

Submission for the Parliamentary Inquiry into the response of Western Australian Schools to Climate Change

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Introduction

I am an experienced educator having worked 25+ years in both Government Schools (Primary & Secondary) and the Tertiary sector. I have conducted research within WA schools to explore the impacts of Education for Sustainability and the challenges to achieving positive outcomes. I have been a leading Environmental Education and Education for Sustainability practitioner in schools, private and not for profit sectors, engaging in a wide range of school-based programs and related teacher PD including but not limited to TravelSmart Schools, Sustainable Schools WA, WaterWise schools, WasteWise schools, BushRangers, Living Landscapes, Backyard Bandicoots and Catchments, Corridors & Coasts. As such I have been in a good position to observe the response of the WA education system to Climate Change.

My observations lead me to the conclusion that climate change education and action in WA schools do not have any priority. While there are a few WA schools that have a strong focus on Environmental Education/Education for Sustainability (EFS), there are fewer which truly address climate change as indicated by elaborations in the WA Curriculum. This highlights a huge gap in school education and experience and poses a significant threat to any future effort to achieve Climate change mitigation and adaptation actions. My observations are supported by published research including papers listed at the end of this submission.

I would like to preface my submission by emphasising that Climate Change is a wicked problem which required a systems thinking approach in order to address it in any meaningful way. Whole systems thinking is part of Critical and Creative Thinking, one of the General Capabilities in the WA Curriculum. A whole systems thinking perspective is vital for understanding the complexities of climate change.

This submission aims to address the 4 terms of Reference :

1. The co-benefits of climate action in schools
2. Climate change mitigation and adaptation actions currently being undertaken in schools, and the benefits they are achieving
3. Barriers that schools encounter in undertaking climate action and how these can be addressed
4. What more can be done to support schools to respond to climate change.

The co-benefits of climate action in schools

There are many co-benefits of climate change action in schools for students, teachers AND the broader community. These include:

Student learning

Physical health

Mental health

Financial/economic

Community

Student Learning Benefits

- There are opportunities to promote engagement in learning so that students feel school is more relevant, 'useful' and connected to their 'real world/ lives'.
- There are many opportunities for curriculum enrichment leading to better curriculum experiences and outcomes.

- Resources provided relating to sustainability/ climate change (e.g., coolaustralia.org, WasteWise, etc) provide rich learning tools and reflect ‘best practice’ in contemporary approaches to teaching and learning.
- In my experience, students feel frustrated that climate change dominates their media and is clearly important for their future, but they learn little about it through their school based study, and what little they do learn is fragmented.
- Students regularly express a very strong desire to know more about climate change and understand **how** it may shape their world/ futures AND what they can do about it. The lack of meaningful engagement with climate change issues both in formal school settings and larger political scales is a major driver of the Student Strike movement. I would argue that the students make their collective views about this known quite clearly and regularly.

Physical health benefits

For teachers:

- Getting outside and beyond the classroom is a common feature of any education for sustainability experiences.
- Many teachers expressed their enthusiasm to engage in more ‘hands on’ learning opportunities if there was enough teaching time in the curriculum.
- Programs such as Bushranger Cadets promoted healthy and engaging ‘hands on’ learning while making positive contributions to reducing climate impacts.
- A range of research from around the world expressed the health benefits of nature-based education.

For students:

- Students reflected that there was “too much time spent in classrooms and not enough in the real world.”
- Secondary students reminisced about kitchen garden and other programs in primary school and lamented the lack of similar programs in secondary school.
- Programs where students can exercise that aren’t just sport, and that take learning into the natural world were highly coveted by students.

Student and staff mental health

- Teachers are frustrated that they can not provide the education (about climate change) their students needed as they were forced to focus all their time and energy on delivering a ‘busy curriculum’ with little choice in *how* to deliver it.
- Some teachers feel that principals and leadership in schools actively work against incorporating sustainability, especially climate change education.
- ‘Champions’ in education for sustainability/ climate change education in schools are provided with little or no support from administrators and are feeling burnt out and stressed. They are frustrated that the initiatives they have established in their school work will likely end when they retire or leave despite the success and rewards for the school community and students.
- Students feel that a lot of pressure is placed on them through the rhetoric that their generation will be one’s to ‘fix the problem of climate change’. This leads to anxiety and sometimes depression about the state of the world, especially when they are not having their voices heard about concerns relating to climate change.

- Students are generally not being allowed to engage in actions to highlight or reduce impacts/ causes of climate change at school, which exacerbates their feelings of disempowerment.
- Students feel anxious and deeply concerned that they need to be the future leaders and change agents but are getting few opportunities to understand the problems associated with climate change, and when they try to express these concerns they are being blocked at a school and political level.
- The positive effect of sustainability and climate change education & action is observable through measurable reduction in anxiety, vandalism and isolation and improved outcomes, identity, and connection.

Financial benefits

- Schools can provide opportunities for huge financial savings through resource efficiency and improved management.
- Educating students, teachers and community about sustainable resource management can provide huge economic savings, as well as building social capital and effective partnerships with industry, government, and the community. Schools could be leading in modelling sustainable living with relatively little investment. With more investment schools could become the lever to achieve rapid community change
- Schools should all be part of key environmental programs such as: WasteWise, WaterWise, Your Move, Climate Clever, Sustainable Schools W.A. and therefore the performance of schools could be measured against key targets and potentially independently/ externally audited by these programs.
- Schools could all be required to meet minimum standards relating to their resource usage. This would be based on targeted strategies to reduce impacts/ improve efficiencies for each school based on their individual situation.
- Many students (and parents) are angry about the way schools use (or waste) resources. The key areas that frequently are communicated by students and student groups they identify as needing to be addressed are:
 - Schools should switch to 100% renewable energy ASAP. It's a "no brainer".
 - All schools should model 'best practice' waste streaming.
 - Schools should be mostly paperless, reflecting industries like mining, etc. Many feel this would have an added benefit of improving ICT Literacy.
 - Schools should all be held accountable for their carbon footprint.
 - All schools in W.A. should be carbon neutral, then carbon negative through their resource management and actions (e.g., tree planting, etc).

Community benefits

- Schools with strong sustainability programs also have strong community connections. When schools are a focal point for action on an issue that effects all of society it stimulates increased community cohesiveness and local creative problem solving.
- There are many examples of excellent programs and projects that connect a wide range of community stakeholders to quality, rich and engaging learning. These should be identified and used as models for best practice.
- Industry, government, and community groups are all very keen to play an active role in schools. Sustainability (and climate change) provides the best platform for this to occur.

- Community engagement around a common goal reduces anxiety, vandalism and isolation and improves outcomes, identity, and connection.
- Students feel like they have a voice when they work on projects/ in teams focused on sustainability or climate change.
- When community stakeholders are engaged in a project students feel the learning is much more connected and purposeful. This promotes enthusiasm, application and inspires them to try harder to achieve excellent results.
- Projects relating to climate change mitigation and sustainable urban growth/ design provided opportunities to work with industry on 'real world' projects, identifying opportunities today as well as future pathways to pursue interests and passions.
- The Arts provide a wonderful way to explore difficult issues and engage all members of the community. This also helps students to feel they can express their frustrations, ideas and hopes in regard to climate change and the future of their world.

Summary of the co-benefits of climate action in schools

- Economic savings through improved resource management.
- Short term initial costs for long term gain.
- Increased connectivity between schools and a wide range of community stakeholders
- Improved mental and physical health for teachers and students
- Increased capacity to achieve necessary climate change mitigation actions through empowering youth with knowledge and skills to act.
- Improved educational outcomes through the well researched benefits of nature-based learning beyond the classroom.

Many programs to support schools to engage in meaningful climate action linked with the curriculum already exist. With funding/support to provide a dedicated practitioner in each school plus a requirement for all schools to engage W.A. could make significant achievements/ improvements in a timely and cost-effective manner.

Limitations influencing of the co-benefits of climate action in schools

While many co-benefits exist, they are often limited in the scale of what they can achieve due to:

- Limited funding
- A lack of school-level accountability
- A lack of acknowledgement from the W.A. Department of Education
- Minimal student voice
- Poor infrastructure and a lack of accountability on resource use and management
- Little desire to align school performance against standards relating to carbon reduction, climate change mitigation, etc.

Climate change mitigation and adaptation actions currently being undertaken in schools, and the benefits they are achieving

I feel it is important to first highlight that Climate Change is a wicked problem, influenced by many different behaviours including some that may be perceived as being related to climate change. There are a wide range of mitigation and adaptation actions currently being undertaken in schools to varying degrees. In some schools where there is a culture of volunteering and working together towards sustainability exemplary outcomes are being achieved. In other schools actions are surface level or limited to individual classrooms rather than a cohesive school wide effort.

I have listed a very simple summary of **some** of the programs, actions or efforts that exist in WA schools which actively reduce the impacts of those schools on the environment, achieve economic savings through efficiencies and provide opportunities for WA students to become capable, literate and active citizens.

Reducing carbon emissions by influencing transport choices

Significant reductions carbon emissions can be achieved through fostering a culture of reduced car dependency. Achieving this requires cooperation between local government, school managers, planning and the department of Transport. There are programs that have developed and still exist which assist schools to tackle this. One example is **Your Move** which evolved from the TravelSmart program based on significant research. This program supports schools to promote healthy active transport and reduce traffic in and around school zones. Programs in schools are usually coordinated by enthusiastic teachers in their own time, some programs are run by parents. The program helps to provide schools with the resources to educate their communities around the active travel and public transport opportunities, as well as engage in strategic planning to make schools safer and improve accessibility. **Resourcing schools to ensure programs like this are not dependent entirely on volunteer time would improve its outcomes.**

Reducing Carbon emissions by reducing waste production.

Diverting waste from landfill can provide income streams. Eg. Containers for change. Even before containers for change scheme some school P&C groups collected aluminium cans and recycled them for cash.

Reducing waste generation and improving waste separation at schools also reduces costs associated with waste removal while simultaneously reducing the pressure on landfill, and the related carbon emissions.

Waste Wise schools, The Worm Shed, EMRC Waste Education, Local Government Environmental Education initiatives, Environment Centres and The Wonderful Worm Waste school are amongst some of the initiatives that currently help schools to tackle the waste issues and associated carbon emissions.

Participation in these initiatives is limited by availability of teaching staff willing to 'do extra' in the school, other resourcing in the school, and funding for excursions or incursions.

Reducing demand for fossil fuel generated energy

Generating renewable energy to reduce carbon emissions, mostly using rooftop solar, but also other technologies such as small scale wind turbines is an important strategy to combat climate change,

and is perceived as a “no brainer” by students who are frustrated it is not a ‘normal’ part of school infrastructure.

Further to this, improving resource management and influencing behaviors that reduce the need for energy is also an important part of combatting climate change.

The **Climate Clever** program is used by a number of schools in WA to improve resource management efficiencies using an audit/ act/ measure/ respond process.

This program is achieving real, measured success and significant cost-savings. It helps to frame the language for climate change mitigation in schools. Long term cost savings are enormous when measured over 10+ years. Short term spending for long term gain. Huge opportunities for student engagement (create a generation of climate literate sustainable resource managers) but requires investment in teacher time to coordinate these opportunities.

Students have reported that this program was important in their school for several reasons:

- They felt they could contribute to climate change mitigation activities
- They could see the real, measured impact of the school through resource use
- There were opportunities to be part of the design and implementation of actions
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The barriers to participation in this program include: cost, support from Administrators, teacher/ coordinator time, putting in the data, and access to funding for actions. Once again, providing a dedicated sustainability practitioner who can be the ‘connection’ for staff in the school and help them to integrate these programs into their teaching while also coordinating data gathering and school wide actions is needed.

Water conservation actions

Water conservation actions are an important aspect of climate change education in Australia as they result in lower demand for desalination and mitigate the significant risks created due to changing rainfall patterns.

Water Wise is an initiative with curriculum-based programs and support for schools to improve their water resource management. It can include access to grants for projects. It is often run through administrators or school gardeners but sometimes classroom teachers.

DBCA Catchment carers trail at Perth Hills forest is another program that helps students to understand the important role of rainfall and water catchments to our long term sustainability.

Again, participation in these initiatives is limited by availability of teaching staff willing to ‘do extra’ in the school, other resourcing in the school, and funding for excursions or incursions.

Biodiversity, Carbon sinks &

AND improved biodiversity on the school grounds and removal of carbon from the atmosphere.

Bushranger Cadets WA: A clear, progressive, and accredited program for young West Australians to actively engage in conservation and climate mitigation activities. Participants also engage in wide-scale tree planting and habitat reconstruction and often revisit sites to ensure success and longevity and monitor fauna and flora.

Barriers: limited funding means a long waiting list of schools wanting to participate. Lack of time for teachers and coordinators puts pressure on their personal/ professional lives (volunteer based).

Kitchen Gardening, local food & agriculture

Kitchen Garden programs: these are running well in Primary Schools with positive outcomes such as promoting healthy eating and the joys of gardening/ composting. They are limited in Secondary Schools largely because most don't have a funded coordinator position.

Nature Based Learning opportunities: fantastic opportunities and outcomes, especially in Primary Schools. Secondary Schools thoroughly enjoyed and benefitted but overcrowded curriculum time and costs meant that there is limited opportunities.

Student led programs

Student Leadership Programs such as Green Team, Roots and Shoots; Kids Teaching Kids etc):

- Provides a voice and makes students feel like their opinion is valued
- Provides opportunities for students to work alongside peers to promote collaboration, critical thinking, creativity and problem solving
- Is leading real positive change and climate change mitigation projects in the participants schools and community.
- Provides opportunities to learn the skills, knowledge, and practices to become the future leaders of a healthy and prosperous W.A.

Again, participation in these initiatives is limited by availability of teaching staff or volunteers willing to 'do extra' in the school, other resourcing in the school, and funding for excursions or incursions. Another limitation here is that these programs are generally limited to running during lunch and recess times so students have extremely limited time to work on projects which is a shame given they generally benefit the school.

Barriers that schools encounter in undertaking climate action and how these can be addressed

The most significant barrier to successful delivery of quality climate change actions/ educational programs is lack of funded positions for coordination and delivery of programs. Ironically there is evidence to suggest that these roles generate significant cost savings to schools and can essentially 'self-fund' when resource management practices are implemented. They allow development of community connections and partnerships with community and industry and act as the 'axle' holding the moving parts together.

- Teachers in most schools are already stretched thin dealing with special needs of students who don't quite qualify for significant support. The increasing incidence of anxiety, depression, high risk behaviours in classrooms makes it difficult for teachers to manage classes to achieve the minimum learning outcomes desired. There is barely time for teachers to collaborate on whole school literacy and numeracy projects, let alone the more systemic and overarching aspects of sustainability. Sustainability is NOT an ADDITIONAL subject, but a vehicle through which ALL learning areas can be addressed while embedding the cross curriculum priority so that multiple outcomes can be achieved. Some schools (e.g. Coolbinia Primary School) are achieving this well, mainly because the school has invested in employing a staff member whose responsibility is to work with all other staff to help them embed sustainability into their teaching, and facilitate connections to external providers and the network of sustainability practitioners.
- Another barrier is the burn out rates from 'champions' working in this space. Once they leave the knowledge goes to and programs usually disappear.
- Programs including improvements in resource management (energy, water, waste) have a lot of potential but need coordination.
- Lack of administrator support for programs is perceived as largely due to limited direction from the Department of Education to deliver sustainability or climate change education to students.
- Opportunities for curriculum enrichment and engagement for students require targeted programs and coordination to maximise their reach and potential.
- Access to clean energy finance or other finance to fund actions at the school-based level. Schools should be able to present a plan for renewable energy (for example) or other projects to realise cost savings/ climate reduction targets. This needs to have a clear and fair process/ format and could be independently audited.
- Coordinated networks would increase the potential savings and benefits for cost saving, curriculum, and learning.
- Teacher training needs to reflect the need for more climate responsive teaching and learning.
- There are a wealth of professional educators working in this space in W.A. who are 'untapped' resources for future growth of climate responsive strategies in schools. These need to be identified and brought together to support the process of integrating climate change education into our schools.
- The lack of investment in climate change mitigation infrastructure in schools at the policy level means these areas are treated as non-essential or discretionary add-ons, forcing a reliance on volunteers or 'champions' in the school community.
- Lack of funding for events, incursions, excursions in the areas of sustainability, environmental education and mitigation for climate change.
- Lack of dedicated staff time to facilitate the integration of climate change actions into school communities, and to support teachers to integrate aspects of these actions into their teaching. Again,
- The decision at policy level not to fund upskilling for teachers in the areas of sustainability, environmental education and mitigation for climate change.

- An informal yet very clear discouragement of direct discussion in schools about IPCC reports, climate change and climate change action has only very recently been rescinded but the culture of inaction and denial still exists within some state schools.
- Funding is required. There are many models that could be adopted but at the very least a person needs to be employed in every school to facilitate connection to the network and implementation of climate change actions at all levels within and across school communities. Connections to existing sustainability practitioners should be encouraged. The scale of funding must be realistic if any change is expected to be achieved.

What more can be done to support schools to respond to climate change.

In my experience students and teachers in general feel that:

1. Schools have a moral and ethical responsibility to provide staff and students with the resources required to meet the current and future challenges of climate change. Schools should be:
 - Responsible and efficient resource managers
 - Educating the next generation to be ready for the challenges ahead
 - Promoting student voice/ opportunities to engage in decision making about the future responses to climate change
2. Schools could make huge cost savings for the future if they were to transition to sustainable resource management practices: renewable energy, waste reduction and resource recovery, sustainable water management.
3. Schools should aim to be carbon negative or neutral through their resource management promoting cost savings and reducing anxiety of staff and students.
4. There is a wealth of learning opportunities to be had better preparing future generations of Western Australians for success through engaging, relevant, hands on curriculum design and educational experiences!
5. Schools need to be working from the same book of standards and frameworks to support more climate responsive education/ management practices.
6. Schools need funding for coordinators and staffing to make this possible and ensure the sustainability of programs and embedded practices.
7. A wealth of experienced operators already exists in Western Australia who have been doing this work and achieving amazing outcomes with limited resources or support.
8. Schools should connect with a wide range of stakeholders including industry, tertiary education, community, government. Climate Change requires interdisciplinary connections and responses, and this should be reflected in the way schools educate.
9. Schools and education systems should already be acting to implement climate change reduction/ mitigation/ adaption strategies, we have known about this for decades.

Ultimately, the following things are required if the government is serious about supporting schools to respond to climate change:

- Funding needs to be provided for a Sustainability Coordinator role in each school to coordinate integration into all aspects of school.
- Full support is required to embed approaches both school and community wide.
- All schools should be: 100% renewably powered (shared by students), Water Wise, Waste Wise, and resource efficient.
- Indigenous perspectives need to be included into climate responsive actions.
- All staff should have sustainability pathways for current and future professional development. Teachers should be encouraged to embed this into their practice.
- All schools should have policies that reflect state-wide reduction targets. These should provide measurable targets for achieving success.
- Sustainability should be core business not an add on
- Schools should be plastic free
- Students should be solution drivers

Further commentary on Climate Change Education in WA schools from a research perspective

Climate change education and action in WA primary schools do not have priority. Some WA schools have historically included a strong focus on Environmental Education/Education for Sustainability (EFS), but climate change has not been an explicit key driving force, as indicated by elaborations in the WA Curriculum. Unfortunately therefore, this statement refers mostly to EFS rather than climate change. This highlights a huge gap in school education and experience.

Climate change is a topic addressed on the Department of Education's Sustainable Schools website. This site, although requiring updating, provides a number of articles on Climate Change to assist teachers understand climate change and develop their programs (<http://det.wa.edu.au/curriculum-support/sustainableschools/detcms/navigation/climate-change/>) and yet it is not promoted or encouraged in schools. In reality it is the lowest priority for schools whose main focus is reporting on literacy and numeracy.

Lewis (2012) examined EFS in a WA primary school prior to and following the introduction of the Australian Sustainable Schools Initiative (AuSSI) Pilot in WA in 2005. Sustainable schools in WA utilised the Ecological Footprint and Social Handprint as overarching tools in their EFS programs. Thus programs included for instance, working to be wastewise and energysmart, as well as enhancing biodiversity and taking associated conservation action, which are all components of climate change action.

Key findings of the thesis were:

1. Following participation in AuSSI, commencing in 2005, student attitudes and values, knowledge and understandings, and skills and behaviours related to Education for Sustainability (EFS) were enhanced for all year levels. However, after three years, when specific EFS actions and projects ceased due to a lack of leadership support, students EFS outcomes were limited.
2. Teachers perceived the EFS program to be highly effective in the initial three years after joining AuSSI.
3. Key elements that enhanced EFS in the school were:
 - EFS staff champions who had access to EFS networks and other supports
 - Leadership support
 - Regular staff professional learning
 - Active school community involvement in all EFS processes
 - Teaching and actively engagement with the whole systems thinking perspective
4. Main reasons EFS education and actions ceased in the school after three years:
 - Leadership support was no longer present
 - Lack of staff profession learning
 - Vague designation of a staff member with EFS responsibilities
 - Shift back to silo thinking
 - Reduced community involvement
5. Overall recommendations:
 - Importance of whole school Efs/climate change professional learning
 - Embedding EFS across the curriculum for all year levels
 - Enhancing understanding and implementation of the whole systems thinking approach
 - Whole school support including inclusion in the school Business Plan and associated Operational Plans

- Understanding of the sustainability continuum that recognises the complex, dynamic interplay of issues involved in a school's EfS journey
- Pre-service teacher education in EfS
- EfS professional learning for all school staff, especially the leadership team
- Identify the specific EfS needs of teachers working in different phases of schooling

Since the publication of the above research very little has changed in terms of elements that support EfS/climate change and the aspects that limit progress. The same facilitators and barriers to effective EfS education and action remain the same today, in many WA primary school contexts. It is vital these findings are considered in the current parliamentary review.

Another thesis on EfS involved research conducted by Sonja Kuzich (2019), also at a WA primary school identified major barriers to the implementation of EfS as fragmentation and disorientation in policy discourse, dislocation of affordances and deep inertia.

Finally, enhancement of the WA curriculum in terms of climate change education is possible as evidenced by the new (2021) Year 6 integrated unit on [Climate Change and Sustainable Energy](#) being developed by the Einstein First group at UWA. Modernising the Science curriculum in this way can potentially addressing the climate change gap in primary school teaching and learning. The unit will be trialled at selected WA primary schools in 2022.

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