



## Research Presentation

# Reimagining STEM education and the Australian Curriculum through an environmental sustainability education lens

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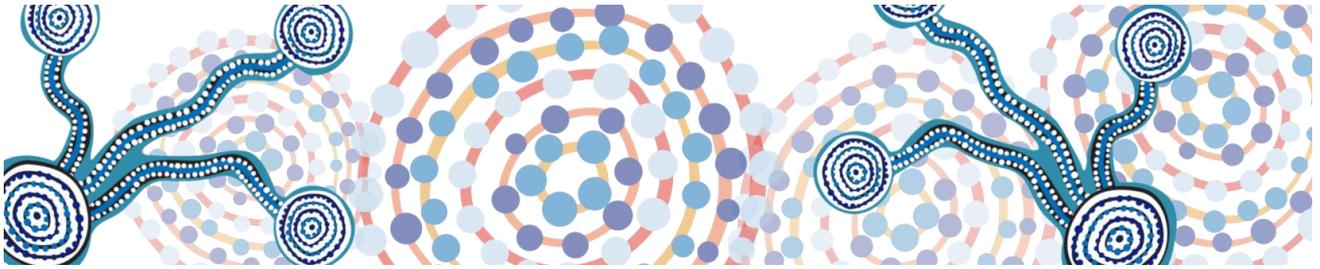
### Abstract

The close relationship between science and technology and responses to global environmental changes has been highlighted since at least the 1972 United Nations Conference on the Human Environment. In the intervening 50 years science and technology have grown in prominence as the way forward. Similar to much of the world, the Australian Government currently has a vision for society to be engaged in and enriched by science which has, as its prime focus, building skills and capabilities in Science, Technology, Engineering and Mathematics (STEM). This will require a significant transformation of citizens and society through appropriate education experiences. Simultaneously, the Government's policies and projects, including in education, ignore intergovernmental environmental initiatives, such as the Intergovernmental Panel on Climate Change (IPCC) and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) as well as the Sustainable Development Goals (SDGs). For the government, STEM is a sustainability-free space, as is STEM education, yet the two should not be seen as incompatible, and indeed can be mutually supportive and generate greater student engagement with science if combined.

This paper critically analyses the Australian Government's STEM and climate change education policies and programs, through an environmental sustainability education lens and finds many, and growing, gaps and silences in these areas. It compares the Australian situation with STEM and ecological education related developments in several other countries. In the context of significant global changes such as the COVID-19 pandemic, this paper argues that it is time for the Australian education agenda to take the Government's international responsibilities seriously, include meaningful engagement with climate change and biodiversity related topics through environmental sustainability education in the school curriculum, and discusses what a reimagined school science curriculum could look like.

### Speaker Profile

Annette Gough is Professor Emerita in Science and Environmental Education in the School of Education at RMIT University. She has been an adjunct/visiting professor at universities in Canada, South Africa and Hong Kong, and is a Life Fellow of the Australian Association for Environmental Education (since 1992). Annette has led research and development projects funded by the Australian and Victorian governments and non-government bodies, and worked with UNESCO, UNEP and UNESCO-UNEVOC. She has over 150 publications. Her research interests span environmental, sustainability and science education, posthuman and gender studies. Her most recent book is *Green Schools Globally* (Springer 2020).



## Acknowledgements

This paper will be written on the unceded lands of the people of the Woi wurrung and Boon wurrung language groups of the eastern Kulin Nations and I respectfully acknowledge their Ancestors and Elders, past, present and emerging.

## Website links

→ <https://www.researchgate.net/profile/Annette-Gough>

