

Final project report for 1st September 2013 to 23rd February 2017, funded through the Earthquake Commission University Post-Graduate Grants Programme (EQC 13/U647).

Research title : **Children with Disabilities and Disasters Risk Reduction in New Zealand**

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The final research reporting (in line with the contract terms of agreement section 5) is in the form of presenting journal articles and a PhD thesis which is currently under examination: a process expected to take about three months. A list of four journal articles already published or accepted and one currently under review is included. Therefore, this report aims to present an overview of the research process and highlight important research activities, and associated outcomes. It has been divided into three sections. The first section provides one technical abstract and a laypersons abstract. The second section highlights key research process and activities, while the third section gives a list of project outcomes.

Technical abstract

The global rise in the number of disasters is largely due to the interplay between environmental and human factors. Children, and especially children with disabilities, are disproportionately impacted by disasters, with an estimated seven million children affected worldwide annually. Children with disabilities can have increased vulnerabilities because of mobility difficulties, pre-existing medical conditions, existing socio-economic barriers and policies that fail to recognise their diverse needs. Indeed, researchers and practitioners have historically overlooked the experiences and needs of children, particularly so for those with disabilities, who are disproportionately affected by natural hazards and disasters. Their capacities, needs and, importantly, their potential roles in disaster risk reduction (DRR) have received little consideration from researchers and policy makers.

This report draws on findings of a multi-case study of three New Zealand schools working with children with diverse disabilities. The schools are in the regions of Canterbury, Hawke's Bay and Auckland. It aims to generate new information to help inform DRR and give direction and a holistic framework towards the development of an inclusive approach to DRR. This orientation aims to specifically integrate the experiences, perspectives and needs of children with disabilities. Although grounded in disaster studies, this thesis frequently draws upon the wider scholarship related to children, participatory approaches and disability. The central goal of the study is to assess and interpret the experiences of children with disabilities in dealing with natural hazards and to identify their actual and potential contribution to DRR. It presents the use of flexible participatory tools that supported a sustained continuum of engagement among children with diverse disabilities, skills, and experiences. Crucially, this work offers a bridge and conceptual framework that recognizes communication as a two-way process between adults and children by requiring adults to learn how children express their views, thus according participants a voice in DRR research.

The case studies reveal considerable variation on how children with disabilities access available resources and perceive, face and cope with natural hazards. The

research also identifies constraints and complexities towards achieving disability-inclusive DRR and shows that ideas about DRR are shaped and influenced by socio-economic structures. Based on the participants' existing variation of potential vulnerabilities and capacities (individual and group) and their potential contribution in DRR, the thesis offers suggestions for policy and practice of a more inclusive approach to DRR. It emphasises the need to direct resources and programmes that facilitate and strengthen effective communication between adults and children, to encourage sustained participation along children's spectrum of abilities. Finally, the research recommends a framework incorporating a shift in attitude to children with disabilities as integral and active participants in DRR.

Layperson's abstract

Every year, approximately seven million children with disabilities are affected by disasters worldwide. This figure highlights the particular vulnerability these children face from natural hazards. They are often excluded from disaster risk reduction (DRR) planning and portrayed as 'helpless' in the face of disasters. Children with disabilities have many different abilities, skills and capacities that result in different levels of vulnerability. Although there is a growing move world-wide to promote the rights of people with disabilities, these children still receive little attention. They are overlooked by researchers and policy makers, so inclusive DRR planning is rare. This report draws on findings of a study of three New Zealand schools, working with children with a variety of disabilities, on their experiences in the face of natural hazards. The schools are in the regions of Canterbury, Hawke's Bay and Auckland. It reports on challenges they may face and identifies their capacities within a school setting, by focusing on their perceptions and experiences through the voice of both the children themselves and adult participants. The research also identifies difficulties that exist in achieving disability-inclusive DRR, and shows that ideas about DRR are shaped and influenced by the social and economic factors affecting them. Based on the participants' existing variety of potential vulnerabilities and capacities (individual and group) and their potential contribution in DRR, the research offers suggestions for policy and practice of a more inclusive approach to DRR. It emphasises the need to target resources and programmes that aid and improve effective communication between adults and children. This will encourage a full participation in DRR, recognising children's spectrum of abilities.

RESEARCH ACTIVITIES

The research goal was to assess and interpret the experiences of children with disabilities in facing natural hazards, and identify their actual and potential contribution to disaster risk reduction (DRR). The research study areas were Hawke's Bay, Christchurch and Auckland, forming three case studies each represented by one school that works with children with disabilities. In particular, the research focused on children with disabilities and the schools they currently attend. The project report writing and associated journal articles was preceded by eight important activities:

1. Completion of the research proposal (September-October 2013)

A research proposal was fully developed and presented at the School of Environment seminar series at The University of Auckland (20/10/2013). This is one of the requirements of the university, before progressing to the research stage.

2. Identification of three specific case studies regions/schools (October- November 2013)

The researcher made contacts and/or visits, to six potential schools initially and finally agreed to establish partnership with three case study schools (Figure 1.1). They are as follows: Mount Richmond special school in Auckland, Hohepa School in Napier (Hawke's Bay) and Allenvale School in Christchurch.



Figure 1.1. Map of New Zealand-case study regions.
 Source: Created using ArcGIS

3. Identification of research activities (October–December 2013)

Although the research activities were not planned in full detail during initial visits, consultation was carried out with the teachers and principals of respective schools to agree on the approach and the nature of the research activities. These are:

- Focus groups discussions including participatory mapping (drawing and making 3D maps of their local school environment) as a tool to facilitate discussion.
- Semi-structured interviews with key research participants. They include the principals, two teachers, two care-givers and two children from each of the case study regions. The interviews were largely designed to be follow ups and/or to clarify unclear issues arising from focus group discussions regarding DRR strategies within the school community.

- Semi-structured interviews of representatives of selected stakeholders of disaster risk reduction and health and disability (Ministry of Civil Defence, Ministry of Education, District Health Board) in each of the three regions
- Observation of existing DRR practices in school including a drop cover and hold simulations during an earthquake.

4. Human ethics application (January 2014-May 2014)

The researcher, with advice from the supervision team and ethics advisors at the University of Auckland, went through human ethics requirements/application for approval prior to undertaking field work activities. This process was completed in April 2014 and Ethics approval from the University of Auckland was obtained on 12th May 2014. The approval allowed the project to progress to the field work phase.

5. Seeking consent to conduct research from schools (June-July 2014)

The researcher undertook to visit all the participating schools in Auckland, Hawke's Bay and Christchurch. The aim was to initially seek consent from the school leadership (Board of Governors and School Principal) and then agree on the distribution process of Participant Information Sheet (PIS), and Consent Forms for all potential participants. The School Principals agreed to use their contacts to distribute all the PIS and consent forms to the children, teachers and care givers.

The three visits were also crucial in devising detailed research activities and setting tentative dates for these activities. The meeting aided in building the much needed rapport with the potential research participants, particularly children with diverse disabilities. Each school provided a general list of disabilities among the selected children participants which could be one or more of: autistic spectrum disorders, learning, hearing, seeing, mobility/physical disabilities and other degenerative conditions¹ (Table1).

¹ Although the schools did not disclose or directly link each child with a disability, the schools allowed the researcher to access their special class units for children who have diverse disabilities

Table 1:1 Focus group/workshop participants

<i>Case study (School)</i>	<i>Class size</i>	<i>Disabilities disclosed by each school</i>	<i>Associated challenges</i>
Christchurch	10	Autistic spectrum disorders; learning, visual, mobility difficulties and other degenerative conditions	Difficulties with comprehension, memory, communication, hearing, vision, relating to others, mobility issues, anxiety at changes in routines and obsessive-compulsive tendencies.
Hawke's Bay	8	Autistic spectrum disorders; learning, hearing, and mobility difficulties, and fragile X syndrome	
Auckland	9	Autistic spectrum disorders; learning and mobility difficulties, and other degenerative conditions	

6. Data collection (August 2014-April 2016)

The data collection phase of the research project was planned to align with the participating school's schedule of programmes. The aim was to avoid undue disruption of existing school programmes. Instead, the research activities (focus groups and semi-structured interviews) were integrated to supplement the existing school calendar of events. The activities carried out for each school included:

- Meeting with teachers and students to explain the research project, answer questions regarding the project process and obtain their consent and assent respectively for their participation.
- Mapping activities with children with disabilities to facilitate focus group discussions. Examples include, among others, drawing of maps and making 3D maps representing their class and school environment, identifying both safe and unsafe locations within their school, and also identifying capacities and vulnerabilities within their school.

- Observation of school disaster simulation drills. The aim is to understand challenges and insights into the experiences of children with disabilities during school disaster simulation drills carried out once a term.
- Semi-structured interviews with selected participants. Two teachers, two care-givers and two students were interviewed in each of the three schools. The interviews detailed follow ups to the focus group activities. They also sought clarification of details regarding DRR in school.
- Semi-structured interviews of representatives of relevant stakeholders in DRR, health and disability (Civil Defence officials, New Zealand Red Cross, Ministry of Education).
- Transcription of focus groups and semi-structured interviews, and verification of transcripts to ensure that records were accurate. Participants were given an opportunity to clarify issues and/or allowed to make necessary changes.

7. Data analysis and write up (May –November 2016)

The data analysis process started with an initial detailed description of each case and the themes within ('within-the case' analysis). This is followed by a thematic analysis across the cases ('cross-case' analysis). The goal is to look for themes that transcend the case (Yin, 2009). This study used two forms of triangulation (Figure 2). Data triangulation (data remains the same in different contexts or when obtaining similar categories of data); and methodological triangulation (one approach followed by another) (Yin, 2014). Information was also obtained from the same children participants using different methods: focus groups, semi-structured interviews, participant observations at different occasions also qualify as a set of "multiple" sources (Yin, 2014). In particular, focus groups were the main approach of data collection since the approach incorporated simple participatory methods to engage the children to provide their perspective and insight into their experiences of natural hazards and disaster risk.

Focus groups were used in conjunction with semi-structured interviews, participant observations and the use of documents to provide the needed triangulation (Figure 1:2) regarding the children's experiences and perspectives in the face of natural hazards.

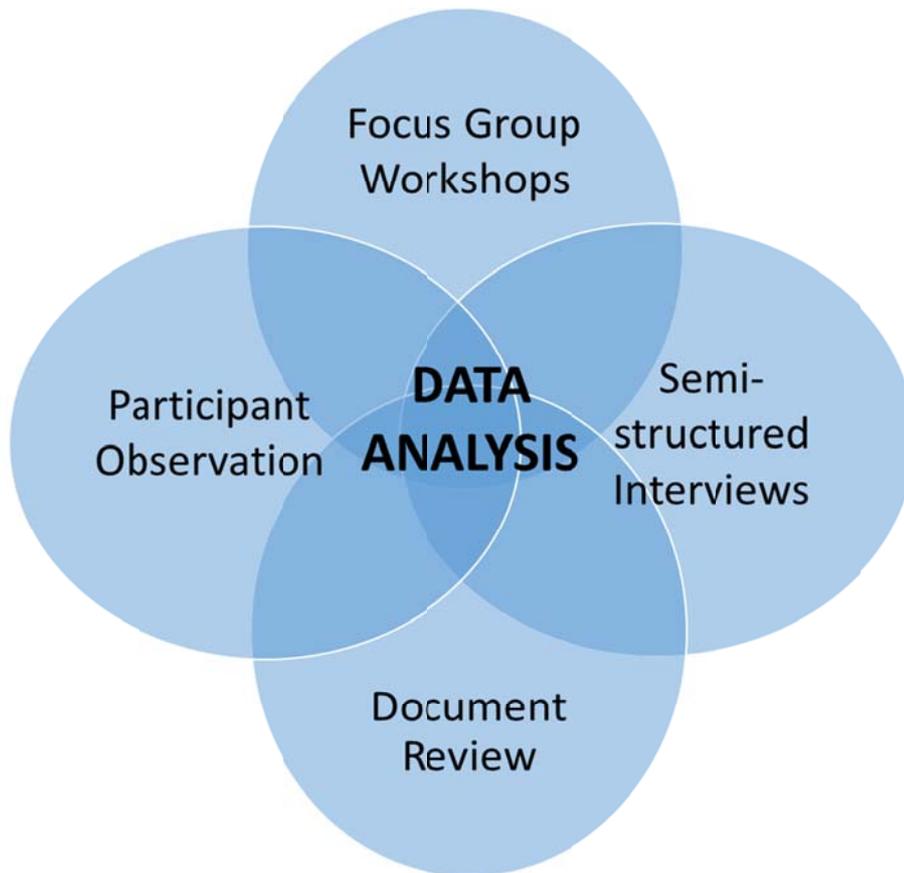


Figure 1.2: Data collection and triangulation process

RESEARCH OUTCOME

Overall, the thesis used a combination of explanation building and cross-case synthesis, guided by thematic data analysis steps (Braun and Clark, 2006), with the aid of NVivo computer software. A detailed research process and results are presented in the four journal articles 2-5 (Table 1.2). Also, with support from the University of Auckland, the research results were disseminated through the local, national and international conferences listed below:

1. Conference presentations:

- Ronoh S., Gaillard J.C., Marlowe J. (2016) Integrating children with disabilities in disaster risk reduction. 4th International Conference on Urban Disaster Reduction (4ICUDR), 17-20 October 2016, Wellington, New Zealand.
- Ronoh S., Gaillard J.C., Marlowe J. (2016) Children with disabilities in disaster risk reduction. 4th Bi-annual International Humanitarian Association, the World Conference on Humanitarian Studies (WCHS), 5-8 March 2016, Addis Ababa, Ethiopia.
- Ronoh S., Gaillard J.C., Marlowe J. (2014) Children with disabilities and disaster risk reduction: A case study of Christchurch. 2014 annual conference of the Sociological Association of Aotearoa New Zealand, 4-5 December 2014, Christchurch, New Zealand.

2. Poster presentation:

- Ronoh S., Gaillard J.C., Marlowe J. (2016) *Integrating children with disabilities in disaster risk reduction*. 9th Australasian Natural Hazards Management Conference, 1-2 June 2016, Wellington, New Zealand

3. Journal articles:

The research aims to provide new insights into the experiences, perceptions and needs of children with disabilities in the particular context of a disaster risk. Due to the multi-disciplinary nature of the study, which relied on children, disability, education and disaster fields, the publications targeted a fairly wide range of journals and policy briefs. These articles (Table 1.2) aim to make a significant contribution to the development of targeted DRR policies for integrating children with disabilities.

Table 1.2: List of Journal Articles

<i>Article Chapter</i>	<i>Title</i>	<i>Authors</i>	<i>Journal</i>	<i>Status</i>
Article 1	Children with	Steve Ronoh	International	Published

Chapter 2	disabilities and disaster risk reduction: a review	JC Gaillard Jay Marlowe	Journal of Disaster Risk Science	
Article 2 Chapter 3	Bridging the Participatory Gap: Children with disabilities and Disaster Risk Reduction	Steve Ronoh JC Gaillard Jay Marlowe	International Journal of Mass Emergencies and Disasters	Revised and resubmitted
Article 3 Chapter 4	Children with disabilities and disaster preparedness: a case study of Christchurch	Steve Ronoh JC Gaillard Jay Marlowe	Kōtuitui: New Zealand Journal of Social Sciences	Published
Article 4 Chapter 5	Disability through an Inclusive Lens: Disaster Risk Reduction in Schools	Steve Ronoh	Disaster Prevention and Management: An International Journal	Published
Article 5 Chapter 6	Children with Disabilities in Disability-Inclusive Disaster Risk Reduction – focussing on school settings	Steve Ronoh JC Gaillard Jay Marlowe	Policy Futures in Education	Accepted (In press)

Summary of published Journal articles:

The first article undertakes a review of literature to identify gaps in disability-inclusive DRR and highlights the existing research and knowledge gap. It emphasises the need for an understanding of the perceptions, experiences and needs of children with disabilities as a first step towards their involvement in DRR initiatives. The article reviews the key concepts of vulnerability, disability, and capacity, which are interconnected in determining access, or its lack, to resources vital for DRR. The paper points out that many planners tend to overlook people's experiences of disaster and the different strategies they use to cope with and respond to disasters within the recovery process. Thus, the review specifically reinforces the need for disaster research that directly engages children with disabilities, and obtains their perspectives in DRR planning, something generally lacking in the academic literature.

The second article provides a rationale for using participatory tools to engage children with disabilities in DRR research. It argues for focus to be placed on flexible tools to bridge the participatory gap and suggests approaches that maximize children's involvement. These facilitate a two-way communication between children and adults (teachers, care givers and relevant stakeholders).

The third article presents children's perspectives and experiences of the February 2011 Christchurch earthquake. It critically examines the understanding, perception, experience, and preparedness of children with disabilities in the face of a disaster in the context of Christchurch. The paper reflects upon key concepts of vulnerability and capacity in relation to access to DRR resources and aims to contribute to the role of children with disabilities in theory, research and practice. It calls for developing a framework that provides avenues for children's involvement in initiatives. These initiatives give a more accurate evidence base for informing improvements in DRR policy and practice.

The fourth article uses an inclusive lens to explore pathways, and considers, through the voices of children and adult participants, the complexities in implementing effective disaster risk reduction (DRR) in a school setting. It aims to contribute to

ongoing DRR efforts: adds new information to the disaster literature on the role of schools in disability-inclusive DRR, identifies obstacles and suggests policy recommendations that consider their needs in DRR.

The fifth article complements the findings of the preceding article by identifying through the voice of children and adult participants, associated gaps and constraints to disability-inclusive DRR. It highlights the centrality of the need for a shift in attitude and in managing skewed power relations (in favour of adults) where children with disabilities contribute to DRR initiatives. The paper makes recommendations that acknowledge diversity and ensure that children with disabilities (those marginalized) can become stakeholders and are integrated in inclusive DRR policy and practice.