

The importance of school education in the preparation and planning for bushfires

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Summary

This submission addresses the Bushfire Inquiry's term of reference related to Preparation and Planning.

It recommends that there be a more comprehensive response to disaster risk reduction and resilience education (DRRRE) in schools that coordinates concerns about safe learning facilities with emergency management planning/school disaster management and teaching and learning. In particular, there is a need to bring together emergency planning and the existing Curriculum/Syllabus issues through

- implementing a comprehensive Curriculum/Syllabus framework for DRRRE that brings the curriculum together with school emergency management planning;
- developing school leadership and teacher capacity for participation in school-based DRRRE and emergency management;
- establishing an accreditation model for schools who are engaging in whole school DRRRE.

Introduction

We are living in time of unprecedented natural hazards and disasters for which the Australian community is greatly under-prepared, as evidenced by responses to the recent bushfires, floods and COVID-19 pandemic. Governments at national, state and territory levels have released a range of disaster resilience and disaster risk reduction strategies and frameworks over recent years, but, while the corresponding emergency management plans may well be in place (consistent with, for example, Australian Standard AS3745), there is a failure to socialise these and engage the community in disaster risk reduction and resilience.

Education has been recognised for some time as being essential for individuals and communities to build a culture of safety and resilience, and disaster risk reduction knowledge should be included in school curricula (United Nations, 2005). However, as we discuss in this submission, education has not always been a high priority action in government strategy documents, and the education sector has been slow to respond beyond focusing on planning for emergencies in facilities, and token inclusion of topics in the curriculum.

The importance of bushfire education for Australian children and young people has been explicitly recognised in formal bushfire inquiries and Royal Commissions for the past 80 years. In the Report

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of the Royal Commission on the 1939 fires (Victoria, 1939), Judge Stretton asserted that “probably the best means of prevention and protection is that of education, both of adults and children” (p. 25). He suggested that all schools, in both the city and the country, make fire prevention “a real part of the curriculum and that the lessons in that behalf be given at the commencement of the summer season” (p. 25).

Following the Ash Wednesday fires in 1983, the Victorian Bushfire Review Committee determined that “more emphasis should be placed on programs in schools, particularly because these carry long-term dividends” and “special briefings should be given to school students prior to the fire season” (p. 66).

In 2004, in the aftermath of the Canberra bushfires, the National Inquiry on Bushfire Mitigation and Management noted that “a nationally consistent bushfire education strategy that reaches and informs all Australians is yet to be implemented” and proposed that “State and territory governments and the Australian Government [should] jointly develop and implement national and regionally relevant education programs about bushfire, to be delivered to all Australian children as a basic life skill. These programs should emphasise individual and household preparedness and survival as well as the role of fire in the Australian landscape” (p. xxi).

The final report of the 2009 Victorian Bushfires Royal Commission, noted that none of these recommendations had been fully implemented. Declaring that “a concerted education program remains the most effective approach to instilling the necessary knowledge in Australian families” the Royal Commission put forward Recommendation 6:

Victoria [should] lead an initiative of the Ministerial Council for Education, Early Childhood Development and Youth Affairs to ensure that the national curriculum incorporates the history of bushfire in Australia and that existing curriculum areas, such as geography, science and environmental studies include elements of bushfire education (p.24).

This recommendation was taken up in part in the 2011 *National Strategy for Disaster Resilience* which recommended that risk reduction knowledge be included in relevant education and training programs in schools. Most recently, the 2018 *National Disaster Risk Reduction Framework* recommends support for disaster risk education, but there is still no nationally consistent disaster risk education strategy.

In recent times aspects of disaster resilience have been included in the Australian Curriculum (AIDR, 2018a), but the lack of an overarching strategy means there is a significant gap between what has been recommended and what is occurring. As the Australian Institute for Disaster Resilience (AIDR, 2018b, p. 1) notes,

The reality of increasing disaster risk in Australia is not yet acknowledged in formal education. The lack of a shared vision and overarching strategy for disaster resilience education (DRE) contributes to the vulnerability of children and young people and represents a significant gap in our national efforts to “enhance Australia’s capacity to withstand and recover from emergencies and disasters” (Commonwealth of Australia, 2011).

The National Disaster Risk Reduction Framework (Department of Home Affairs, 2018a, p. 4) recognises that, in order to strengthen resilience, “countries must prevent new and reduce existing disaster risk”. Thus, the National Framework includes in its first priority action to reduce disaster

risk: “Support long-term and solution-driven research, innovation and knowledge practices, and disaster risk education” (p.8). Similarly, Profiling Australia’s Vulnerability: The interconnected causes and cascading effects of systemic disaster risk (Department of Home Affairs, 2018b) notes that hazards only lead to disaster if they intersect with an exposed and vulnerable society and when the consequences exceed people’s capacity to cope. This report includes in its “pathways to safety” that a “high level of education and educational programs” are needed in order to achieve safe locations and sustainable livelihoods (p.45). No further details are provided of what they have in mind.

These recent recommendations for actions need to be combined with existing efforts towards disaster resilience education, but within a context of an overarching national strategy and shared vision for disaster risk reduction and resilience education (DRRRE). Without such a strategy and vision efforts to “enhance Australia’s capacity to withstand and recover from emergencies and disasters” (Commonwealth of Australia, 2011, p. III) will be impeded.

Education in international disaster risk reduction strategies and frameworks

Sendai
Framework
for Disaster
Risk
Reduction
2015-2030

The *Sendai Framework for Disaster Risk Reduction 2015-2030* (United Nations, 2015) is the guiding document for action on disaster risk reduction. The *Sendai Framework* has a stronger emphasis on disaster risk management, and it broadens the scope of disaster risk reduction “to focus on both natural and man-made hazards and the related environmental, technological and biological hazards and risks” (p. 5). This is set within an expectation of all-of-society and all-of-State institutions engagement.

In the *Sendai Framework*, the actions at national and local levels, under ‘Priority 1: Understanding disaster risk’ include,

(g) To build the knowledge of government officials at all levels, civil society, communities and volunteers, as well as the private sector, through sharing experiences, lessons learned, good practices and training and education on disaster risk reduction, the use of existing training and education mechanisms and peer learning;

(l) To promote the incorporation of disaster risk knowledge, including disaster prevention, preparedness, response, recovery and rehabilitation, in formal and non-formal education, as well as in civic education at all levels, as well as in professional education and training ((United Nations, 2015a, p.15).

References to education were greatly expanded in the *Sendai Framework* (United Nations, 2015). The *Sendai Framework* takes disaster risk reduction and resilience education beyond knowledge transfer and into child-centred pedagogy, stating that one of the roles of States as stakeholders is to recognise that “children and youth are agents of change and [they] should be given the space and modalities to contribute to disaster risk reduction, in accordance with legislation, national practice and educational curricula” (United Nations, 2015, p. 23). This child-centred approach is much more likely to lead to prevention and reduction of “hazard exposure and vulnerability to disaster as well as increased preparedness for response and recovery, and thus strengthen resilience” (United Nations, 2015a, p.12). However, it provides an even greater challenge to member states, like Australia, whose approach has tended to be focused on information dissemination rather than including disaster risk knowledge into formal education.

The *Sendai Framework* also recognises that there needs to be a broader and more people-centred preventive approach to disaster risk: “Governments should engage with relevant stakeholders,

including women, children and youth, persons with disabilities, poor people, migrants, indigenous peoples, volunteers, the community of practitioners and older persons in the design and implementation of policies, plans and standards” (United Nations, 2015a, p. 10). This is particularly relevant in the context of school emergency management planning and the *Sendai Framework* target to “Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030” (United Nations, 2015a, p. 36). A whole school approach to DRRRE and emergency management planning is consistent with these actions.

The Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector (GADRRRES) has responded to the calls to reduce the risks of all hazards in the education sector through its Comprehensive School Safety global framework (GADRRRES and UNISDR, 2017). This Framework complements the Sendai Framework. Its goals are to

- protect students and educators from death, injury and harm in schools,
- plan for continuity of education through all expected hazards and threats,
- safeguard education sector investments, and
- strengthen risk reduction and resilience through education (p. 2).

According to this framework, “Comprehensive School Safety is addressed by education policy and practices aligned with disaster management at national, regional, district, and local school site levels” (p.2), and it rests on three pillars (see Figure 1) which are designed “to promote school safety as a priority area of post-2015 frameworks for sustainable development, risk reduction and resilience” (p.3):

1. Safe Learning Facilities
2. School Disaster Management
3. Risk Reduction and Resilience Education.

As the UN Office for Disaster Risk Reduction (UNDRR) (2020, p. 93) recently recommended, education authorities need to “Adopt a comprehensive, policy-driven and child- and youth-centred approach to school safety—including safer school facilities, school safety [sic, should be disaster] management and risk reduction and resilience education”. In addition, UNDRR (2020, p. 93) recommended that practitioners

Co-develop inclusive, gender and age- appropriate formal and informal curricula from the primary to university level that supports children and youth to actively participate in risk assessment, risk reduction and response preparedness activities at school and at home. Include content targeting the structural drivers of heightened disaster risk for some communities, including gender inequality, poverty and exclusion.

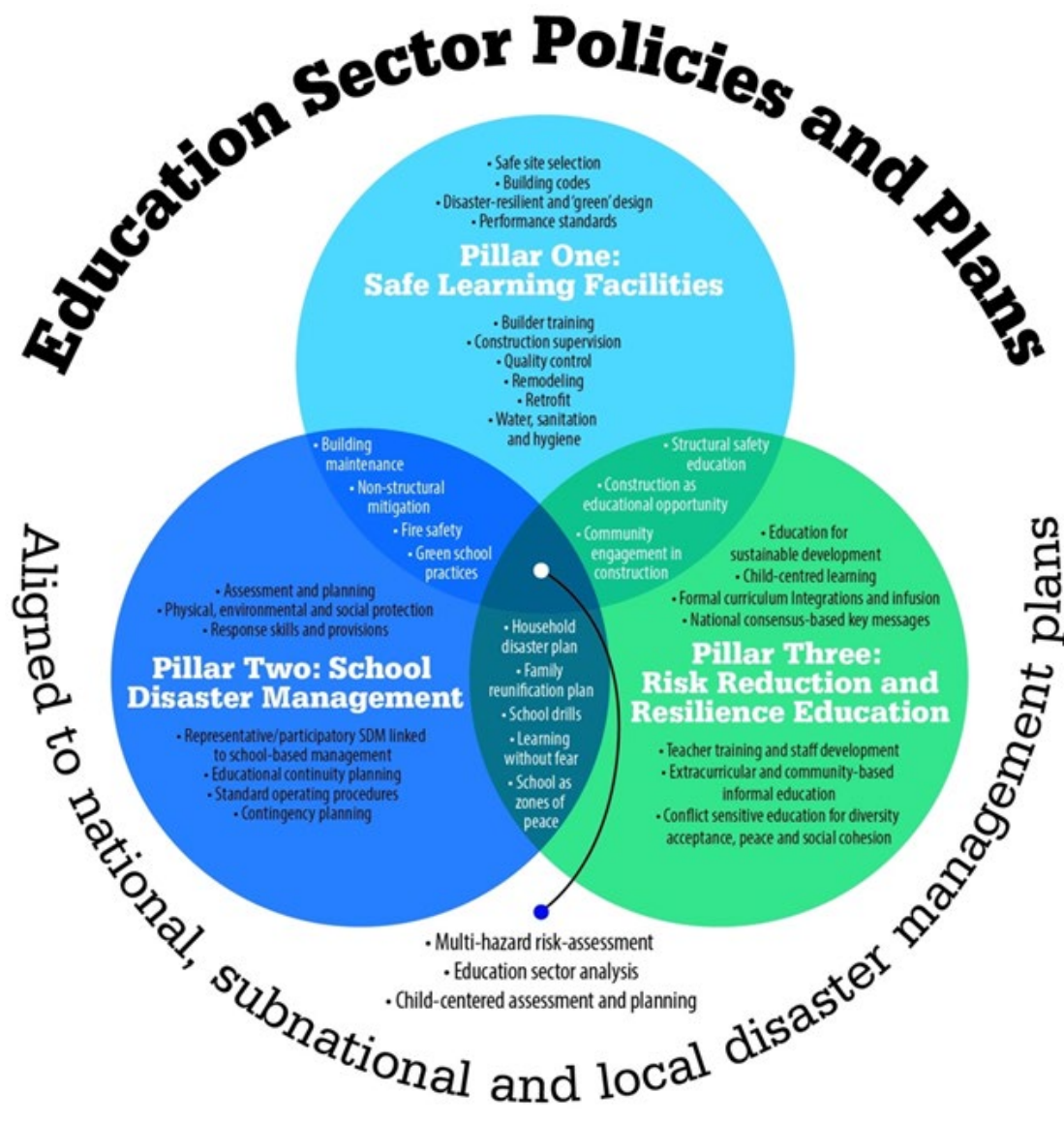


Figure 1: The three pillars of Comprehensive School Safety (GADRRRES and UNISDR 2017, p. 3)

However, while most State education authorities do their best to provide safe learning facilities (Pillar 1), and require schools to file annual emergency management plans (Pillar 2), the curriculum content component (Pillar 3) falls far short of disaster risk reduction and resilience knowledge needed to prevent and reduce hazard exposure and vulnerability to disaster, as envisaged in the *Sendai Framework* – especially when hazards are seen as including both natural and man-made and their associated risks. There have been no attempts to bring action in the three areas together in any comprehensive way at the national, State or Territory level, yet there is much to be gained from such an approach.

Good practice examples, but not strategically connected from other States

In recent times most State governments and their emergency management authorities have released equivalents to the *National Strategy for Disaster Resilience* (NDRS) (Commonwealth of Australia, 2011) and/or the *National Disaster Risk Reduction (DRR) Framework* (Department of Home Affairs, 2018a). However, only some of these State strategy documents include formal education.

The South Australian Government released its *Disaster Resilience Strategy 2019-2024: Stronger Together* in 2018. It stands in strong contrast to the other State's strategies² in that it gives prominence to children and young people as a key focus area for action and it recommends utilising the Comprehensive School Safety Framework (GADRRRES, 2017) "as a basis for integrating disaster resilience education and building safer and more resilient communities" (South Australia, 2018, p. 21). It also acknowledges the *Practice Framework for Disaster Resilience Education* (Towers et al, 2016) and the associated findings from the BNHCRC funded Child Centre Disaster Risk Reduction research. The recommended action is to "work with AIDR, DRANZSEN and sector leaders to build capacity of local organisations to build disaster resilience in children and young people" (p. 21).

The Tasmanian Government's Department of Premier and Cabinet recently released its first *Tasmanian Disaster Resilience Strategy 2020-2025* (Department of Premier and Cabinet, 2019a, 2019b) after a consultation period. This *Strategy* takes a broad approach to risks. They include bushfires, floods and storms as well as

- • other natural hazards, such as earthquake, landslides and tsunamis;
- • pandemics and bio-security hazards; and
- • intentional violence, cyber threats, major industrial accidents and other human-caused events. (p. 2)

The only mentions of education in this document are that the *Strategy* complements other programs supporting educational outcomes (p. 5) and that the government will prioritise risk reduction and preparedness for educational institutions, with Bushfire Ready Schools given an example of a current initiative (p. 7).

The companion volume, *Tasmanian Disaster Resilience Strategy 2020-2025: Background and supporting information* (Department of Premier and Cabinet, 2019b) is strong on the importance of education. It recognises that "Risk awareness, capacity and engagement includes...inclusion of risk awareness in school education and professional training" (p. 21), and lists some resources related to children and school education (p. 22). These include: the DRANZSEN website; the Australian Council of State Emergency Service's *Li'l Iarrikins* natural hazards program; the Bushfire and Natural Hazards CRC project on *Building Best Practice in Child-Centred Risk Reduction* (Bushfires & Natural Hazards CRC); and the Disaster Resilience Education Tasmania curriculum resources for grades 5-8. There is also recognition given to current challenges associated with developing risk awareness, capacity and engagement, including

- uneven understanding of disaster risks and application of that knowledge [in communities]. While many underestimate risks, there can also be unreasonable fears that need to be managed.
- the need to expand or better disseminate risk awareness programs or school curriculum resources focused on youth.
- competing pressures on the school curriculum. (p. 22)

Strategies for addressing these issues that were suggested during the public consultations on the *Strategy* document include:

² Except the Victorian Emergency Management Strategic Action Plan 2015-2018 (Emergency Management Victoria, 2015) and Victorian Emergency Management Strategic Action Plan Update #2 2017-2020 (Emergency Management Victoria, 2017) which included engaging with young people as both learners and educators in its first priority action for Community and Business. This is discussed in the Victoria section.

- Further embedding disaster safety, risk reduction and preparedness in the Tasmanian School Curriculum through learning resources that support core educational outcomes such as literacy, numeracy, science and/or history.
- Developing focused awareness and engagement campaigns on youth who tend to lack experience of disaster events
- Exploring ways to engage with youth before, during and after disaster events to help harness their knowledge and skills for everybody's benefit. (p. 22)

In Victoria, Emergency Management Victoria (EMV) produced the *Victorian Emergency Management Strategic Action Plan 2015-2018* (Emergency Management Victoria, 2015) and the *Victorian Emergency Management Strategic Action Plan Update #2 2017-2020* (Emergency Management Victoria, 2017). The 2015-2018 Action Plan acknowledges the Sendai Framework and notes that Victoria has adopted the National Strategy for Disaster Resilience (p.9). Both the *Action Plan* and the *Update #2* include in the first priority action for Community and Business "Identify key partnerships across governments, agencies and the public and private school sectors to develop innovative approaches to engage with young people as both learners and educators to build emergency management awareness and capability" (2015, p. 20). This was noted as being underway in the *Update #2* (2017, p. 7).

The Western Australian Department of Fire and Emergency Services (DFES) (2016) has a *Community Engagement Framework* which states, "DFES will maximise the use of internal resources and deliver a coordinated suite of programs and education" (p. 8). There is also a *July 2015 – June 2020 Community Engagement School Aged Education Strategy* (DFES, 2015). The purpose of this Strategy is for "School-aged children and their families to be better able to identify fire and natural hazard risks and understand how to stay safe in the face of natural hazards and disasters" aligned with "world's best practice in child-centred disaster risk reduction" (p. 3). The DFES School Aged Education program, moving towards teacher and DFES professional development and scaled implementation in schools verses direct delivery of programs, is guided by five desired outcomes:

1. School-aged children are better able to identify risks and better manage risks.
2. School-aged children act with their families, have prepared their home and have an emergency plan.
3. DFES personnel and volunteers are delivering effective school aged education.
4. Teachers see the value in the DFES School Aged Education Program and understand why it is important.
5. Teachers have a greater understanding and are capable and confident in delivering effective fire and natural hazard school aged education. (DFES, 2015, p.4).

The DFES activities include school aged resources such as the *Bushfire Patrol* program; education materials and publications in response to public enquiries regarding home fire safety, smoke alarms and storms; and the DFES Education and Heritage Centre located in the original Perth Central Fire Station in the city centre.

Education Department policies and school emergency planning

Education Departments in each State and Territory have policies related to school emergency planning and incident management, but these are not connected to the education of students. As

discussed in the next section, this information is not publicly available for NSW so we provide a description of the policies and processes from another State. For example, the Queensland Department of Education website (<https://qed.qld.gov.au/emergency-management>) has recently updated its information related to disasters and emergency management under 4 headings: preparation, imminent, occurring, recovery. Specifically, with respect to Preparation, there is *The DoE Disaster and Emergency Management Arrangements* document (Department of Education, 2018). As outlined in this document, the Department's approach to disaster and emergency management is underpinned by a set of general principles:

- being prepared for action
- all hazards approach
- tiered command and control structures
- tested Emergency Response Plans
- understood roles and responsibilities
- using a Common Operating Picture
- managing risk and uncertainty
- action learning. (p. 10).

Adhering to these principles is seen as having “an underlying effect of supporting staff to lead and take action” (p. 10), within a context of all decisions being “made on the primary consideration for the safety of all students and staff” (p.13). An action learning approach is also encouraged for “reflecting on previous results and adjusting structures, processes and plans. It is a valuable means of supporting the development of the organisation and the leaders within” (p. 13). However, students are not mentioned as part of the action learning approach.

Every government school in Queensland is required to have a documented Emergency Response Plan (ERP). The Department of Education (nd) provides a template for this. The ERP is approved by the Regional Director of Education, but it is not to be made public due to the sensitive and confidential information it contains. It is also labelled Staff/Student-In-Confidence but there is no indication of student involvement in its development nor in the School Response Team. The purpose of the ERP is to:

- To ensure the safety of students, staff and any other persons within the facility.
- To minimise the damage to DoE property and facilities.
- To resume educational services when safe to do so. (Department of Education, nd, p. 5).

However, it seems that students are just meant to follow directions from staff and participate in preparedness activities such as “evacuation, lockdown and other scenario exercises” (Department of Education, 2019). This was also the case with the previous Disaster and Emergency Management Procedure (Department of Education and Training, 2017) where the only implied student involvement was to participate in “annual training and exercising of event responses” (p. 5). The situation in other States and Territories is similar.

What's happening in NSW now

The New South Wales (NSW) Government has a website devoted to emergency management (<https://www.emergency.nsw.gov.au/>), and the *State Emergency and Rescue Management (SERM) Act 1989* that establishes the State Emergency Management Plan (EMPLAN). There are also regional and local EMPLANS as part of the Planning Framework (NSW Department of Justice Office of Emergency Management, 2018a), and NSW Government agencies or Functional Areas are to prepare

supporting plans – but Education is not one of these, which is surprising given how schools are affected by bushfires, floods and pandemics. There is also the State Emergency Management Committee (SEMC), established under the *State Emergency and Rescue Management Act 1989*, which is responsible for ensuring there is a system to manage emergencies that is robust, effective and flexible enough to deal with the hazards that may arise in NSW. The NSW Education Sector group, is facilitated via the NSW State Emergency Management Committee’s Critical Infrastructure Review Working Group, that shares information with other trusted networks through this Group: "The introduction of an Education Group within NSW reflects the importance of education in the functioning of resilient communities, in line with the United Nation's Sendai Framework for Disaster Risk Reduction" (NSW Department of Justice, 2018b, p. 19). The Comprehensive School Safety framework (GADRRRES, 2017) is also gestured towards with respect to: “Disaster recovery is accelerated by a properly functioning education system” (NSW Department of Justice, 2018b, p. 19) – however this is only one aspect of the Comprehensive School Safety framework.

There is also the *NSW Critical Infrastructure Resilience Strategy: Partner, Prepare, Provide* (NSW Department of Justice, 2018b) which is a “state-wide resilience strategy [that] will help keep the lights on, help keep water running, and help people and goods flow through our transport and trade routes, even in emergencies” (n.p.). The focus in this Strategy is infrastructure and achieving a properly functioning education system to minimise service interruption. However, even though the this Strategy has an outcome of “improved community resilience” and recognises that “The community resilience component of Critical Infrastructure Resilience will be enhanced when CI providers and government prepare and support communities with consistent and reliable information, but also engage them as partners in service provision” (p.16), there is no mention of schools, which would seem to be a major oversight. This is particularly obvious when the Strategy sees ways of improving community resilience as including community input into emergency risk planning and management, crowdsourcing emergency information and intelligence, and public reporting suspicious behaviour around critical infrastructure.

Department of Education policies and school emergency planning

To complement the NSW Strategy, the Department of Education has a *Business Continuity Management Policy* (2019a) which specifies “the arrangements for the NSW Department of Education to ensure that critical services are maintained and restored following a disruptive event”, but “In the event that the incident endangers or threatens to endanger life, property or the environment, emergency management always takes priority over business continuity arrangements.”

All government schools must prepare an Emergency Management Plan under the Department’s *Work Health and Safety Policy* (2019b), but no other information or guidance around this process is publicly available. Very few of the Emergency Management Plans are publicly accessible. One exception is Kangaroo Valley Public School (2017). According to this school’s plan, the Emergency Management Plan is communicated “to students through School Assemblies and in class groups”, and “to the school community through Newsletters” (p. 4). There is no indication of student involvement in the development of the plan.

Emergency Service agencies support for School emergency planning and DRRRE

The NSW Rural Fire Service (RFS) provides advice to schools about bushfire planning through its *Development Planning: A guide to developing a bush fire emergency management and evacuation plan* (2014). This guide is aimed at assisting representatives for at risk developments to prepare a Bush Fire Emergency Management and Evacuation Plan which is seen as separate from a school’s Emergency Management Plan.

The RFS has a website (<https://www.rfs.nsw.gov.au/resources/schools>) which includes resources for primary and secondary students including three FireSafe workbooks and two activity books for primary students and two Fire Science workbooks for secondary students. They also have a library of bushfire related reading and information books that students can borrow. The website encourages student led activities regarding fire and emergency events”

Once students have gained knowledge and understanding of skills required to be fire safe, it is important to cement this knowledge through activities that require decision-making and problem solving. Allowing students to be active in preparing for disaster events will reduce anxiety and allow for positive action in the case of an event.

Support is also provided to schools in implementing DRRRE through the *Guide to Working with School Communities* (2016), which is designed to support members of the NSW Rural Fire Service to effectively engage primary school students in learning and action for house fire and bushfire safety. There is also *Project Firestorm* (NSW Rural Fire Service and NSW Department of Education, 2019) which engages students in understanding bushfires and protecting their communities.

The NSW State Emergency Service (SES) has a website for schools (<https://www.ses.nsw.gov.au/for-schools/>) with links to activity materials for primary schools. In 2019 the SES released *Water in the World*, a set of curriculum resources for Stage 4 (Years 7 and 8) Geography (SES, 2019a). Although specifically focused on the risk of flooding the Hawkesbury-Nepean Valley, the intention is that the resources could be useful and valuable to schools across the state and perhaps the country as the project’s approach offers “insights for school communities to take a comprehensive approach to school safety and risk reduction for any hazard” (SES, 2019b).

Fire and Rescue NSW (2020) has a range of tailored fire safety and educational programs that we deliver through schools for varying key stages. These are concerned with educating and protecting children from the dangers and trauma that can be caused by fire, especially fires in and around the home.

Overall, the NSW the emergency service agencies’ recent work in collaboration with the Department of Education are positive steps towards integration of disaster management and DRRRE, but emergency planning still seems to be being undertaken in isolation from students rather than adopting a comprehensive approach to school safety (GADRRRES, 2017).

Disaster risk reduction and resilience education in the Australian curriculum and NSW Syllabus

The Australian Institute for Disaster Resilience (AIDR, 2018) has mapped the opportunities for disaster resilience education in the Australian Curriculum from Foundation to Year 12.

Opportunities in Foundation and Years 1-2 tend to be in Health and Physical Education (HPE) and relate to staying safe in a range of environments, identifying strategies to use in emergencies, and thinking about their feelings in particular situations. There is potential to link these curriculum elements to school emergency planning, but at the moment they are more likely to be linked to house fires and what to do (as reflected in various emergency services’ curriculum resources on house fires).

In Years 3 and 4 there are opportunities in HASS (Humanities, Arts and Social Sciences), Science and HPE. These include exploring the purposes of local community groups (could be the SES or fire brigade volunteers) and investigating the custodial responsibility of Aboriginal and Torres Strait

Islander Peoples for Country in HASS; studying how heat is produced and can move between objects, researching local knowledge of the natural environment, and considering the effects of floods and extreme weather on the landscape in Science; and describing and applying strategies for situations where they feel unsafe or emotional in HPE. There is potential to link these curriculum elements to school emergency planning.

Year 5 HASS is where the curriculum has its strongest emphasis on natural hazards and disasters. Here students study the impact of bushfires or floods on environments and communities, and how people can respond as well as discussing how and why people volunteer for groups in their community (for example, rural fire services, emergency services groups and youth groups). In Years 5-6 HPE there is further content associated with planning and practising strategies to promote safety in different situations and exploring emotional responses in different contexts. In Year 6 Science students study geological changes and extreme weather events and their effects on the environment, describe the causes of major natural and catastrophic events and investigate how scientific knowledge and early detection can help in minimising their impact. There is potential to link these curriculum elements to school emergency planning.

Year 7 HASS continues the theme of investigating causes, impacts and responses to an atmospheric or hydrological hazard, including explaining the economic, environmental and social impacts of a selected atmospheric or hydrological hazard on people and places, and describing community responses to the hazard. They can also map a selected hydrological hazard in Australia and elsewhere. Year 8 HASS includes investigating causes, impacts and responses to a geomorphological hazard, and researching how the application of principles of prevention, mitigation and preparedness minimises the harmful effects of geomorphological hazards or bushfires. Years 7-8 HPE includes students practising and applying strategies to seek help for themselves or others, and examining strategies for safe practices in different environments. There is potential to link these curriculum elements to school emergency planning.

Year 9 Science includes students investigating how ecosystems change as a result of events such as bushfires, drought and flooding, and Years 9-10 HPE includes students planning, rehearsing and evaluating options (including CPR and first aid) for managing situations where their own or others' health, safety and wellbeing may be at short or long-term risk. There is potential to link these curriculum elements to school emergency planning.

Year 11 Geography (Unit 1) includes the study of natural hazards (atmospheric, hydrological and geomorphic) and ecological hazards, and sustainable risk management policies, procedures and practices designed to reduce the impacts of the hazard through preparedness, mitigation, prevention and adaptation. Year 12 Earth and Environmental Science (Unit 4) also includes study of the impact of natural hazards on organisms and ecosystems.

The personal and social capabilities (self awareness, self management, social awareness, social management) in the Australian Curriculum (ACARA, 2019) are also relevant to DRRRE. Through self awareness students "develop a realistic sense of their personal abilities, qualities and strengths through knowing what they are feeling in the moment, and having a realistic assessment of their own abilities and a well-grounded sense of self-knowledge and self-confidence" Through self-management students "develop organisational skills and identify the resources needed to achieve goals. Students develop the skills to work independently and to show initiative, learn to be conscientious, delay gratification and persevere in the face of setbacks and frustrations". Through social awareness "students learn to show respect for and understand others' perspectives, emotional states and needs". Through social management students learn how to communicate

effectively, work collaboratively, make decisions, negotiate and resolve conflict, and develop leadership skills.

Through the Australian Curriculum students also develop their capabilities in critical and creative thinking. “students develop capability in critical and creative thinking as they learn to generate and evaluate knowledge, clarify concepts and ideas, seek possibilities, consider alternatives and solve problems. Critical and creative thinking involves students thinking broadly and deeply using skills, behaviours and dispositions such as reason, logic, resourcefulness, imagination and innovation in all learning areas at school and in their lives beyond school” (ACARA, 2019).

Most Australian States and Territories follow the Australian Curriculum however, New South Wales, Victoria and Western Australia do have their own local curriculum documents which do, at times, differ from the Australian Curriculum.

The particular difference in the New South Wales syllabus is that students study bushfires in Stage 3 Geography and water in the world in Stage 4 Geography. In neither case is this linked to school emergency management planning: the topics are treated academically.

What is proposed for New South Wales

At the moment emergency planning in schools is very much kept separate from DRRRE for students, yet there are strong arguments for the two to be brought together in Department of Education policies and procedures, as they are in the *Comprehensive School Safety Framework* (GADRRRES, 2017). The priorities for school disaster and emergency management in this Framework are

- Develop and promote guidance for education authorities on policies and practices of conducting multi-hazard risk analysis for school-based disaster risk reduction, preparedness, including standard operating procedures, simulation drills, contingency and educational continuity plans.
- Develop and promote guidance on disaster risk reduction and preparedness and safety for family, home-based, congregate child-care providers and parents.
- Develop and promote discussion and guidance for planned and limited use of schools as temporary post-disaster shelters, while protecting educational continuity and education development investments.
- Develop and promote corresponding monitoring and evaluation tools for accountability.
- Promote school-level risk-related evidence generation. (p. 8)

Complementing these priorities are those for risk reduction and resilience education:

- Develop and promote national and local adaptation of consensus based and actionable key messages for household and community risk reduction.
- Develop and promote a model for comprehensive ‘scope and sequence’ for knowledge, skills and competencies in Disaster Risk Reduction.
- Develop and promote knowledge management tools to permit sharing, user ratings, re-use, adaptation, and impact testing of educational materials.
- Develop and promote educational materials to meet the different needs of children of different ages, gender and disabilities.
- Encourage global, regional, national, and peer-to-peer experience exchange opportunities and evidence generation. (p. 8)

As shown in Figure 1, at the heart of this Framework is “child centred assessment and planning”, together with multi-hazard risk assessment and education sector analysis. Child centred assessment and planning is much more than the emergency management planning occurring in schools at present (only involving students in drills) and any DRRRE that is currently taught. In particular it means engaging “students and staff in real-life school and community disaster management activities, including mapping hazards, developing school-based contingency plans, and implementing regular school drills for relevant hazards” (GADRRRES, 2017, p.5). It also means that “The education authority has [a] needs assessment, strategy, and an implementation plan to develop staff and student capacity for participation in school-based Disaster Risk Reduction and management at the necessary scale” (GADRRRES, 2017, p. 7).

SEMP

There is a valuable model for management planning in schools that does include a curriculum component which may be adaptable to school emergency management planning. This is the NSW School Environment Management Plan (SEMP) which assists schools to achieve their objectives for the management of the environment and their teaching and learning about sustainability in three focus areas: curriculum, management of resources, and management of school grounds:

A School Environment Management Plan (SEMP) is a document that sets out the school community's intentions in regard to environmental education and environmental management. It represents an agreement to work together across the whole school.

A SEMP helps to integrate environmental considerations into whole-school planning. It helps to implement changes to school culture and everyday practices and to apply the principles of ecologically sustainable development across all school activities. (Sustainable Schools New South Wales, 2020)

The SEMP is consistent with the NSW Environmental Education Policy for Schools which “supports effective environmental education programs in NSW public schools, provides guidelines on managing school resources in accordance with ecological sustainability and is a starting point for addressing global environmental issues” (NSW Department of Education, 2020). Syd Smith (2006) describes how NSW schools have reoriented themselves towards education for sustainability through implementing Education for Sustainability (EfS) through the School Environment Management Plans and a Sustainable Schools whole school approach. Smith (2006, p. 11) argues as follows:

First of all it is important to note that EfS is quite a new concept for schools and most are still coming to terms with the implications of putting it into practice. Programs like the Our Environment It's a Living Thing (OE-ILT) Professional Development Program, which was based on critical thinking to help increase the understanding of the EfS concept, have highlighted the need to build some teacher and executive's skills in its application to schools. For some sectors, including schools, the principles of EfS are rapidly becoming the norm in the design of new programs, whether it is a conscious and intentional explicit or simply implicit or a logical and unintentional development... Sustainable Schools now seems to facilitate the development, implementation and review of Schools' Environmental Management Plans (SEMPs) in order to encourage a shift by them towards more sustainable practices.

Proposed NSW DRRRE and Comprehensive School Safety Framework

The implementation of EfS in schools shares much in common with DRRRE as conceptualised in the *Comprehensive School Safety Framework* (GADRRRES, 2017) in that there is a correspondence in the intent to bring together environment/emergency management concerns with related environmental education/DRRRE. Like EfS, DRRRE is quite a new concept for schools and most are still coming to terms with the implications of putting it into practice. There is a need for professional development programs for teachers to help increase the understanding of the EfS concept and to build teachers' and executive's skills in its application to schools. There is a need for the principles of the Comprehensive School Safety framework to become the norm in the design of new programs, whether it is a conscious and intentional explicit or simply implicit or a logical and unintentional development. A DRRRE program for schools could help facilitate the development, implementation and review of Schools' Emergency Management Plans in order to encourage a shift by them towards more child-centred approach to DRRRE in schools.

An important part of the planning process is developing partnerships between the school, their communities and local emergency services to ensure that everyone in the school community understands the risks in the local area and school environment, and is prepared and ready to respond if an incident occurs, no matter what the hazard. Also, by working with the local community the curriculum can include real examples, problem solving and active student participation, and schools can empower students to make decisions and take actions that contribute to a safe community and achieve the goals of Comprehensive School Safety (GADRRRES, 2017, p.2).

Initial teacher education and professional development for teachers and school leadership

Teacher education, including initial teacher education as well as professional development for teachers and school leaders, is needed as part of the whole school approach to DRRRE which is integrated into school emergency management planning if DRRRE is to be successfully implemented. The importance of developing school leadership and teacher capacity for participation in school-based Disaster Risk Reduction and management is recognised in the Comprehensive School Safety Framework (GADRRRES, 2017) and paralleled in the context of implementing SEMP's in NSW (Smith, 2006). The *Comprehensive School Safety Framework* states that, as part of Pillar 3, there needs to be "pre-service and in-service teacher training on risk reduction curriculum materials and methods", and strategies to "encourage teachers to integrate these topics into formal curriculum, as well as non-formal and extracurricular approaches with local communities" (GADRRRES, 2017, p. 5).

As noted by Tony McArthur (2019), "Given Australian communities can be quite exposed to natural disasters, it is surprising that the *Australian Professional Standards for Teachers* makes no explicit mention of emergency management considerations (Australian Institute for Teaching and School Leadership Limited, 2011)" even though there is a standard related to maintaining student safety (see Figure 2).

Graduate	Proficient	Highly Accomplished	Lead
Focus area 4.4 Maintain student safety			
Describe strategies that support students' wellbeing and safety working within school and/or system, curriculum and legislative requirements.	Ensure students' wellbeing and safety within school by implementing school and/or system, curriculum and legislative requirements.	Initiate and take responsibility for implementing current school and/or system, curriculum and legislative requirements to ensure student wellbeing and safety.	Evaluate the effectiveness of student wellbeing policies and safe working practices using current school and/or system, curriculum and legislative requirements and assist colleagues to update their practices.

Figure 2: Standard 4.4 Maintain student safety from the Australian Professional Standards for Teachers (AITSL, 2011, p. 17)

Overtly adding emergency management planning to this Standard would mean that initial teacher education programs would need to include emergency management planning in considerations of

“school and/or system, curriculum and legislative requirements”. and better implement a whole school approach to DRRRE, consistent with the *Comprehensive School Safety Framework*.

It would also mean that professional development modules would need to be provided for teachers and school leaders to ensure that they also met the Standard and provided appropriate leadership. While there is some assistance around bushfires provided for principals (such as the Western Australian *The Principal’s Guide to Bushfire* (Department of Education, 2018) and the NSW Rural Fire Service’s (RFS) *Development Planning: A guide to developing a bush fire emergency management and evacuation plan* (2014)), much more is needed to support a whole school approach to a comprehensive school safety strategy.

Comprehensive curriculum framework for DRRRE

There also needs to be a comprehensive curriculum framework for DRRRE that brings the curriculum together with school emergency management planning, rather than the planning occurring separately from the curriculum. This is consistent with the priority actions for the education sector in the *Sendai Framework* (United Nations, 2015), including

- A comprehensive and inclusive approach to school safety is the foundation for integrating risk reduction and resilience into education sector strategies, policies and plans
- The National Disaster Management Authority and Education authority has nationally adopted consensus and evidence-based, action-oriented key messages as a foundation for formal and non-formal education.
- The education authority has infused Risk Reduction and Resilience (RRR) Education into regular curriculum, including (but not limited to) climate education, Disaster Risk Reduction education, and conflict-sensitive education. (GADRRRES, 2017, p.7)

As discussed earlier, at the moment there are opportunities for teaching topics related to DRRRE in the Australian Curriculum, however, as indicated by the curriculum mapping undertaken by AIDR (2018), and earlier by Dufty (2014), the coverage is haphazard. It needs to be much more comprehensive. This is made clear in the *Comprehensive School Safety Framework* where it states that a key responsibility for curriculum and educational materials developers, faculties of education, teacher trainers, and teachers is to

*Develop quality teaching and learning materials for students and teachers.
Address all dimensions of risk reduction education: conducting multi-hazard risk analysis (including those with natural and human causes, and violence and conflict); understanding risk drivers and risk mitigation measures; identifying and disseminating key messages for safety and preparedness; building community risk reduction capacity; and developing social cohesion, and a culture of safety and resilience. (p. 5)*

The topics in the Australian Curriculum need to be mapped against these dimensions of DRRRE. These are important dimensions of DRRRE that are currently not considered within the Australian Curriculum or the NSW syllabus.

An accreditation model for whole school

As an incentive for schools to engage in comprehensive whole school DRRRE, consistent with the three pillars of the *Comprehensive School Safety Framework*, the possibilities for an accreditation model for schools who are engaging in whole school DRRRE needs to be explored. This could be based on the highly successful Australian Sustainable Schools Initiative (AuSSI) model (Larri and Colliver, 2020) which was supported by the Australian Government Department of the Environment, Water, Heritage and the Arts from 2003-2013, and by individual States and the ACT since then. In

the AuSSI model, schools complete five modules (Core, Biodiversity, Energy, Waste, Water) and gain certification. In a DRRRE model these modules could be related to the dimensions of DRRRE listed in the quote above.

Conclusion

A whole school approach to DRRRE is a key component of the preparation and planning for bushfires and other natural hazards. At the moment emergency management planning and the curriculum in schools are not at all connected, yet there is much to be gained from bringing them together and having a much more comprehensive approach to disaster risk reduction and resilience in our schools.

Achieving a whole school approach involves a multipronged strategy. Firstly, there needs to be policy from departments of education to bring together school emergency planning with curriculum responses: “Link education and disaster management sectors, and public safety policies and plans at each level of social organisation (national, sub-national levels, and local and school site level)” (GADRRRES, 2017, p. 4). Secondly, DRRRE and school emergency management planning needs to be incorporated into the *Australian Professional Standards for Teachers* (AITSL, 2011) which has implications for both initial teacher education and professional development for teachers and principals. Thirdly, there needs to be a comprehensive curriculum framework to DRRRE rather than the isolated topics currently in the Australian Curriculum. Fourthly, the possibilities for an accreditation model for schools who are engaging in whole school DRRRE needs to be explored. This could be based on the Australian Sustainable Schools Initiative (AuSSI) model.

The past year has been an unprecedented one for Australian schools. Many of them have been affected by bushfires, floods, and heat events, while all of them have been affected by the COVID-19 pandemic. Each of these hazards should be part of school emergency planning, but they also need to be part of a child-centred DRRRE consistent with the Comprehensive School Safety Framework (GADRRRES, 2017). It is time for each State and Territory to adopt this Framework and move towards a scaled implementation that will benefit all school students.

NSW is making progress towards such an approach through projects such as *Project Firestorm* and *Water in the World*, but, as discussed in this submission, more is needed if students in schools are going to be given opportunities to be empowered to be well prepared to participate in the preparation and planning for bushfires in their communities.

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