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Making Sustainability Happen: Activating environmental citizens and behaviour change in schools

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Abstract

This paper discusses how schools can build Education for Sustainability (EfS) in a variety of ways and create transformative learning experiences so young people can 'be' active environmental citizens. This includes through developing creativity, and new ways of thinking and action-based learning. The paper explores the nature of behaviour change related to making sustainability happen in schools through linking it to emotional drivers, mindsets and values and a range of wider school programs. Through connecting students with nature, and providing opportunities for students to understand environmental concerns, educators can shift their mindsets and foster their capability, voice and agency to be stewards for the environment through models that use a 'head, hands and heart framework' for change projects.

Keywords: Active citizens, behaviour change, sustainability, Education for Sustainability (EfS), values, mindsets, nature connection, transformative learning

Introduction**Education for Sustainability and creating change**

This paper discusses the importance of schools creating varied transformative learning experiences for young people to engage in actions connected to Education for Sustainability (EfS) in varied ways. This learning requires development of knowledge and understanding of sustainability issues and debates, and building of competencies such as critical thinking, imagining future scenarios and making informed decisions in collaborative ways. This includes developing creativity, new ways of thinking and action-based learning in classroom teaching and learning and wider school programs that lead to behaviour change.

Addressing social and environmental concerns is foregrounded in the Australian national goals for schooling 'Melbourne Declaration' emphasis that as active and informed citizens, young people should 'work for the common good, in particular sustaining and improving natural and social environments' (MCEETYA, 2008, p. 9). In the past year, there has been increasing evidence that young people are developing increased voice and agency in matters related to sustainability. In November 2018, March and September 2019, thousands of Australian primary and secondary school students ignored Prime Minister Scott Morrison's call for "more learning in schools and less activism", to engage in national 'strikes' to plead for drastic action from politicians, to address climate change. Their rallies are part of growing global movements known variously as 'Fridays for Future' or 'Youth Strike 4 Climate', with young people engaged in democratic participatory action across the world. Empowered young people, conversant with the science of climate change, using their voice, demanding agency and working intergenerationally to organise their protests, are demonstrating high levels of 'social action competence' (Jensen & Schnack, 2006). They can explain their, "intentional

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behaviors and competence,” and are, ‘ready, willing, and able to inspire change ... as active, informed citizens’ (Jensen & Schnack, 2006, p. 471).

However, while there are increasing numbers of school students arguing for behaviour change, many teachers in Australia are still unsure about how to plan effective teaching and learning experiences for their students in this field (Kennelly et al, 2012), and in many schools, EfS is not a priority at all, in spite of the fact that sustainability is one of the three cross-curriculum priorities in the F-10 Australian Curriculum. The Australian Curriculum, Assessment and Reporting Authority (ACARA, 2019a) has positioned ‘Sustainability’ as a requirement across all sectors of education, to ensure learners develop transformative ‘knowledge, skills, values and world views necessary so they can act in ways that contribute to more sustainable patterns of living’. EfS is an urgent education priority for national and international government and civil society bodies, given the state of global ecological, social and economic systems and concerns about future wellbeing in the world (Wals, 2011; Sterling, 2014). EfS must involve informed participatory action to motivate and empower learners to change their behaviour and take action for sustainable development. This sort of learning requires development of knowledge and understanding of issues and debates, and promotes competencies such as critical thinking, imagining future scenarios and making informed decisions in collaborative ways (Henderson & Tudball, 2016).

Teachers have a special responsibility to empower learners to be active citizens who can create change for the environment. Robinson (2013) argues that even with the best intentions, ideas and plans, change projects can fail based on the assumptions of the change agent. However, redesigning projects through understanding the needs and activating the agency and voice of young people who will be adopting the changes, and creating a buzz through authentic learning and engaging approaches to EfS, can ensure there is ownership and involvement of students in the change process. In addition, building approaches that take learners out of their comfort zones and empower them to take action, can create a momentum for change.

An OECD (2017) report explored different types of behavioural insights that should be considered in designing programs to effect change. However, this report noted that creating behaviour change is a complex area that needs to be navigated in nuanced ways. These complexities are discussed in this paper. It is important to start from a place of understanding that the subjects of change are young people whose values, emotional drivers and connection points must be recognised and acted upon so they do have agency. As Tudball and Gordon (2014) argue,“(t)his generation of young people will also unavoidably be crucial decision-makers in terms of stewardship of the earth. To be able to take an active part in sustainable development, students need to understand the concept of global interdependence, and need to value empathy, equity, personal responsibility, social justice and social action in their own lives and in their connections with the world” (p. 258).

Connection, Mindsets and Values

To create active citizens who want to protect the environment, teachers need to move students from an egocentric or anthropocentric mindset, where human beings are seen to be the most important entity in the universe, into an ecocentric mindset that places value on all living organisms and their natural environment. This is especially important where people are disconnected from nature and disassociated from where food and resources come from and therefore the impact of their everyday choices. Interestingly, Cocks and Simpson (2015) comment on how anthropocentric mindsets do not cancel out environmentally positive behaviours and people can possess and change between mindsets. They link anthropocentrism to conservation, where people act for the environment to benefit all human beings. It has been also been argued that environmental behaviour is the endpoint of environmental literacy and is influenced by the ego rather than altruism (Levy, Orion, & Leshem, 2018).

Buchanan (2017) argues that to truly make an impact on sustainability there is a need to

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focus on self, others and the planet incorporating both egocentric and ecocentric approaches. He explores an extension and evolution of Carol Dwerk's (2006) work on Fixed and Growth Mindsets to incorporate "A Benefit Mindset". Buchanan (2017) describes a person's mindset as reflecting their attitudes, values and beliefs that help them to perceive and understand the world. Holding a benefit mindset helps collective as well as individual growth, thus aligning more with an ecocentric approach to action. The main argument is that in order to create a new culture of contribution, we need to foster leadership through benefit to the collective, people and planet. With increasing population and social and environmental issues, people need to focus on being well (Buchanan, 2017) and on how they approach everyday life and actions for the benefit of others and the planet. The movement of being well is not just for the individual, but has a focus on groups and the greater population reaching their potential. Buchanan sees the current doing good movements as people and organisations leading with purpose and context. This includes emerging leaders of social enterprises such as B-Corporation businesses who consider the impact of their decisions on their workers, customers, consumers and the environment, and social innovations, such as Social Labs. He also notes the importance of the Global Goals for Sustainable Development (see www.globalgoals.org).

For educators to influence lasting behaviour change beyond a project, lesson or subject, it is important to connect to and engage the intrinsic values and beliefs of individuals. People who favour compassionate or intrinsic values over selfish or extrinsic values are more likely to be environmentally friendly, show social concern and be involved in civic engagement (ACF, 2016; Crompton et al., 2016; Holmes, 2011). People's actions and thoughts are influenced by many variables such as their life experience, financial position and cultural and social norms (ACF, 2016; Crompton et al., 2016; Holmes, 2011). which guide them through the decisions and actions they make. As Holmes (2011) argues,

Values represent our guiding principles: our broadest motivations, influencing our attitudes we hold and how we act.... Our values are said to influence our political persuasions; our career choices; our ecological footprint: the amount of resources we use, and for what purpose; and our feelings of personal wellbeing (p.8)

Schwartz (2012), Crompton (2010) and Holmes (2011) studied what people value in life and measured the consistency across countries and cultures. They found that globally people share 58 values that have been mapped in relation to how commonly they occur or are expressed. Many of these are mapped together e.g. care for others and love of nature (see Figure 1). A cognitive dissonance occurs when values lie at opposite ends of the value map, that is preserving public image and power (extrinsic) versus social justice and unity with nature (intrinsic). When campaigns or communication tap into people's fear, greed or ego, the capacity to create change or to engage a group to enact the change can be short-lived or shallow (Crompton, 2010; Crompton et al., 2016; Holmes, 2011). Through fostering values and framing messages and learning for students in schools to be focused on care for others and for the environment, we are more likely to encourage young people to achieve more lasting changes of behaviour. Teachers working together to plan teaching and learning that will activate environmental citizens and behaviour change in schools will benefit by discussing the ways they include 'Common Cause Values'.

Figure 1. Common Cause Australia Values Map (Holmes, 2011, p. 13)

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The need for Nature Connection.

Help Everyone Fall in Love with the Earth Again, CERES Vision for Change (CERES, 2018)

Nature connection is recognised as a motivator for environmentally preferred behaviours and to develop active environmental citizens. Having a sense of connection or love of place are important foundations for the development of sustainability values (Singleton, 2015). To quote Jacques Cousteau, “people protect what they love” (ACF, 2016). Richard Louv (2005), author of “Last child in the woods”, identified that “nature deficit disorder” reflects the change in the amount of time children now spend outdoors. Planet Ark (2011) released an Australian report highlighting the generational shift in how much time is spent outdoors, identifying that:

- 73% of respondents played outdoors more often than indoors when they were young compared to only 13% of their children.
- 72% of respondents played outside every day as kids compared to only 35% of their children.
- 1 in 10 children today play outside once a week or less.

Wilson (1984) introduced the Biophilia hypothesis (BET) pertaining to people possessing the urge and need to be closer to nature and other forms of life. Kellert (2012) explored this further to link nature connection to our values, meaning in life, productivity and wellbeing. Individuals gain personal benefits from being in nature and also grow their appreciation and tendency to

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become a steward and provide care for nature (Thorne & Whitehouse, 2018).

David Sobel, an advocate for place-based education, describes the age appropriate environmental and nature-based education approaches for students based on the known boundaries of their own world. He argues that early years and early primary education should foster empathy and love for the environment close to learners. Middle to late primary school should involve exploration beyond their backyard and school ground to local natural spaces. Sobel (1999) suggests that the early adolescents should be able to move into a space of social action for the environment. Purposeful education experiences that connect with place increases students' knowledge of interconnectedness and orientation to the natural world (Thorne & Whitehouse, 2018). Nature education experiences are becoming more common in urban areas of Melbourne, especially for the early years, which fits in with play-based learning approaches. (See Table 1 below). Forest schools, bush kindergartens, nature play and (human) re-wilding learning experiences are all responses of environmentally based educators to foster early and late connections to nature.

Table 1. Examples of Programs for Nature Play and Connection in Melbourne, Australia

| Program | Age Group | Program Links |
|--|--------------------------|---|
| CERES Bush Kinder | Early Years | https://sustainability.ceres.org.au/programs/bush-kinder/ |
| Westgarth Kindergarten Bush Kinder | Early Years | http://www.wgkg.vic.edu.au/bush-kinder |
| Batman Park Kindergarten Bush Kinder | Early Years | https://www.bpk.org.au/ |
| Thornbury Kindergarten Bush Kinder | Early Years | https://thornburykindergarten.com.au/ |
| Eco-explorers | Early Years and Primary | https://www.ecoexplorers.com.au/ |
| Nature Play Australia | Early Years to Secondary | https://www.natureplay.org.au/ |
| Zoos Victoria Nature's Calling | Early Years | https://www.zoo.org.au/education/werribee/natures-calling |
| Royal Botanic Gardens Bush Kinder and Playgroups | Early Years | https://www.rbg.vic.gov.au/learn/programs/early-childhood-cranbourne |
| Re-wilding (humans) | All ages | https://www.naturesapprentice.com.au/ |

Education for Sustainability (EfS) – activating students and creating change through education.

Early approaches to environmental education assumed that the journey to environmental action was linear, where teachers developed students' knowledge, which created environmental awareness and this led to environmental behaviours (Wals, 2011). Unfortunately, knowledge does not always influence actions and change behaviours (Crompton, 2010; Heath & Heath, 2010; Wals, 2011). This creates challenges for teachers to change how they teach and to do so ethically. Wals (2011) suggests that education should create capacity building and critical thinking, so citizens can understand societal and environmental issues and self-determine

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their need to act.

Further, Wals (2011) suggests that Environmental Education should incorporate new ways of learning such as transdisciplinary, transformative, social and collaborative learning. This involves teachers providing opportunities for students to be engaged in real world issues. Social and collaborative learning are also important in EfS to help create reflective and reflexive citizens. Gough (2010) argues that the interdisciplinary nature of environmental education has been problematic, as it is often marginalised in traditional schooling. However, EfS has extra layers for teachers to consider such as concern for values, participation and decision making.

Brett (2017) explores how teachers can better embed current environmental and political realities facing the youth of today into teaching through integrating EfS and civics and citizenship (CC). The Australian curriculum requirements of CC can be directly linked to sustainability concerns and issues (Brett, 2017). The sustainability cross curriculum priority (CCP) provides many opportunities for teachers to integrate this learning, arguing that:

Cross-curriculum learning is fundamental to:

- understanding the ways social, economic and environmental systems interact to support and maintain human life
- appreciating and respecting the diversity of views and values that influence sustainable development
- participating critically and acting creatively in determining more sustainable ways of living.

Through the priority of Sustainability, students develop the knowledge, skills, values and world views necessary to contribute to more sustainable patterns of living' (ACARA, 2012).

However, AESA (2014) found in a survey of 5000 teachers primarily from the east coast of Australia that 80% do not understand or know what EfS and there is a lack of attention on the ACARA CCP in teaching and learning. Brett (2017) provides a model for how to connect EfS and CC together to create richer and authentic learning experiences. Both areas can complement each other when applying an ecological or political lens to learning and embedding critical and creative thinking, ethics and active citizenship. There is a need to further integrate both EfS and CC teaching and learning better in pre-service teaching, and to build confidence through professional learning and resources for practising teachers (AESA, 2014; Brett, 2017; Kennelly, Taylor, & Maxwell, 2008).

Since 2008, the Victorian contingent of the Australian Sustainable Schools Initiative (AUSSI), ResourceSmart Schools, has worked with over 1300 schools and 96 Early Learning Centres (Sustainability Victoria) to build EfS. Part of the program is professional learning for staff and support for integrating sustainability into the curriculum. The program focuses on whole school approaches to creating change linked to reduced resource consumption, increases in biodiversity, and sustainability embedded throughout the curriculum, as well as community engagement and a cultural adoption of environmental values and practices (see Figure 2). The program measures resource reduction through an online tracking system which feeds back the results of introduced behaviours and actions implemented by schools. ResourceSmart Schools has saved participants over \$20 million through energy, waste and water saving and avoided over 60,000 tonnes of greenhouse gases (Sustainability Victoria 2019).

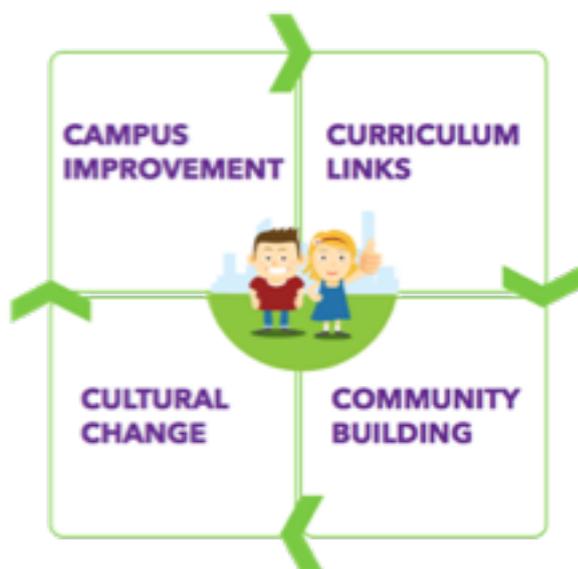
Providing tangible data has helped schools to celebrate reductions in resources and costs and additionally allowed for ongoing government support of the program. This program has worked in schools where they adopt and make the change part of their school system and activate the students, staff and greater community. Acknowledgement of incremental change and innovations in this process is important to get people on board and to set achievable

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goals.

A Monash University study by Rickinson, Hall, and Reid (2014) surveyed 160 Victorian ResourceSmart schools and found that what made the program successful was the structured frameworks, supportive facilitation, internal monitoring, external validation and local networks. Recommended improvements were enhancing program facilitation, strengthening curriculum embedding, extending school-community links, meeting specific school needs and emphasising leadership. The face to face support and guidance from external facilitators helped schools tackle auditing, fundraising and completing program goals. ResourceSmart Schools has a structured framework of actions for schools, but within that there is autonomy for schools to choose the actions or projects they are most passionate about. The study highlights the importance of embedding sustainability into the curriculum for it to be truly at the heart of action-based learning in schools. Also, primary schools have more successfully applied multi-disciplinary projects and curriculum in sustainability through this program than secondary schools. Leadership and student action components are also key elements of success where schools have achieved whole school change and participation in this program.

Figure 2. ResourceSmart Schools Whole School Approach – Campus, Curriculum, Community, Culture (Sustainability Victoria)



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**Figure 3. Data and results from Schools Resource Use Reductions
a) SV Infographic 2014 and Data**



b) School Data from the North, South and East Metropolitan Regions Managed by CERES. FY17-18 (Data sourced from SV ResourceSmart Schools Online)

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Henderson and Tudball (2016) stressed the importance of developing EfS to increase youth democratic action as an urgent education priority. They argued that student action competence involves developing a deep knowledge of the topic or issue, motivation to solve the issue, consideration of future implications based on their own and other's choices and taking action as part of the learning experience in a school and valued by the school. Recent student action through the School Strike 4 Climate movement has revealed that across the world, young people want to create change. Protests in more than 50 countries were organised in late 2018 and March and September 2019 to protest against political inaction on climate change.

Education for Sustainability (EfS) in the Australian curriculum

EfS can be developed through many elements of the Australian Curriculum and the sustainability cross curriculum priority is linked to all learning areas. The Sustainability priority has been developed around the three key concepts of systems, world views and futures: the first key concept explores the interdependent and dynamic nature of systems that support all life on Earth and our collective wellbeing.

The second concept enables a diversity of world views on ecosystems, values and social justice to be discussed and recognised when determining individual and community actions for sustainability.

The third concept is aimed at building capacities for thinking and acting in ways that are necessary to create a more sustainable future. The concept seeks to 'promote reflective thinking processes in young people and empower them to design action that will lead to more a more equitable and sustainable future' (ACARA, 2019a).

The general capabilities ethical understanding also provides opportunities to develop a focus on sustainability. In the rationale for ethical understanding it is noted that,

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Complex issues require responses that take account of ethical considerations such as human rights and responsibilities, animal rights, environmental issues and global justice... Building ethical understanding throughout all stages of schooling will assist students to engage with the more complex issues that they are likely to encounter in the future, and to navigate a world of competing values, rights, interests and norms. (ACARA, 2019b)

A further curriculum link to sustainability is made between Civics and Citizenship and the Critical and Creative thinking capability so that,

Students develop creative thinking through the examination of social, political, legal, civic, environmental and economic issues, past and present, that are contested, do not have obvious or straightforward answers, and that require problem-solving and innovative solutions (ACARA, 2019c).

The scope and sequences for creative and critical thinking, personal and social, intercultural and ethical capabilities can build skillsets that help students to be creative thinkers, adaptive and active citizens in the world.

Creating a model for change using students' heart, head, and hand

In order to activate environmental citizens and create behaviour change, teachers need a model that can inspire learners, increase school support, and engage them in real-world problems and action-based solutions for sustainability. EfS can lead to transformative learning as it implies making changes as part of the process. It involves learning about the environment, being in and connected to the environment and acting for the environment. Head, hands and heart is a framework originally used by David Orr (1992) and adapted by Sipos, Battisti, and Grimm (2008). They see transformative sustainability learning as a series of objectives corresponding to the cognitive (head), psychomotor (hands) and affective (heart) domains. These domains facilitate personal experience for participants resulting in profound changes in knowledge, skills and attitudes related to natural, social and economic systems. At CERES, educators link the 'head' to learning about the environment, the heart to being in and connected to the environment, and the hands in connection to taking action for the environment.

Figure 4 shows how CERES Education uses the heart, head and hands to guide the development of learning experiences and a model for change in planning a project.

Figure 4. CERES Lessons for Change and Model for Change

a) CERES Lesson for Change



Heart

(connection to topic/feeling)



Head

(knowledge gained)



Hand

(action in or from activity)

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b) Model for Change

| Project Stages | What you need to consider & do | Inspirational references |
|---|---|--|
|  | Know where you are going and know why you are doing it | |
| | Think about what has worked before e.g. social proof or “bright spots” | Changeology (Robinson, 2013) Switch (Heath & Heath, 2010) |
| | What do we have to do to get there? | Switch (Heath & Heath, 2010) |
| | Desired end point and knowing why it is worth it | Switch (Heath & Heath, 2010) |
| | Understand barriers and find solutions to address fears | Comfy zone Diagnostic (Robinson, 2014) Changeology (Robinson, 2013) |
| | Connect, Connect, Connect > create a desire in the individual and group to change | |
|  | Ensure there is autonomy in the process. People are part of the decision-making process to change | Changeology (Robinson, 2013) Switch (Heath & Heath, 2010) |
| | Make it FUN! | The 6-dimensional enchanting event constructor (Robinson 2018) |
| | Make it accessible. Step by step not all at once | Switch (Heath & Heath, 2010) |
| | Inspire a Benefit Mindset | The Benefit Mindset (Buchanan, 2017) |
| | Me We Activate Intrinsic Values | Narrative Handbook (ACF, 2016) Common Cause (Crompton, 2010; Crompton et al., 2016; Holmes, 2011) |

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| | | |
|---|---|--|
|  | Enable your environment for change | Changeology (L. Robinson, 2013) Make the Switch (Heath & Heath, 2010) |
| | Help build habits and model behaviour | Comfy zone Diagnostic (L. Robinson, 2014) Changeology (L. Robinson, 2013) |
| | 'Nudge' – where situation or infrastructure changes behaviour changes | Changeology (L. Robinson, 2013) Switch (Heath & Heath, 2010) |
| | Make it contagious Social pressure to change | Changeology (L. Robinson, 2013) Switch (Heath & Heath, 2010) |

Conclusion

This paper has shown that schools can build Education for Sustainability (EfS) in a variety of ways and create transformative learning experiences so young people can 'be' active environmental citizens. In Australia, there are now policy and curriculum imperatives and considerable evidence of school and student engagement in sustainability programs. Exemplars and models have been discussed to show how schools can engage learners' heart, head and hands to take action now and in the future. Programs focusing on nature connection, Forest schools and bush kinders, being ResourceSmart and integrating values that matter are all part of a growing movement that recognises the importance of EfS so that young people can be active citizens now, who are also prepared with the knowledge, skills and capabilities for uncertain futures.

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