Sundarbans, Bangladesh: Sundarbans Development and Alternative Resources Initiative (SUNDARI), Concern Worldwide US. Retrieved from <https://www.concernusa.org/story/re-thinking-poverty-in-light-of-climate-change/>
- Woodhead, M., & Faulkner, D. (2000). Subjects, objects or participants? Dilemmas of psychological research with children. In P. Christensen & A. James (Eds.), *Research with children: Perspectives and practices*, pp. 9-36. London: Falmer Press.
- Woods, L. L., Sylvester, L., & Martin, J. E. (2010). Student-directed transition planning: Increasing student knowledge and self-efficacy in the transition planning process. *Career Development for Exceptional Individuals*, 33(2), 106-114.
- World Bank (2020). World development indicators. *World Bank open data: Free and open access to global development data*. Washington, D.C: World Bank. Retrieved from <https://databank.worldbank.org/source/world-development-indicators>
- World Health Organization (WHO) (2008). *Manual for the health care of children in humanitarian emergencies*. Geneva: WHO.
- World Health Organization (WHO), United Kingdom Health Protection Agency, Save the Children & partners (2011). Disaster risk management for health: Child health. *Disaster risk management for health fact sheets series*. Geneva: Global Platform for Disaster Risk Reduction, UNDRR. Retrieved from [https://www.who.int/hac/events/drm\\_fact\\_sheet\\_child\\_health.pdf?ua=1](https://www.who.int/hac/events/drm_fact_sheet_child_health.pdf?ua=1)
- World Population Review (WPR) (2020). Bangladesh Population 2020. Walnut, CA: WPR. Retrieved from <https://worldpopulationreview.com/countries/bangladesh-population/>
- Yanger, M.J.P. (2018). Extending a helping hand in child-centered disaster preparedness. *International and Multidisciplinary Journal of Social Sciences*, 7(1), 59-78.
- Zaman, S., Matin, S., & Kibria, A. M. B. G. (2014). A study on present scenario of child labour in Bangladesh. *IOSR Journal of Business and Management*, 16(6), 25-36.
- Zulfiqar, B., Shahinujjaman, M., & Hossain, N. (2018). Inclusive education in Bangladesh: Digging deeper into educational prospects of children with disabilities in Bangladesh. *European Journal of Education*, 1(1), 36-48.
- Zurita, G., & Nussbaum, M. (2007). A conceptual framework based on activity theory for mobile CSCL. *British Journal of Educational Technology*, 38(2), 211-235.