



Scarborough

308HSCSC

Supporting Early Childhood Education for
Sustainability using themes in children's picture
books about the environment

Contents	Page number
Abstract	4
Introduction	5
Review of literature	6
Methodology	11
Research findings	12
Analysis	14
Conclusion	18
References	19

Abstract

Picture books are used widely throughout early years settings in supporting the development of literacy skills. This research considers how themes and messages in picture books about the environment might be used to support early childhood education for sustainability (ECEfS). A wide range of literature has been reviewed for the purpose of the research. Existing research suggests that although there is no universally recognised way in which ECEfS should be implemented, three interlinked components of education *in, about* and *for* the environment are integral to programmes. The analysis examines five children's picture books about the environment recommended for three to eight-year-olds, identifying a number of themes within the narratives. The findings of the research suggest that picture books can support the development of basic environmental literacy and also ecoliteracy, where agency and accountability are addressed within the narrative. The ability of picture books to truly engage a young reader and offer a transformative experience relies on the support and encouragement of reflective practitioners.

Introduction

The way in which children will be disproportionately affected by ‘. . . runaway climate change and the massive loss of biodiversity’ is discussed by Weldemariam and Wals (2020:13), who highlight the crucial role of early childhood education in counteracting the environmental destruction caused by the human race. Chapter 25 of the 1992 Earth Summit’s Agenda 21 (UNCED 1992) states that the long-term success of sustainable development is dependent on the involvement of children and youth, whose perspectives must be considered. The United Nations Decade of Education for Sustainable Development (DESD) 2005-2014 (UNESCO 2005) was aimed at the creation of a more sustainable future through the integration of the associated values and practices into all areas of education. The DESD recognised the role of education as one of the many paths towards achieving sustainable development. Sustainable Development Goal 4 (SDG 4) of the UN Education Agenda 2030 (UNESCO 2019) describes education as ‘a human right and a force for sustainable development and peace’.

The aim of this study is to examine the key components of early childhood education for sustainability (ECEfS) and where children’s environmental literature, specifically young children’s picture books fit within such programmes.

Review of Literature

Davis (2009:239) summarises that research from the fields of neuroscience, economics and health, has suggested that investments in early childhood have the potential to benefit not only the individual but also wider society. More specifically, Green (2015:207) states that the early years are a key period during which children construct the foundations of their environmental identity. In a document entitled 'Starting Strong II: Early Childhood Education and Care', the Organisation for Economic Co-operation and Development (OECD) (2006:18) stated that 'wider societal interests' must be reflected in early childhood programmes which promote 'democratic participation' and 'respect for our shared environment'.

Engdahl (2015) discusses the findings of research carried out for The World Organisation for Early Childhood Education (OMEP) between 2009 and 2014. The research, involving over 44,330 children and 13,225 teachers across 28 countries, was aimed at increasing awareness of education for sustainable development (ESD) within the early childhood community (Engdahl 2015: 347). Participation and involvement are listed by Engdahl (2015: 349) as fundamental aspects of ESD, through which children are empowered to develop agency, adding that the 'social and cultural transformations' needed in achieving sustainable development will require that pedagogies and educational programmes are reconsidered. Over a decade ago, Davis (2009: 229) recognised Scandinavian countries, particularly Norway, as being world leaders in relation to ECEfS, with the subject being a formal part of the Norwegian national curriculum. Recently revised curricula in Norway, Sweden and Japan have set new international benchmarks for ECEfS, however a lack of clarity still exists within the field. According to Elliott et al (2020: 64), reported challenges include the need for 'pre-service and in-service practitioner and professional education in ECEfS, confusion around the terminologies and conceptual understandings of sustainability'.

In an article which explores common understandings of ESD, Hedelfalk, Almqvist and Ostman (2015:979) discuss the differences between education

about, in and for the environment. Education *about* the environment is concerned with natural systems such as the water cycle and plant growth; education *in* the environment occurs through outdoor experiences; education *for* the environment requires active participation and critical thinking. Education *for* the environment is described by Davis (2009:230) as transformative, in which children are viewed as competent, able to problem-solve and take action for the environment. Gaard (2008:20) discusses an ecopedagogy in which theory and practice are combined to provide the knowledge and experiential learning necessary for tackling the ecojustice problem. Ecopedagogy consists of three aspects: the development of basic environmental literacy; cultural ecoliteracy which requires the critique of unsustainable practices alongside the study of sustainable cultures; lastly a 'critique of the anti-ecological effects of industrial capitalism, colonialism, imperialism, and ruling-class culture' (Gaard 2008:15). When considering these three aspects of ecopedagogy, aspect one can be supported by the use of children's environmental literature – education *about* the environment. Aspects two and three of this ecopedagogy reflect the critical thinking required during education *for* the environment.

Luff (2018:448) states that outdoor experiences in nature can provide the sensory experiences through which children can become active participants, developing creative and critical thinking skills. Gaard (2008:20) adds that these experiences within nature foster the attachment needed for a deeper learning to take place and for behaviours to change. Environmental literature 'appeals to both the emotions and the intellect', having the ability to leave a lasting impression on a child (Gaard 2008:20). According to Op de Beeck (2018:80), when combined with experiential learning, children's environmental literature has the potential to 'communicate complex ecocritical values' to young children. When books are explored from a standpoint of environmental justice, we adopt a new perspective, viewing the world through a critical lens whilst carrying out our daily activities.

Muthukrishnan (2019:19) summarises ecoliteracy as a sustainable mindset, based on an understanding of ecology and the finite nature of natural resources available to humans. According to Muthukrishnan (2019:19), the development

of ecoliteracy is critical in ensuring the survival of both the planet and the human race and should therefore be supported from a young age. The role of literature in the development and education of children is discussed by Ramos and Ramos (2015) who define the concept of ecoliteracy as addressing the complexity of the world and the relationship between humans and the environment. According to Ramos and Ramos (2015:105), ecoliteracy can be developed through agency and accountability present within a narrative. Echterling (2016:287) highlights the nature of picture books as often being 'explicitly pedagogical', with the intention of educating children about a particular topic, promoting both beliefs and behaviours. In an examination of children's environmental literature, Echterling (2016) highlights the oversimplification of environmental problems within some texts which suggest that such problems can be managed by individual actions and lifestyle changes alone. There is a need for such picture books which address the relationship between 'environmental degradation and systemic social problems', in which children are reflected as political subjects and activists (Echterling 2016:288). Similarly, Gaard (2008:21) calls for children's environmental literature that demands 'personal and socio-political changes' through the creation of 'intergenerational, inter-cultural and inter-species communities'. Gaard (2008: 15) acknowledges the power of narratives to promote connection and community and reflect the true nature of interdependence between humans and the natural world.

The concept of agency is explored by Caiman and Lundegard (2014) as something which is achieved and constructed through experience and interactions with others. Boyd (2019: 993) highlights the importance of the ethos of a setting in relation to the development of children's agency. Practitioners must take time to listen to the voices of children and reflect upon their own practice, whilst also allowing children time to reflect and develop their critical thinking skills. Through the transformative nature of education *for* the environment, children are able to identify issues and suggest possible solutions, therefore building the foundations of political activism (Boyd 2019:993). Weldemariam and Wals (2020:13) note the concept of 'young children as agents of change for sustainability' as being central to current discussions in

the field of ECEfS. Whilst acknowledging the importance of empowering children and supporting agency, Weldemariam and Wals (2020:16) suggest current anthropocentric approaches within ECEfS overlook the agency of non-human beings, implying they are passive and 'awaiting children's action'. It is the belief of Weldemariam and Wals (2020:17) that a post-anthropocentric perspective which recognises the agency of non-human species and rejects the notion of species hierarchy, can support children to recognise their place in an interconnected and complex natural world. Weldemariam and Wals (2020:21) emphasise the crucial role of the practitioner in a transformative pedagogy, in which children become entangled with their natural surroundings and are prepared to challenge the widespread 'anthropocentric worldview'. This recent research would suggest that practitioners must think of children as agents of change not separate from nature, but as part of nature, acting alongside and entangled with non-human species.

The concept of books as sliding glass doors through which readers are empowered to take action is discussed by Johnson, Koss and Martinez (2018). Literature has the power to serve as a mirror, in which we see some aspect of ourselves reflected; a window in which we are exposed to a new experience or perspective, often challenging our own perspective; or a sliding glass door, in which the reader is able to step into another world, experiencing empowerment and transformation (Johnson, Koss and Martinez 2018:572). The importance of characters within literature is also emphasized by Johnson, Koss and Martinez (2018:572), who state that a character has the power to create personal and emotional connections between the reader and the narrative, thus enabling transformation. When presented with books which provide a sliding glass door experience, young readers can view the world through a critical eye and with the encouragement of practitioners, are able to reflect and possibly experience transformation.

Despite the developments around ECEfS that have taken place in the past decade, research would suggest that many challenges still exist regarding the implementation of appropriate pedagogies and programmes. Literature which addresses the complex relationship between humans and the natural world and

addresses both agency and accountability, most likely supports the development of ecoliteracy. The ability of books to enable transformation through sliding glass door experiences may require the support and guidance of a practitioner. Through reflecting on themes within children's environmental literature, a practitioner should consider the message a narrative gives to a child and whether the book empowers the child and inspires activism, or whether environmental issues are even presented as problematic.

Methodology

The aim of this study is to gain a deeper understanding of environmental themes within children's picture books and is based on the personal interests of the researcher. The study is subjective in nature and is therefore qualitative. The data gathered in the study is based on the interpretation of the researcher alone and the subjectivity of the researcher will be used to interpret data gathered. The small-scale study will use purposive, non-probability sampling. The sample of five picture books used for the study has been obtained from the BookTrust website; the BookTrust is the UK's largest children's reading charity. The sample has been taken from a recommended reading list of sixteen books about the environment for younger children. The books have been selected based on the suggested interest level of three to eight years, which is most appropriate for the study. The study will analyse the text and illustrations within five picture books to identify themes and messages, therefore content analysis has been selected as the most appropriate method of data analysis.

For this research, Coventry University ethical guidelines have been adhered to and an ethical consent form has been approved by a university supervisor. In addition, no research was undertaken until ethical approval had been granted. As the research was carried out using secondary sources and therefore did not involve any other participants other than the researcher, there were few ethical considerations.

Research Findings

The following environmental themes have been identified within the sample of five books: deforestation, habitat loss, plastic pollution and species loss. Habitat loss will be discussed alongside other environmental themes, where relevant. Additional themes have also been identified with regard to how agency is represented in relation to the environmental issues addressed within the narrative. These are: individual agency, collective agency and political activism. The findings are summarised in the table below.

Text	Description	Themes
Clem and Crab, author-illustrator F. Lumbers	Clem finds a friend in a crab whilst collecting plastic from the beach for use in a school project, before inspiring her classmates to take action.	Plastic pollution, individual agency, collective agency
Greta and the Giants, author Z. Tucker, illustrator Z. Persico	When Greta is approached by a number of homeless animals, she takes a stand to stop the greedy behaviour of the Giants and finds herself joined by a crowd of like-minded people.	Deforestation, habitat loss, individual agency, collective agency, political activism
The Last Wolf, author-illustrator M. Grey	Little Red heads to the forest to catch a wolf, only to find that the Last Wolf is living in a tree-cave, along with the Last Bear and the Last Lynx.	Deforestation, habitat loss, species loss, individual agency, collective agency,
There's a Rang-Tan in My Bedroom, author J. Sellick, illustrator F. Preston-Gannon	A young girl is inspired to take action when she learns why an orangutan has taken refuge in her bedroom.	Deforestation, habitat loss, individual agency, collective agency, political activism

Somebody Swallowed Stanley, author S. Roberts, illustrator H. Peck	Stanley the plastic bag is swallowed by several creatures before being found by a boy who turns him into a kite.	Plastic pollution, individual agency
--	--	---

Analysis

The theme of deforestation can be clearly identified within three of the books. In 'Greta and the Giants' (Tucker 2019) the Giants have chopped down so many trees, that hardly any forest remains and the responsibility of the Giants in causing the loss of habitat is explicit. The Giants represent the anthropocentric nature of western culture and its disregard for the environment. The illustrations show a world of pollution, with grey smoke billowing from chimneys. The narrative tells a tale of unsustainable development and urbanisation, the Giants seemingly oblivious of the destruction they have caused. Similarly, the deforestation within 'There's a Rang-Tan in My Bedroom' (Sellick 2019) is identified by Rang-tan as being caused by humans (Sellick 2019: 8). In 'The Last Wolf' (Grey 2019), the deforestation has also caused a loss of habitat, leaving only a single wolf, lynx and a bear, however the responsible party is not clearly identified.

In 'Greta and the Giants' (Tucker 2019), Greta takes a lone stand before being joined by more people and animals, all holding placards therefore demonstrating collective agency and political activism. This 'intergenerational, inter-cultural, and inter-species' community within a narrative of resistance reflects that described by Gaard (2008:21), who states that such narratives are essential for environmental justice. In addition, Gaard (2008:19) suggests the agency of animal species within a narrative is important in 'restoring the subjectivity of nature'. 'Greta and the Giants' highlights the collective agency and political activism necessary in the pursuit of sustainable development, however the narrative over-simplifies the complex issues of 'environmental degradation and systemic social problems', as described by Echterling (2016: 283). This over-simplification of the restoration of balance leaves an opportunity for the practitioner to question young readers' thoughts on whether such issues are so easily resolved. The character within 'There's a Rang-tan in My Bedroom' (Sellick 2019) also shows agency and political activism, when she states that she will fight to save the forest (Sellick 2019:15). The illustrations picture the girl posting a campaign letter and sharing the plight of Rang-tan with her classmates, who in turn join her campaign. The illustrations show the

children holding placards which again suggests political activism and a demand for environmental justice. The final illustration shows the young girl and Rang-tan embracing one another, about to face a future which is yet to be written. This suggests that the girl is at one with and not separate from the orangutan, as emphasised by Weldemariam and Wals (2020). In 'The Last Wolf' (Grey 2019), Little Red is helped to plant trees by her mother, which again represents the intergenerational action described by Gaard (2008:21). This goes some way to developing the ecoliteracy discussed by Ramos and Ramos (2015), as Little Red and her mother demonstrate agency when they plant three trees in an effort to restore balance. The narrative does not clearly identify humans as responsible for the deforestation that has resulted in the loss of habitat. In contrast, the clear responsibility of humans in causing the problem and the collective agency within both 'Greta and the Giants' and 'There's a Rang-tan in My Bedroom' most likely support the development of ecoliteracy, as described by Ramos and Ramos (2015).

Two of the books within the sample address the issue of plastic pollution within the seas and oceans. The narrative and illustrations within 'Somebody Swallowed Stanley' (Roberts 2019) highlight the harm that a plastic bag can cause to sea creatures, however there is no acknowledgement of humans as being responsible for plastic pollution. The final illustrations show the boy using Stanley to construct a kite, therefore demonstrating how plastics can be reused through individual agency. The illustrations fail to reflect the sheer problem of plastic pollution within the oceans and the narrative implies that Stanley is the only plastic bag in need of removal. 'Somebody Swallowed Stanley' is an example of how a huge environmental problem is represented very simply, in isolation from the larger context, as highlighted by Echterling (2016:289). In contrast, the illustrations within 'Clem and Crab' (Lumbers 2020) picture a beach littered with all manner of plastics that 'other people had left behind' (Lumbers 2020:2). This brief acknowledgement of humans as being responsible for the pollution is an introduction to the ecoliteracy described by Ramos and Ramos (2015). At the beginning of the narrative, 'Clem', through individual agency, collects the plastics for recycling and use in a school project. She then visits an aquarium where she learns about 'the huge problem of

plastics in the ocean, and what we can all do to help' (Lumbers 2020:14). The book concludes with Clem returning to the beach to find her classmates engaged in a beach clean. The intergenerational, collective agency needed in removing plastics from a beach is demonstrated here, however political activism is not a feature of the narrative. The narrative also fails to address the wider context of plastic overuse and unsustainable consumer habits.

One book has been identified as most likely to provide a mirror through which a reader is able to identify with some familiar aspect. 'Clem and Crab' (Lumbers 2020) illustrates the multi-cultural nature of a modern, western society therefore reflecting the cultural familiarity described by Johnson, Koss and Martinez (2017:571). Two books are most likely to provide the reader with a window to a world 'removed from their own' (Johnson, Koss and Martinez 2017:572). 'The Last Wolf' (Grey 2019) and 'Somebody Swallowed Stanley' (Roberts 2019) feature creatures and a plastic bag with anthropomorphic characteristics with the addition of human characters. For this reason, these books may be more likely to challenge the thinking of the reader through the offering of a connection, as discussed by Johnson, Koss and Martinez (2017:572).

Two books which are most likely to provide the reader with a transformative, sliding glass door experience (Johnson, Koss and Martinez 2017:572) are 'Great and the Giants' (Tucker 2019) and 'There's a Rang-Tan in My Bedroom' (Sellick 2019). Greta is changed when she meets the animals who request her help and after learning of Rang-tan's plight, the young girl is inspired to take action. Both characters adopt a position of agency in the name of environmental justice, possibly inspiring the reader in a similar way. In addition, 'Greta and the Giants' pictures an 'intergenerational, inter-cultural and inter-species' community engaged in political activism, which most likely reflects the true nature of a child's place within nature, as discussed by Weldemariam and Wals (2020).

The themes of deforestation, habitat loss, plastic pollution and species loss have been identified within the sample of five books. Agency has been identified in all five books, with the books demonstrating a combination of individual

agency, collective agency and political activism. Some of the books are likely support the development of ecoliteracy as discussed by Ramos and Ramos (2015) through agency and accountability present within the narratives. Two books have been identified as most likely to offer a sliding glass door through which a young reader can venture, possibly experiencing transformation. All of the books are most likely useful in supporting ECEfS, however, the books which address both agency and accountability whilst demonstrating the political activism necessary in demanding environmental justice, have the potential to captivate a young reader, providing a transformative experience.

Conclusion

There is much work to be done on a global level in tackling the deep-rooted inequalities which prevent sustainable development. The challenge is a complex one which will require the collaboration of both governments and agencies across the globe. Education is recognised by the UN Education Agenda 2030 (UNESCO 2019) and also by members of the academic community as a being a driver for the change so urgently needed if sustainable development is to be achieved. As the foundation for lifelong learning, early childhood education must be the starting point for ESD. Recent research highlights the many challenges in implementing ECEfS programmes, however experiential learning is regarded as central to providing meaningful experiences through which both children and practitioners can participate in the co-construction of knowledge. Education *in* the environment should be supported by education *about* the environment, in which children's knowledge and understanding of environmental issues can develop and the foundations of ecoliteracy are laid. There is undoubtedly a place for picture books which develop basic environmental literacy through providing factual information and addressing specific environmental issues. There is, however, a need for practitioners to consider whether a book is thought-provoking and likely to serve as a mirror, window or a sliding glass door. Does the book suggest that an environmental issue will be solved by individual actions alone or is there a need for collective action and political activism? Books which act as sliding glass doors may transport a reader into another world in which they are entangled with nature and are inspired to become agents of change. Such books should reflect children as political subjects. It might be helpful for educators to organise books along a spectrum, beginning with books which support the development of basic environmental literacy, through to books which support the development of ecoliteracy, through the presence of agency and accountability within the narrative. When guided by a reflective practitioner, books which challenge thinking and promote political activism could empower and inspire slightly older readers to seek environmental justice. Through this transformative experience of education *for* the environment, children are encouraged to think critically, problem-solve, and become agents of change.

References

Boyd, D. (2019) 'Utilising place-based learning through local contexts to develop agents of change in Early Childhood Education for Sustainability'. *Education 3-13* 47 (8), 983-997

Caiman, C. and Lundegard, I. (2014) 'Pre-school children's agency in learning for sustainable development'. *Environmental Education Research* 20 (4), 437-459

Davis, J. (2009) 'Revealing the research 'hole' of early childhood education for sustainability: a preliminary survey of the literature'. *Environmental Education Research* 15 (2), 227-241

Echterling, C. (2016) 'How to Save the World and Other Lessons from Children's Environmental Literature'. *Children's Literature in Education* 47 (1), 283-299

Elliott, S., Arlemalm-Hagser, E., Okjong, J., Wang, W. and Mackey, G. 'An Update on Countries Previously Represented in the First Volume (Australia, Japan, South Korea, New Zealand, Norway, Sweden, United Kingdom, plus China)'. in *Researching Early Childhood Education for Sustainability*. ed. by Elliott, S., Arlemalm-Hagser, E. and Davis, J. Abingdon: Routledge, 53-68

Engdahl, I. (2015) 'Early Childhood Education for Sustainability: The OMEP World Project'. *International Journal of Early Childhood* 47 (1), 347-366

Gaard, G. (2008) 'Toward an Ecopedagogy of Children's Environmental Literature'. *Green Theory and Praxis: The Journal of Ecopedagogy* 4 (2), 11-24

Green, C. (2015) 'Toward Young Children as Active Researchers: A Critical Review of the Methodologies and Methods in Early Childhood Environmental Education'. *The Journal of Environmental Education* 46 (4), 207-229

Grey, M. (2019) *The Last Wolf*. London: Red Fox

Hedefalk, M., Almqvist, J. and Ostman, L. 'Education for sustainable development in early childhood education: a review of the research literature'. *Environmental Education Research* 21 (7), 975-990

Johnson, N., Koss, M. and Martinez, M. (2018) 'Through the Sliding Glass Door: EmpowerTheReader'. *The Reading Teacher* 71 (5), 569-577

Luff, P. (2018) 'Early childhood education for sustainability: origins and inspirations in the work of John Dewey'. *Education 3-13* 46 (4), 447-455

Lumbers, F. (2020) *Clem and Crab*. London: Andersen Press Limited

Muthukrishnan, R. (2019) 'Using Picture Books to Enhance Ecoliteracy of First-Grade Students'. *The International Journal of Early Childhood Environmental Education* 6 (2), 19-41

Organisation for Economic Co-operation and Development (2006) *Starting Strong II: Early Childhood Education and Care*. [online] available from <<http://www.oecd.org/education/school/37417240.pdf>> [8 December 2020]

Op de Beeck, N. (2018) 'Children's Ecoliterature and the New Nature Study'. *Children's Literature in Education* 49 (1), 73-85

Ramos, R. and Ramos, A. (2015) 'Children's Literature and the Promotion of Environmental Ethics in Portugal'. *Portuguese Studies* 31 (1), 94-106

Roberts, S. (2019) *Somebody Swallowed Stanley*. London: Scholastic

Sellick, J. (2019) *There's a Rang-Tan in My Bedroom*. London: Wren & Rook

Tucker, Z. (2019) *Greta and The Giants*. London: Frances Lincoln

UNESCO (2005) *UN Decade of Education for Sustainable Development 2005-2014*. [online] available from <<https://unesdoc.unesco.org/ark:/48223/pf0000141629>> [23 November 2020]

UNESCO (2019) *Leading SDG 4 – Education 2030*. [online] available from <<https://en.unesco.org/themes/education2030-sdg4>> [9 December 2020]

United Nations Conference on Environment and Development (1992) *Agenda 21*. [online] available from <<https://sustainabledevelopment.un.org/content/documents/Agenda21.pdf>> [22 November 2020]

Weldemariam, K. and Wals, A. (2020) 'From Autonomous Child to a Child Entangled Within an Agentic World'. in *Researching Early Childhood Education for Sustainability*. ed. by Elliott, S., Arlemalm-Hagser, E. and Davis, J. Abingdon: Routledge, 13-24

