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# TEACHER-FACILITATED CHILD-CENTRED DISASTER RESILIENCE EDUCATION PROGRAM: A STUDY IN BANGLADESH

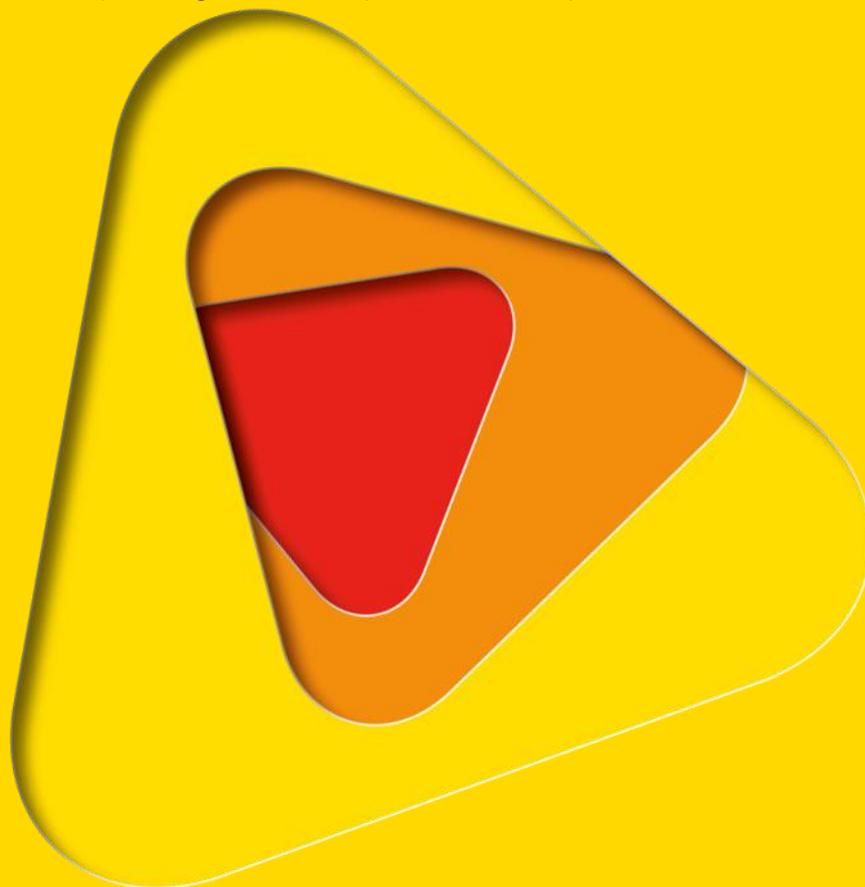**Non-peer reviewed research proceedings from the Bushfire and Natural Hazards CRC & AFAC conference**

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# ABSTRACT

## TEACHER-FACILITATED CHILD-CENTRED DISASTER RESILIENCE EDUCATION PROGRAM: A STUDY IN BANGLADESH

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Over 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, at both the individual and household levels. However, despite the positive findings, significant challenges still prevail. 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 the effectiveness and sustainable implementation. On the other hand, disaster education programs for children are mostly designed and implemented by non-formal educators like development and humanitarian agencies. As a result, the literature here is primarily based on the evaluation of programs, such as those of NGOs, many of which have been identified with significant methodological limitations. Besides, in terms of positive outcomes, the studies to date typically rely on DRR knowledge indicators and, further, do not identify the explicit elements of the programs responsible for generating specific positive outcomes. This study aims to conduct rigorously designed research focused on DRR education for children, particularly those that involve children's active input and participation. In doing so, it has the aim of identifying the specific elements of the DRR education programs that produce the best DRR and resilience outcomes. Additionally, another aim is to examine implementation factors, including those structural and process factors that facilitate or impede sustainable implementation of such programs in the classroom and school settings. Thus, the study is focused on designing and testing a teacher-facilitated, child-centred disaster resilience education program that consists of theory, research and stakeholder-identified elements thought to be responsible for generating effective DRR and resilience outcomes and what underpins effective implementation.

# INTRODUCTION

By participating in disaster resilience education (DRE) programs, children can learn how to cope with disasters and become more resilient. Over the last decade, a large number of studies have been conducted on different types of disaster education programs for children that indicate positive outcomes. These studies advocate that such programs enable children to be more resilient with increased knowledge on disaster risk reduction (DRR), preparedness and confidence. However, in spite of the positive findings, still, there are significant challenges. Although such programs are reported to generate effective outcomes, the area of development, implementation and evaluation lack a guiding model. Moreover, DRE programs for children are typically designed and implemented by non-formal educators like development and humanitarian agencies. As a result, literature found on this ground is largely based on the evaluation of programs, such as those conducted by NGOs, many of which have been identified with significant methodological limitations. Furthermore, concerning positive outcomes, the studies to date mostly rely on DRR knowledge indicators and, further, do not identify the explicit elements of the programs responsible for generating specific positive outcomes. Therefore, this study aims to conduct a rigorously designed research on DRR education for children. In doing so, the study will identify the specific elements of the DRR education programs that produce the best DRR and resilience outcomes. Thus, the study is focused on designing and testing a teacher-facilitated, child-centred disaster resilience education program thought to be responsible for generating effective DRR and resilience outcomes and at the same time strengthening effective implementation.

# BACKGROUND

Disasters are common around the world. In many cases, they cause loss of human lives and property and typically leave economic damage in their wake. Children have been identified as one of the most vulnerable demographic groups in disasters: they account for 30-50 per cent of deaths and experience the most severe psychosocial reactions (World Health Organisation [WHO], 2011). Every year, around 66 million children are affected by disaster (Nikku, 2012). In 2011 alone, this number went beyond 100 million (Bild & Ibrahim, 2013). 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 (Peek, 2008). Therefore, building children's resilience and reducing their vulnerability to disasters is essential.

Preliminary research to date shows that by participating in disaster resilience education programs, children can learn how to cope with disasters and become more resilient: including increased DRR knowledge, reduced anxieties and fears, and increased preparedness at both the individual and household levels (Ronan & Johnston, 2001; Ronan, Alisic, Towers, Johnson & Johnston, 2015; Ronan, Haynes,

Towers et al., 2016). Over the last decade, a growing number of studies have been conducted on different types (e.g. school-based, community-based program) of disaster education, climate change adaptation and resilience programs for children that indicate positive outcomes. These studies suggest that such programs enable children to be more resilient not only in terms of increased DRR and climate change knowledge but also increased preparedness and confidence (Mitchell, Haynes, Choong, Hall & Oven, 2008; Mudavanhu, 2016, Mudavanhu, Manyena & Collins, 2016; Mudavanhu, Manyena & Collins et al., 2015; Ronan & Johnston, 2005).

On the other hand, despite the positive findings, significant challenges still prevail. Recently published systematic reviews focusing on disaster resilience education programs for children to date indicate some serious limitations (Johnson, Ronan, Johnston & Peace, 2014a; Ronan et al., 2015). Reviewing 35 studies, Johnson et al. (2014a) recommended improved design and methodological rigour in future research, which a number of those studies lacked. With a view to exploring the effect of disaster resilience education programs on children's knowledge about hazards and risk reduction, risk perceptions, motivation and behaviour, Ronan et al. (2015) extended from this systematic review, including a critique of these and additional studies done. 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[1] are responsible for producing which benefits' (Ronan et al., 2015). Thus, based on studies done to date, further rigorously designed research is needed to identify specific elements of these programs and how such elements can generate optimal outcomes regarding DRR and resiliency benefits.

Moreover, despite a rich array of disaster resilience education programs done in Australia, Bangladesh and internationally, various reviews have also identified that despite generating effective outcomes by reducing children's vulnerability and increasing resilience, 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 significant problem (Lopez et al., 2012; Mitchell, Tanner & Haynes, 2009; Ronan et al., 2015).

Following initial research in New Zealand (Johnson, Ronan, Johnston & Peace, 2014b), a most recent study conducted in Jakarta using a multi-informant (child participants, school personnel and non-governmental organisations - NGOs) 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 getting in the way of their view of these programs as desirable and useful for children. Therefore, it is evident that to obtain the best results from DRR education programs for children, programs are needed to be i) effective in reducing children's vulnerabilities and increasing their resilience, and at the same time, ii) able to be scaled up and sustainable. However, this

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[1] Here 'ingredients' refers to elements/components of a DRR education program.

requires building capacity within school systems, such that schools themselves and their teachers, can overcome obstacles to implementing and delivering them effectively.

Thus, based on the research and reviews to date, this study aims to conduct a rigorously designed research focused on DRR education for children, particularly those that involve children's active input and participation. In doing so, it has the aim of identifying the specific elements of the DRR education programs for children that produce the best outcomes in reducing children's vulnerabilities and increasing resilience among children, within their schools, households and communities. Additionally, another aim is to examine implementation factors, including those structural and process factors that facilitate versus impede sustainable implementation of such programs in a classroom and school setting. Thus, the study is focused on designing and testing a teacher-facilitated, child-centred disaster resilience education program consisting specific, theory, research and stakeholder-identified elements thought to be responsible for generating effective DRR outcomes and effective implementation.

# RESEARCH DESIGN AND METHODOLOGY

The study has been designed within an action research framework (Kemmis, 1980; Stringer, 2013; Zuber-Skerrit, 1991) aligning with a child-centred disaster risk reduction (CC-DRR) ethos using bottom-up and top-down design strategies. The whole study has been divided into two phases: designing and testing. Through these phases, data will be collected from Dhaka, Bangladesh using an array of mixed qualitative and quantitative methods.

   i)  **Phase one- designing the program:** At this phase, the primary data collection methods involve focus groups with children, interviews with CC-DRR practitioners from implementing agencies and representatives from Ministry of Education and Ministry of Disaster Management and Relief in Bangladesh. The data will be used in designing the teacher-facilitated child-centred disaster resilience education program.

   ii) **Phase two- testing the program**: At this stage, the designed program will be tested and evaluated in a school setting in Bangladesh.

# RESEARCH PROGRESS

The study is currently ongoing. The first phase of primary data has been collected in Dhaka, Bangladesh through focus group discussions with 42 children; interviews with 10 child-centred DRR practitioners from international NGO (e.g., Save the Children, Plan International and Community Participation and Development Bangladesh); and interviews with 10 government officials from the Department of Disaster Management (DDM), the Ministry of Education, National Curriculum and Textbook Board (NCTB), Department of Primary Education, Department of Secondary Education; and observation of several CC-DRR program activities implemented by different NGOs in Bangladesh. At this stage, the collected data is being analysed using a framework analysis approach (Rabiee, 2004; Ritchie & Spencer, 1994, 2002; Srivastava & Hopwood, 2009). From these findings, the teacher-facilitated child-

centred disaster resilience education program will be developed. The designed program is expected to be tested in November 2018.

From the first phase of data collection, the study has identified a set of program elements, e.g., drill, cultural performance and competition, group discussion, student council, tree planting etc. responsible for generating the best DRR outcomes. These elements will serve as the components of the target program. In designing the program, the study is following the new evidence-infused tool, Disaster Resilience Education (DRE) Practice Framework (Towers, Ronan, Haynes et al., 2016) which was developed to guide design, development, delivery, evaluation and implementation of DRE programming. This tool speaks to both top-down and bottom-up design, delivery and evaluation approaches, both of which are to be used here. Alongside this tool, other research literature on sound development and delivery of educational programming, and particularly DRR education and participatory child education approaches, will serve as a basis for incorporating findings from phase one of this research and for infusing theory-driven elements in the development, and evaluation, of the program.

| Teacher-facilitated Child-centred Disaster Resilience Education Program | | | | | | |
|---|---|---|---|---|---|---|
| **Process** | | | | **Outcomes** | | |
| **Elements of the Program** | **Objectives** | **Activities** | **Output** | **Short-term outcomes & feasibility** | **Intermediate outcomes** | **Long-term Impact** |
| Identifying the different elements of the program, e.g., Drill, Child club, etc. | Identifying the learning objectives for the particular program element | Designing the learning activities/assessment tools. | Setting the guidelines for teachers to facilitate the activities | Increase in children's knowledge, skills, motivation and preparedness | Increased resilience & preparedness sustained over time | More resilient and better DRR |

**Figure 1: Structure of the program**

# CONCLUSION

As the research is the first of its kind, it will provide an evidence-base to assist in the development and implementation of CC-DRR-focused, participatory education programs. The government organisations (GOs) and NGOs, emergency management agencies, schools, teachers and, in particular, and ultimately, children would be thought to benefit as a consequence of this

study. With more than 2.2 billion people under the age of 18 in the world, successful implementation of effective child-centred DRR initiatives is thought to have significant potential for ensuring child-rights and DRR at family, local, national and international levels (Ronan, 2015; Towers et al., 2014; Haynes, Lassa & Towers, 2010; Plan UK, 2010). It will also constitute a major contribution to the international literature on DRR, and on children's role in DRR.

## Acknowledgements

# REFERENCES

1. Amri, A., Bird, D. K., Ronan, K. & Towers, B. (2016). Disaster Risk Reduction Education in Indonesia: Challenges and Recommendations for Scaling up. Nat.
2. Bild, E. & Ibrahim, M. (2013). *Towards the resilient future children want: a review of progress in achieving the children's charter for disaster risk reduction*. World Vision UK.
3. Haynes, K, Lassa, J. & Towers, B. (2010). *Child-centred disaster risk reduction and climate change adaptation-Roles of Gender and Culture in Indonesia*. Children in a Changing Climate.
4. James, A., Jenks, C. & Prout, A. (1998). Theorizing Childhood. Cambridge: Polity Press.
5. Johnson, V.A., Ronan, K.R., Johnston, D.M. & Peace, R. (2014a). Evaluations of disaster education programs for children: A methodological review. *International journal of disaster risk reduction, 9, 107-123.*
6. 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.
7. Kemmis, S. (1980). Action Research in Retrospect and Prospect.
8. 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.
9. 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.
10. 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.
11. Mudavanhu, C. (2016). A review of children's participation in disaster risk reduction. *Jàmbá: Journal of Disaster Risk Studies*, 8(1). 6-pages.
12. Mudavanhu, C., Manyena, B. & Collins, A. E. (2016). Disaster risk reduction knowledge among children in Muzarabani District, Zimbabwe. *Natural Hazards*, 84(2), 911-931.
13. 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.
14. 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.
15. Peek, L. (2008). Children and disasters: understanding vulnerability, developing capacities, and promoting resilience—an introduction. *Children Youth and Environments*, 18(1), 1-29.
16. Plan UK (2010). *Child-Centred Disaster Risk Reduction: Building resilience through participation–Lessons from Plan International*. London: Plan UK.
17. Rabiee, F. (2004). Focus-group interview and data analysis. *Proceedings of the nutrition society*, 63(4), 655-660.
18. Ritchie J & Spencer L (1994). Qualitative data analysis for applied policy research. In *Analysing Qualitative Data*, 173–194 [Bryman A. and Burgess G.R. editors]. London: Routledge.
19. Ronan, K. R. (2015). Advances and continuing challenges towards HFA2 and post-2015: Background chapter p*repared for the 2015 Global Assessment Report on Disaster Risk Reduction.* UNESCO/UNICEF. Retrieved June 13, 2015, from http://www.preventionweb.net/english/hyogo/gar/2015/en/bgdocs/UNICEF%20and%20UNESCO,%202014.pdf.
20. Ronan, K. R. & Johnston, D. M. (2001). Correlates of Hazard Education Programs for Youth. *Risk Analysis: An International Journal,* 21**(6),** 1055-1064.
21. Ronan, K. R., & Johnston, D. M. (2005). *Promoting community resilience in disasters: the role for schools, youth, and families.* New York: Springer. New York: Springer.
22. 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.
23. Ronan, K. R., Haynes, K., Towers, B., Alisic, E., Ireland, N., Amri, A., ... & 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.
24. Sayer, A. (1992). *Method in Social Science: A realist approach* (2nd Ed.). London: Routledge.
25. Spencer, L., & Ritchie, J. (2002). Qualitative data analysis for applied policy research. *Analyzing qualitative data*, 187-208. [Bryman A. and Burgess G.R. editors]. London: Routledge.
26. Srivastava, P., & Hopwood, N. (2009). A practical iterative framework for qualitative data analysis. *International journal of qualitative methods*, 8(1), 76-84.
27. Stringer, E. T. (2013). *Action research*. Sage Publications.
28. Tanner, T. & Seballos, F. (2012). Children, Climate Change and Disasters, IDS in Focus Policy Briefing, 23. Brighton: IDS.
29. 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.
30. Towers, B., Ronan, K. R., Haynes, K., Petal, M., Davie, S., ... Mackay, A. and Noonan, R. (2016). Disaster resilience education: a practice framework for Australian emergency management agencies. Bushfire and Natural Hazards CRC.
31. World Health Organization (WHO) (2011). Disaster risk management for health fact sheets: Disaster risk management for health: Children health. Global Platform-May 2011.
32. Zuber-Skerrit, O. (1991). A theoretical framework for action research.