


Child-centred disaster risk reduction in Australia: progress, gaps and opportunities

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ABSTRACT

The primary objective of child-centred disaster risk reduction (CC-DRR) is to strengthen children's skills so that they understand the risk of disasters in their communities and are able to play a role in reducing the risks and impacts of potential disasters. Historically, the approaches embodied by CC-DRR have remained on the margins of Australian disaster risk reduction (DRR) policy, research and practice. More recently CC-DRR has been recognised as a valuable component of disaster risk reduction frameworks at the local, regional and national levels and this is reflected in new initiatives in a variety of domains, including disaster resilience education, school emergency management, and community-based programming. This paper provides a progress report on some of these of these initiatives and identifies several gaps and opportunities that are still waiting to be addressed.

Introduction

Emerging as a distinct approach to disaster risk reduction over the last decade, the primary objective of child-centred disaster risk reduction is to strengthen children's skills so that they understand the risk of disasters in their communities and are able to play a role in reducing the risks and impacts of potential disasters (Benson & Bugge 2007). Underpinned by a human rights approach to community development and guided by the United Nations Convention on the Rights of the Child (United Nations 1989), CC-DRR has its origins in participatory approaches to child-centred community development (c.f. Hart 1997, Lansdown 2001, 2005) and has been championed in the

international development arena by non-government organisations such as Save the Children and Plan International (c.f. Benson & Bugge 2007, Plan-UK 2007). Historically, the approaches embodied by CC-DRR have remained on the margins of Australian DRR policy, research and practice (Towers 2012). More recently CC-DRR has been recognised as a valuable component of DRR frameworks at the local, regional and national level and this is reflected in new initiatives in a variety of domains, including disaster resilience education, school emergency management, and community-based programming.

Disaster resilience education: 'Educating the Educators' and DRASEN

In an effort to increase the uptake of Disaster Resilience Education (DRE)¹ (DRASEN 2013) in Australian schools, the Australian Red Cross, in partnership with the Australian Emergency Management Institute (AEMI), has conducted an Australian Government National Emergency Management Project titled 'Educating the Educators' (Red Cross 2013). The aim of the project is to develop teacher confidence in the effective delivery of disaster resilience education in the classroom and, by extension, build capacity for disaster resilience among primary and secondary school students. To date, the project has mapped existing Australian disaster resilience education resources from emergency management agencies and other sources to key national curriculum learning areas (i.e. English, Maths, History, Science and Geography), as well as general capabilities and cross-curricular capabilities (ACARA 2013, Red Cross 2013). The mapping report, which will be publicly available through the AEMI Knowledge Hub (AEMI 2013a) and the AEMI Schools website (AEMI 2013b) shows that there is a broad range of opportunities for teachers to

¹ As defined by DRASEN (2013) DRE 'builds knowledge, skills and confidence to problem solve and take action before, during and after a disaster. Through empowerment and motivation, Disaster Resilience Education supports the development of a culture of safety and preparedness and thus disaster resilient communities' (p.6).

incorporate DRE messages across the curriculum and it is hoped that Australian emergency management agencies will use this to inform future resource development. The report provides teachers with a valuable tool accessing and selecting DRE resources appropriate to their specific needs.

The other important focus of the project has been to raise teacher awareness of the importance of including disaster resilience education in primary and secondary school curriculum. The project teamed up with a primary school where three classes of year six students were working on a term-long integrated study inquiry project on 'Earth's natural processes and their impact on people and the environment'. Halfway through the inquiry process Red Cross, Bureau of Meteorology and AEMI personnel visited the school to address the students and be interviewed by them. The experts all commented favourably about the level of understanding demonstrated by the students through the sophistication of the questions they posed. This has developed into a valuable case study of how DRE can be incorporated into multiple learning areas for both content and skill development and provides a legacy of student created resources to promote DRE to teachers. These resources will be freely available through the AEMI Knowledge Hub and AEMI schools website.

A key factor in the success of the 'Educating the Educators' project has been the concurrent establishment of the Disaster Resilient Australia Schools Education Network (DRASEN). DRASEN was developed with support from the AEMI Board due to significant interest in embedding disaster resilience education in the new Australian Curriculum. Emergency services agencies across Australia have also expressed an interest in the facilitation of a collaborative space in which DRE programs could be discussed, informed, and critiqued (AEMI 2013c). Since its inception in late 2012, DRASEN has provided a voice for agencies and policy makers at a strategic level and acted as a national broker of engagement and strategic

advice between education professionals and emergency services agencies in all aspects of disaster resilience education (AEMI 2013c). With a membership that includes representatives from emergency management agencies, non-government organisations, education departments, subject associations, and academia, DRASEN convenes at least twice a year and maintains activity and conversation via online forums on the AEMI Knowledge Hub. The first Australian network of its kind, DRASEN is providing a key space in which DRE practitioners, researchers and policy makers can share knowledge, skills and resources and build capacity for the development and delivery of evidence-based, best-practice DRE curriculum and pedagogy in the Australian education sector.

Community-based programming for youth: the Cardinia Hills Youth Fire Readiness Project

The Cardinia Hills Youth Fire Readiness Project is a behavioural change program enabling a peer-led cultural change in the attitudes and readiness of local youth toward fire safety. The project is funded by the Department of Planning and Community Development and the Shire of Cardinia. The program has been designed to complement existing and incoming CFA *Fire Safe kids* and CFA *Fire Safe Youth* sessions and to provide meaningful community and school-based events through which participants can learn about and promote fire safety. The program targets the 11 to 17 year age group and takes an 'all hazards all agencies' approach. It is focussed on providing consistent messaging and consistent timing of events to give local, contextualised meaning to wider community fire safety campaigns. To support a trusting and engaged relationship between youth and local emergency management authorities, the program incorporates localised contact with representatives from regional and local CFA, Victoria Police, Ambulance Victoria and Shire of Cardinia emergency management staff. The



Students at Gembrook Primary School participate in a fire warden exercise.

Image: Fiona Seywell

program content is based on the rationale that in the event of a small or large scale fire, a range of skills and attributes are needed. In order to support the 'fire readiness' abilities of young people, opportunities for participants to increase their skills in areas beyond fire science and fire risk reduction are required. Hence, the program also incorporates opportunities for young people to extend their understanding of community, leadership and psychological preparedness.

While monitoring and evaluation of program outcomes is ongoing, preliminary findings indicate that the project has had a positive impact on youth knowledge, attitudes and behaviour. In particular, participants were highly motivated to create engaging fire safety activities for their peers and the wider community. When asked to identify effective activities to engage adolescents, students emphasised the importance of approaches that promote a sense of empathy and connectedness through sharing the stories and experiences of survivors and first responders. They also recommended the use of interactive social media tools—not only for the dissemination of fire safety information, but for referral to support services in the aftermath of a fire event. Importantly, however, the young people had low expectations that their views and ideas would be acted on by the wider education and emergency management sectors. This represents a major issue because such a perception could erode the motivation and commitment of youth over time. Therefore, the success of community-based programs for young people will likely be enhanced by creating formal partnerships between youth groups and emergency management agencies. Such partnerships would help to build trust, provide a formal mechanism for the implementation of youth projects and activities, and ensure that the motivation and commitment of young people is sustained over time.

Bridging a service gap: fire education for preschool children

For many years, Australian fire agencies have been delivering fire education programs in primary schools. While these programs have tended to focus on residential fire safety, information about bushfire safety has also been incorporated. Delivering information about fire safety through this mechanism with this cohort can work extremely well as they are a captive audience and normally attending registered schools aligned to a formal education network. Apart from a couple of exceptions (i.e. DFES 2013, NSW Fire and Rescue 2013), preschool children have not been catered for to the same extent as their primary-school counterparts. Given the extreme risk profile of this age-group, this represents a major gap in program delivery. Numerous Australian and international studies have found that children under the four years of age are more likely to be injured or killed in residential fires than any other age group (AFAC 2005, Byard, Lipsett & Gilbert 2000, Chen *et al.* 2009, Children's Safety Network 1991, Harrison & Steele 2006, Shai & Lupinacci 2003, Scholer *et al.* 1998, Warda *et al.* 1999). Importantly, one of the main reasons for the high incidence of fatalities among this age group is child fireplay (AFAC 2005, Chen *et al.* 2009, Everts 2011, Istre *et al.* 2002, Shai & Lupinacci 2003, Simonsen & Bullis 2001).

One reason fire safety programs have not focused more heavily on the preschool cohort relates to the perception that younger children do not have the cognitive or behavioural capacity to understand or reduce fire risk in their homes (Adler & Nunn 1993). It has also been suggested that teaching children about fire risk at this age could trigger a curiosity about fire and lead to increased levels of fireplay (Adler & Nunn 1993). However, empirical research challenges these assumptions. In one study by McConnell, Leeming & Dwyer (1996), preschool children aged 3, 4 and 5 years received an 18-week fire-safety training program. At each of the three ages, children in the treatment group showed significantly greater knowledge gains from



Senior firefighter Tim Collins demonstrates the clothing and equipment firefighters use to preschool children.

pre-test to post-test than did children in the comparison group. Interestingly, 3-year-olds showed the greatest change of any age group. These findings provide support for the value of training preschool children in fire safety as an important strategy for injury prevention in this age group. In a more recent study, Morrongiello and colleagues (2012) used a pre-post randomized design to evaluate the effectiveness of a computer game for teaching fire safety information to young children (3.5 to 6 years). The results indicated significant improvements in the children's understanding of how to react in different hazardous situations.

These studies provide an important evidence base for extending the delivery of fire education to preschool aged children. The key here is to ensure that information and activities are age appropriate and safe. While fire education in primary schools is generally delivered by fire agency personnel, the ideal people to teach preschool children about safety and hazard risk reduction are their parents and caregivers (including early childhood educators). Not only are these people best placed to present messages in a way that makes them more accessible to young children, they can also provide opportunities to practise and consolidate new knowledge and skills. Importantly, however, families and caregivers will need support in order to successfully teach these concepts. Correct and consistent information should be developed by technical experts and disseminated through trusted community networks, including emergency services organisations, and early childhood health and education services. Importantly, new programs in this realm need to be subjected to rigorous monitoring and evaluation studies to ensure they are having the intended effects and that those effects are sustained over time.

School emergency management: progress in Victoria

Following the 2009 Black Saturday bushfires the Victorian Government Department of Education and Early Childhood Development (DEECD) initiated a review of bushfire and emergency management processes and procedures. The Department took immediate steps to implement a range of initiatives to improve bushfire safety in schools in the short-term and move towards an all hazards approach to emergency planning in the longer-term.

Outcomes of the review focussed on children's services in an attempt to ensure that no child or member of staff was exposed to an unacceptable level of bushfire risk. These included the establishment of the Bushfire At-Risk Register (BARR) and a policy for pre-emptive closures on designated Code Red days of schools. In 2010 approximately 1 400 schools and licensed children's services organisations self-nominated for the register. Since the initial inception of the BARR a more methodical and rationalised approach has been developed that better reflects each facility's actual risk of bushfire. Subsequently, the number of facilities listed on the BARR has reduced from approximately 1 400 in 2009, to 562 for the 2010-11 bushfire season

(DEECD 2013). Although there were two Code Red days in January 2010, they both occurred during the school holiday period with little or no impact on schools or children's services facilities. To date there have been no Code Red days declared by the Victorian Fire Services Commissioner, and as such, DEECD has never actually implemented its Pre-Emptive Closure Procedures.

In addition to BARR, the Department has also developed a series of guides and templates to enable all schools and children's services to produce standardised, facility-based emergency management plans. The introduction of these plans was supported by training sessions and through the DEECD's regional offices. To ensure compliance in the development of these plans, all government schools and children's services on the BARR are required to review and resubmit their emergency management plan annually. Other schools and children's services are also able to submit their plans to DEECD but are not required to do so. While the initial focus of these plans was on bushfire risk, recent revisions of plans has seen them move towards an all hazards approach based on each facility's risk profile.

Government schools on the BARR have also been part of a program designed to ensure suitable shelter-in-place options are available. These have been developed through an inspection and risk assessment where suitable buildings are inspected and works undertaken to improve their fire safety. The DEECD has also engaged with the Victorian Fire Services Commissioner in a pilot program to refurbish two primary schools to act as community fire refuges for the general public should this be required in an emergency situation. This has been a very complex, ground-breaking process that has seen facilities designed and used as classrooms transformed to meet the stringent requirements of a fire refuge.

Another key innovation of the Department has been the development of EduMap, a secured web-based mapping program that brings together layers of information from a variety of data sources. This enables the location and plotting of all schools and children's services across the state. Additional features of EduMap include the ability to:

- plot the contract bus routes for all schools including government, specialist, and some catholic schools
- overlay the CFA's incidents and warnings site
- locate both private and government owned school camps, and
- access contact details for all listed facilities.

In order to ensure continuous improvement of these programs and initiatives, the DEECD has established a dedicated Emergency Management Division to constantly plan, monitor and respond to incidents and emergencies. While many of the processes and procedures implemented have not been put to the ultimate test, the preparedness of schools and children's services across the state has progressed significantly as a result of lessons learned from the Black Saturday disaster.

Child participation in policy development and decision-making

A key component of CC-DRR is child participation in policy development and decision-making (Mitchell, Tanner & Haynes 2009). Child participation in this realm is supported by Article 12 of the United Nations Convention on the Rights of the Child² which reads:

'States Parties shall assure to the child who is capable of forming his or her own views the right to express those views freely in all matters affecting the child, the views of the child being given due weight in accordance with the age and maturity of the child' and 'For this purpose the child shall in particular be provided the opportunity to be heard in any judicial and administrative proceedings affecting the child, either directly, or through a representative or appropriate body, in a manner consistent with the procedural rules of national law'.

It could be fairly argued that despite Australia being a signatory to the Convention, Australian children have not been afforded the opportunity to meaningfully participate in emergency management policy development and decision-making. However, there are two established approaches which could be employed to reliably address this gap: *consultative processes* and *participative initiatives*.

Consultative processes

Consultative processes are adult initiated and managed processes to obtain information from children with the aim of improving legislation, policies or services (Lansdown, 2001, 2005, Tisdall & Davis 2004). They involve recognition by adults in positions of power of the validity of children's experiences, that it can and does differ from the experience of adults and that it needs to inform decision-making processes (Lansdown 2001, 2005, Tisdall & Davis 2004). Traditionally, children and young people have not been consulted in the development of Australian emergency management legislation, policy or services (Davies 2013, Towers 2012). While children and young people were heavily impacted by the Black Saturday bushfires, their voices were absent from the Victorian Bushfires Royal Commission (Teague, McLeod & Pascoe 2010). Consequently, many of the policy decisions made in response to the Commission's findings were not informed by the lived experiences and perspectives of children and young people, even when the policies in question directly affected them. For example, while the school closure policy outlined above will directly affect children's exposure and vulnerability to bushfire, this group was not consulted during the policy development phase. It has been argued by various parties, including young people themselves, that excluding students from the development of the school closure policy has meant that numerous essential safety considerations have been overlooked (Piazza 2011).

Participative initiatives

Participative initiatives aim to strengthen processes of democracy and create opportunities for children to understand and apply democratic principles (Lansdown, 2001). In contrast to consultative processes, participative initiatives involve the creation of structures through which children can challenge or influence outcomes, thereby necessitating renegotiation of traditional relationships between children and adults. A striking example of participative initiatives for CC-DRR comes from the village of Santa Paz in Southern Leyte, Philippines. In 2007, the Philippine Government Mines and Geosciences Bureau identified the local school as being highly exposed to landslide hazards and recommended that it be relocated to a safer location in a neighbouring village. Although the children at the school supported the relocation, many adults in the village were against it and launched a campaign opposing the relocation. In response, the children launched a counter-campaign aimed at educating the community about landslide hazards and a referendum decided in favour of relocation (Mitchell, Tanner & Haynes 2009). While examples of participative initiatives for children and young people in the Australian emergency management domain are rare, there are various ways they could be used to increase the involvement of children to influence decision-making. At the local level, school-based student representative councils can form emergency management sub-committees responsible for ensuring that school emergency plans adequately meet the needs of children and young people. Local government can also facilitate the establishment of a formal youth committee to represent the views and perspectives of local young people.

It is important to emphasise that for consultative processes and participative initiatives to succeed, several key conditions must be met. For example, it is essential to ensure that the children and youth involved are truly representative of the local youth population in terms of age, gender, race, religion, and socio-economic status (Lansdown 2001). It is also important that there are clear principles and ground-rules to ensure that adults do not use children to promote their own agendas. This requires that children and youth are given the time and resources they need to make informed decisions and meaningfully contribute to the policy-making process. At the same time, it is important that the time spent on participatory projects does not detract from other important areas of children's lives, such as academic study, recreational activities, and household responsibilities. However, if these conditions can be met, both consultative processes and participative initiatives provide valuable opportunities for children and young people to express their views in a way that respects and protects their rights, builds their capacity to actively participate in policy development and decision-making and, most importantly, minimises their exposure and vulnerability to hazards and disasters.

² At: www.unicef.org/cbsc/files/Articles12-13-17.pdf.

Children as risk communicators

Information sharing is perhaps one of the easiest means for children and young people to participate in disaster risk reduction. One communication channel widely heralded as a means to reduce risks is between schools, children and their families. However, this assumption is based on anecdotal evidence and little, if any, robust empirical research exists. For example, in a series of subsequent survey-based correlational and quasi-experimental studies with 5 to 13-year-olds, Johnston and colleagues (Ronan & Johnston 2003, Finnis *et al.* 2010, Finnis *et al.* 2004, Ronan, Crellin & Johnston 2010, Ronan & Johnston 2001, Ronan *et al.* 2006) found that although school-based hazards education was associated with an increase in children's knowledge of DRR, evidence that it promoted increased levels of hazard mitigation and preparedness within the home was not forthcoming. Where it did have an effect, it was most often in relation to low cost, low effort adjustments such as having a torch, a radio or a first aid kit. Arguably, these are items that many households would have in their possession regardless of their exposure to hazards. Other more expensive adjustments, or those that would require technical expertise, were not related in any way to school-based hazards education. Evidence that school-based hazards education had exerted any influence in the realm of family emergency planning was also lacking with the majority of children reporting low levels of emergency planning regardless of their involvement in hazard education.

These findings are consistent with a large body of adult-based research which has failed to demonstrate any clear relationship between hazard education programs, hazard knowledge, and levels of household mitigation or preparedness (see Sims and Baumann 1983 and Solberg, Rossetto & Joffe 2010 for extensive reviews). Rather, a significant amount of research has now demonstrated that it is not knowledge deficit or 'inaccurate' risk perceptions that are the drivers of disaster risks: instead it is underlying vulnerabilities relating to a range of socio-economic and political factors such as age, gender, race, religion, and socio-economic status (Hewitt 1983, 1997, Maskrey 1989, Mustafa 1998, O'Keefe, Westgate & Wisner 1976, Oliver-Smith 1986, Whittaker, Handmer & Mercer. 2012, Wisner *et al.* 2004). Therefore, while information and knowledge are important, they alone will not reduce disasters because any increase in knowledge must be supported with the associated services, policy and practice to actively reduce risks (Wisner *et al.* 2004). Thus, although children and young people can certainly share information, research is needed in a developed world context in order to identify the best methods for doing so that effectively reduces risk.

Recent research in a developing country context is instructive in this case. In the Philippines, Haynes and Tanner (2013) examined the use of participatory videos and interactive screening workshops as a means for promoting the messages of young people further into the community and policy sphere. This method supported young people to increase their knowledge

of the disaster risks they faced and to communicate their knowledge to their peers, the wider community, and decision-makers. However, the interactive filming and screening workshops also enabled a process of advocacy, mobilisation and implementation to actually bring about policy and procedural changes to reduce risks. For example, one of the films the children produced explored the issue of chromite mining near their village. The children interviewed a range of community members, including those who were involved in the mining and those who were not. They identified that the flood risk to their village had increased due to the mining because the land had been denuded of forest cover, the river had become silted, and old mining pits were left full of water. The children called a local and regional community meeting to discuss these issues and they used their film to educate the wider community on their discoveries. Much of the discussion centred on livelihoods and the need for the chromite mining to support families within the village. However, the focus of the meetings, which were led by the children, was on solutions and positive actions that children, adults and policy makers could undertake. The village leaders agreed to support a tree planting campaign, to stop mining near the village, to fill in old mining pits, and to support livelihood diversification. In addition to managing the tree planting scheme and assisting with filling in the mining pits the children also began an education campaign to increase awareness of flood risks. The benefits of the participatory video and community screening process went beyond education and awareness and the children were able to advocate for, and take part in, actions that actually reduced disaster risks.

There is significant scope for the use of participatory video in an Australian educational context. However, several caveats are in order. First, it is clear from the Philippines project that the success of participatory video work depends heavily on the ability of the adults involved to *guide* the children without *directing* them. This requires that adults are well-trained in the design and implementation of participatory video projects and are able to leave their own agendas to one side for the duration of the project. Second, and most challenging of all, is that the underlying causes of the local disaster risk are often deeply rooted. For example, in the Philippines, policy makers benefit both legally and illegally from mining activities. Arguably, the extent to which children and young people can challenge the kinds of longstanding governance issues that enable corruption is limited. Therefore it is essential that the expectations of the children and adults are carefully managed and project goals are framed as long-term pursuits. With these caveats in mind, Australian educators and researchers are encouraged to explore the possibilities of participatory video as a tool for capitalising on the energy and enthusiasm of children and youth in the DRR sphere.

Conclusion

This paper has provided a progress report on some recent CC-DRR initiatives and identified some of the gaps that prevail in the Australian context. Major progress is being made in the realms of school-based disaster resilience education and school emergency management. There has also been some progress in the field of community-based programming for youth. Taken together, these developments represent a significant step forward. Yet, certain gaps remain—specifically, fire education for preschool children, and child participation in policy development, decision-making, and risk communication. Importantly, filling these gaps requires that researchers, policy-makers and practitioners work together to develop programs and initiatives that are based on all available evidence. It is also advisable that any new programs incorporate a rigorous monitoring and evaluation component so that the evidence-base can continue to evolve and support continuous improvement of CC-DRR for Australian children and youth. One of the major impediments to developing evidence-based CC-DRR policy and practice is a lack of reliable empirical data. This should be made a major priority for those working in this newly emerging field.

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