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## Leading the change toward education for sustainability in early childhood education

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The benefits of beginning education for sustainability (EfS) in early childhood education are becoming widely known. There is growing concern in the western world that children's access to the outside world is decreasing and children are becoming disconnected from nature and thus not gaining a foundational ethic of care toward the environment. Concern for the state of the environment and fostering children's connections to nature has led to a growing number of early childhood services in Aotearoa/New Zealand implementing sustainable practices, however, EfS is not widespread throughout the sector. This paper examines how early childhood teachers can become leaders for sustainability and presents a pedagogical approach that sustainability leaders can use to enable children to become active citizens who enact change for a more sustainable community.

### **Introduction**

When the United Nations declared 2004-2015 as the 'Decade of Education for Sustainable Development', early childhood did not feature as a significant part of resulting governmental policies related to EfS, either in Aotearoa/New Zealand or internationally. In response to this, an international workshop was held in 2007 on "the role of early childhood education for a sustainable society" (Hägglund & Pramling Samuelsson, 2009, p. 51). The workshop found that early childhood education had a key role in teaching EfS to support young children to develop connections with nature and become active citizens within their communities to help make change toward a more sustainable society.

The term sustainability is complex as it holds different meanings for different groups of people. This paper takes a position of sustainability from the United Nations *Report of the World Commission on Environment and Development* (1987) for there to be changes to thinking and behaviour patterns to "meet the needs of the present without compromising the ability of future generations to meet their own needs" (chap 2, para. 1). This means that environmental, cultural, social, political and economic actions undertaken today must have both present and future generations at the core of their decisions. Thus, EfS must ensure that humans learn they are not independent of the environment, rather they need to work interdependently with the environment to ensure a secure world for future generations.

Education has been recognised as a key factor in creating a society that lives in a sustainable manner. This first became evident when the 1977 *Tbilisi Declaration* outlined recommendations to world governments to implement environmental education into their education systems (UNESCO-UNEP, 1978). The *Tbilisi Declaration* identified that humans and the environment were interdependent on each other and governments should consider both the needs of the present and the needs of the future in their policies. It emphasised that for significant change to happen countries had to engage in environmental education for people of all ages engaged in both formal and informal education to solve the problems that were affecting the health of the planet. A framework was developed that outlined five goals for environmental education. These goals were awareness, knowledge, attitudes, skills and participation (Bolstad, 2003).

Subsequently, in recent years environmental practices have been implemented in early childhood services across the globe, resulting in EfS becoming embedded in some early childhood communities through hands-on practical experiences that have real life meaning for children (Pramling Samuelsson & Kaga, 2008). This



embedded approach has shown that with the guidance of individuals who care about sustainability issues, very young children can lead change toward a more sustainable future (Davis, 2005; Duhn, Bachmann, & Harris, 2010; Kelly & White, 2012; Ritchie, 2010; Vaealiki & Mackey, 2008).

Sustainability leadership calls for individuals to become leaders to make change for the environment, communities and local and global economies. Studies have shown that a top-down style of leadership is limited when trying to make and sustain change (Ferreira, Ryan, & Davis, 2015). Therefore, sustainability leadership moves beyond models of leadership that imply there is a designated person who leads their team toward a particular outcome. Rather sustainability leadership is a more collaborative form of leadership where individuals work with others to “explore, learn, and devise a realistic course of action to address sustainability challenges” (Ferdig, 2007, p. 31). This means that anyone can become a leader, be it centre owners and managers, teachers, student teachers, or children. Such leaders are deeply aware of the impact their actions on the environment and those around them and interact with others to inspire change (Ferdig, 2007).

### ***Education for sustainability and early childhood education in Aotearoa/New Zealand***

Currently, EfS is not mandatory in the Aotearoa/New Zealand early childhood sector (Duhn, 2012). The sector is guided by the early childhood curriculum, *Te Whāriki* (Ministry of Education, 2017), which has recently been revised and released this year. *Te Whāriki* continues to have no explicit links to EfS within its principles, strands and goals. However, the aspiration for children and content within the principles, strands and goals do implicitly provide guidance for teachers to include sustainability practices within their centre curricula (Duhn et al., 2010; Vaealiki & Mackey, 2008). As the approach for how they will implement EfS, or even if they will implement EfS, is determined by each individual centre, and in some cases individual teachers, EfS is not widespread across the early childhood sector in Aotearoa/New Zealand (Carr & May, 2000; Vaealiki & Mackey, 2008).

Despite EfS being non-mandatory in Aotearoa/New Zealand, dedicated teachers in the early childhood sector have been implementing environmental practices with children for a number of years. These practices include gardening, worm farming, composting and recycling (Kelly & White, 2012; Vaealiki & Mackey, 2008). However, this is not widespread within the sector. It has been suggested that early childhood teachers may not engage fully in EfS due to historical beliefs that providing young children with experiences in nature is enough to gain a connection with nature, and that children in early childhood are too young to comprehend the issues of sustainability (Elliott & Davis, 2009). Early childhood EfS has been built on a tradition of providing young children with experiences in nature. This has been viewed as a platform from which children’s curiosity can develop into sensitivity toward the natural world. However, recognition has grown that providing experiences in nature is not enough for children to develop conceptions of the environment and understanding of sustainability issues (Cutter-Mackenzie, Edwards, & Moore, 2014; Elliott, 2014).

### ***Connections to nature and environmental care***

Wilson (2012) outlines how the early childhood years are fundamental in developing “environmental attitudes and a commitment to caring for the Earth” (p. 87). The natural world can give children instant responses to their curiosity through all of their senses as they touch, taste, smell, see and hear what is going on around them. Such connections tend to foster an ethic of care for the natural environment and the life systems within it (Phenice & Griffore, 2003). Positive experiences in nature can support children to develop the understanding that humans are interconnected with the earth and its life supporting systems, and that all humans have a responsibility to ensure its survival for future generations (Chawla, 2007).

However, there is growing evidence to show that in the western world, the present generation of children do not have the same opportunities for connection with nature as previous generations (Elliott, 2015; Louv, 2008; Wilson, 2012), and this has become a subject of concern for environmental educators. Wilson (2012) highlights



this concern, contending that when children are not regularly exposed to nature, they may develop physical and emotional difficulties or “unfounded fears of the natural world” (p. 86). This has implications for early childhood, as more children than ever before are enrolled in early childhood services, highlighting the increasing need for teachers to provide a curriculum that ensures there are ongoing and frequent experiences in and with nature for children (Elliott & Davis, 2009; Prince, 2010). To develop a connection to, and “cognitive knowing” (Elliott, 2015, p. 47) about nature children need lots of opportunities for unstructured play outside. They also need opportunities to engage in joint attention with sensitive adults who can share their sense of wonder at their discoveries and support their growing understanding of the world around them (Ashby & Agius, 2015; Chawla & Cushing, 2007; Elliott & Davis, 2009).

Therefore, for connections to nature and environmental attitudes to be fostered in children, they will need the support and guidance of ecologically-aware teachers who engage in intentional teaching pedagogies that encourage children to engage with sustainability issues such as water conservation, rubbish reduction, and connections to nature and each other. Such guidance will help children to comprehend the implications of their own actions, and those of others, on the environment. Furthermore, as children act on their understandings and enact change within and beyond their centre environments, they become active citizens within the wider community (Duhn, 2012; Phillip, 2014; Ritchie, 2010; Vaealiki & Mackey, 2008), and uphold the key aspiration of *Te Whāriki* that they will make “a valued contribution to society” (Ministry of Education, 1996, p. 9).

### ***Values and beliefs of sustainability***

One way that ecologically-aware teachers can begin to enact change is if they understand their role as a sustainability leader within their centre communities. However, as mentioned earlier in this article, sustainability means different things to different groups of people. Similarly, values and beliefs toward sustainability differ widely too. One of the difficulties with EfS is that it is a complex and values-laden concept. With a wide range of values and beliefs toward sustainability between different interest groups, actions and behaviours may look different in practice (Tilbury, 1995). Whilst one of the roles of EfS is to support children to shape their values toward an environmental ethic and become active citizens who make change toward a more sustainable society (Burns, Diamond-Vaught, & Bauman, 2015; Murray, 2011; Tilbury, 1995), knowledge alone is not enough to change behaviour. It is also “dependent on personal motivation and a sense of responsibility which results from the development of a personal environmental ethic” (Tilbury, 1995, p. 201). When values and beliefs about the issues associated with sustainability are strong, they become part of the teacher’s identity and provide a personal motivation to incorporate those values into their teaching (Kennelly, Taylor, & Maxwell, 2008).

### ***Sustainability leadership***

Sustainability leaders are guided by values and beliefs that are grounded in connectedness with nature and other living beings, and they are committed to making change toward a sustainable world and supporting others to do the same. Their approach goes beyond their self-interest to a personal ethic that has the belief that they can make change individually and with others (Ferdig, 2007). A teacher guided by such beliefs has the ability to become a sustainability leader within their centre.

Early childhood in Aotearoa/New Zealand has an advantage in providing a context for sustainability leaders to emerge. As the sector is required to apply a team approach to their teaching, Clarkin-Phillips (2009) found that distributed leadership was an effective way for teachers to become leaders. In a distributed leadership model, the responsibility for leading change does not fall on the shoulders of the person in the position of ‘leader’. Rather leadership draws on the strengths and abilities of all individuals in the setting, and recognises that all are able to make change when they work together in a collaborative manner. Similarly in Australia, Gibson (2010) found that when leadership was distributed within her centre, and teachers were encouraged to create



their own goals and visions, a deep cultural shift occurred in the centre, and sustainability became the core value upon which all teaching was based.

In order to become a sustainability leader, the individual has to have a self-belief that they can enact change. They need to be able to show commitment to the action they want to take, and be able to clearly articulate the key issues in order to advocate for change (Ferreira et al., 2015). Tilbury (1995) outlines components that make up the complex nature of EfS. These components include a holistic approach that integrates EfS across curriculum areas, issues-based and action-based learning where children develop an understanding of environmental and sustainability problems and how they can address these problems, and finally political literacy and critical thinking skills so children are able to engage in democratic decision-making and action to make change (Tilbury, 1995). Sustainability leaders understand these complexities and are able to apply these to their early childhood settings to make transformational change. Studies show that such leadership is evident within centres where passionate individuals inspire others to engage with environmentally aware practices. Numerous studies in early childhood have shown that when sustainability leaders (teachers) fostered children's democratic understanding of sustainability issues, children enacted change through their active engagement in decision making (Davis, 2005; Mackey, 2012; Phillip, 2014; Ritchie, 2010; Vaealiki & Mackey, 2008).

### ***Integrating education for sustainability into early childhood***

It has been found that EfS is most effective when there is a whole centre approach that is holistic and integrates it across the curriculum, which places early childhood at a "pedagogical advantage" (Elliott, 2010, p. 35). Teaching pedagogies in early childhood tend to be holistic, involving an interactive approach to teaching and learning that engages children fully within the learning experience. The studies mentioned above engaged the whole centre community and leadership was shared between teachers and children. Teachers observed and listened to children's ideas. They took their cues from the children and engaged them in meaningful discussion to support their learning. A culture of shared understanding developed as children and teachers worked alongside each other, learning about caring for their environment, both within the centre and within the local community, through a variety of projects (Davis, 2005; Mackey, 2012; Phillip, 2014; Ritchie, 2010; Vaealiki & Mackey, 2008).

### ***Pedagogical approach to education for sustainability that fosters leadership and change***

It has been recognised that for EfS to be effective to action change for the future, then its pedagogy needs to be not only underpinned by constructivist theory, it must also "change from the transmission model of education to a transformational model" (Jenkins, 2009, p. 32). Similarly, leaders of sustainability adopt an approach that is underpinned by the transformational model that can result in a deep shift in values and beliefs within the person that alters their view of the world (Burns et al., 2015).

One such pedagogical approach considers all elements of sustainability and engages learners in experiential learning 'in, about and for' the environment (Barker & Rogers, 2004). This approach is underpinned by social constructivist theory that provides learners with opportunities to learn alongside others to gain knowledge and develop their values and beliefs, whilst engaging in hands-on learning about the environment or sustainability issue. Education 'in' the environment is a teaching approach that has children engaged in activities in the environment, whereas 'about' the environment has children gaining knowledge of environmental issues, and 'for' the environment is teaching children how to make change guided by their experience in the environment and the knowledge they have gained (Barker & Rogers, 2004). These three concepts cannot be taught independently of each other, rather they need to be taught together as a whole.



Education ‘for’ the environment deems that it is not enough to just bring the issues to the knowledge of the children and engage them in the environment. Knowledge in isolation may increase the risk of raising children’s anxiety levels and a sense of helplessness about the state of the environment (Jensen & Schnack, 1997). Education ‘for’ the environment gives children opportunities to discuss these issues, develop critical thinking skills, political understanding and the ability to make decisions and action change (Tilbury, 1995).

Teachers lead and support children to develop a greater awareness of environmental issues, develop their own set of values that prompt them to want to make change, and develop skills to perform democratic action that will have a positive impact for the future (Jensen & Schnack, 1997). Action competence has the capacity to teach learners from early childhood through to adulthood. Research has shown that even very young children have the capacity to understand environmental issues and make change in their own lives and influence their families (Duhn et al., 2010; Gambino, Davis, & Rowntree, 2009). For example, children were found to be policing their parents’ actions leading to changes in the goods that they purchased, as children were checking for triangles on plastic items to make sure they can be recycled, or asking parents to not use plastic wrap for wrapping lunch as it had to go to the landfill (Ritchie, 2010; Vaealiki & Mackey, 2008).

A pedagogical approach such as ‘in’, ‘about’ and ‘for’ the environment gives teachers the opportunity to become sustainability leaders within their centres. Ferdig (2007) contends that a sustainability leader “possesses a spirit of inquiry and learning...and model learning in action...encouraging people around them to do the same while developing a deeper understanding of challenges and solutions” (p. 33). Engaging in education ‘for’ the environment creates scope for sustainability teacher leaders to work with children, colleagues and families in a collaborative and collective way to understand sustainability issues and create solutions to help address the issues.

Some early childhood centres already engage in a number of practices that give children hands-on experiences of environmental practices, learning ‘in’ and ‘about’ the environment. However, they often do not engage in ‘for’ the environment (Elliott, 2010). This may be because they believe that teaching children ‘in’ and ‘about’ is enough as children in early childhood are too young to understand the deeper issues in order to make decisions on how they can effect change (Elliott & Davis, 2009). However, studies cited in this article and elsewhere demonstrate that children have the capacity to understand and willingness to make change within their centres, at home and in some instances the wider community (Davis, 2005; Duhn et al., 2010; Ritchie, 2010; Vaealiki & Mackey, 2008).

## **Conclusion**

Whilst raising awareness is a way of encouraging teachers to engage in EfS and may result in an increase in sustainability practices, it may not be enough to create a change in thinking toward a culture of EfS in early childhood. Therefore, there is a need for teachers with a passion and belief in sustainability to become leaders who can facilitate a change in thinking that transforms centre culture to embrace the values of EfS. These leaders will need to be aware of their own deeply held values and beliefs so they are able to clearly articulate their ideas in order to gain the support of centre owners, management, colleagues and the wider centre community to make effective change. This will take time as teachers need to engage in dialogue with their colleagues and centre management, share their visions and ideas and possibly undertake professional development.

Change could also come from centre management and centre owners who have a personal motivation to create a centre culture that has EfS as a core value (Gibson, 2010). As such, they are likely to employ teachers who have a shared motivation toward sustainability. This could lead to opportunities for teachers with a passion for EfS to become sustainability leaders within their centres. It could also provide a platform from which a distributed model of leadership can emerge where individuals take responsibility for aspects of the programme that interest them and lead change that builds on the principles of sustainability.



Whether a change of culture comes from within the organisation or from management and ownership, sustainability teacher leaders will need to have a belief in what they are doing, the motivation to engage others, and an understanding of the best pedagogical approach to achieve sustained change within the centre culture so they support children to be active citizens in the community they live in. It is recommended that research into the value of sustainability leadership for making change is undertaken in early childhood in Aotearoa/New Zealand.



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