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To cite this article: Sarah Collins & Sheila Garrity (2025) Early childhood educators' understanding of education for sustainable development, Irish Educational Studies, 44:2, 281-299, DOI: [10.1080/03323315.2023.2266688](https://doi.org/10.1080/03323315.2023.2266688)

To link to this article: <https://doi.org/10.1080/03323315.2023.2266688>



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Published online: 11 Oct 2023.



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Early childhood educators' understanding of education for sustainable development

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ABSTRACT

Education for sustainable development (ESD) prepares learners for global citizenship. It is considered the great hope through which Anthropogenic destruction can be halted and a sustainable future created. In Ireland, relevant State departments suggest Aistear, The Early Childhood Curriculum Framework, supports ESD in Early Childhood Education and Care (ECEC) practice. However, there is an absence of research concerning how or if Irish educators are facilitating ESD in ECEC. Bringing a children's rights lens and systems-perspective, this article reports on a quantitative study framed within the Irish policy context. It offers first insight into educators' practices and engagement with ESD in ECEC. Findings reveal educators feel inadequately prepared to facilitate ESD; they are either unsure or do not believe Aistear contains ESD content or facilitates their practice in this area. When viewed through a systematic lens missed opportunities to realise the goal of ESD in Irish ECEC are evident. It is highly probable large discrepancies exist in ESD implementation. This article joins other voices calling for the current updating of Aistear to ensure the presence of ESD. The implementation of the revised framework must include robust training, as, at present educators lack a foundation on which to base their ESD practice.

ARTICLE HISTORY

Received 24 February 2023
Accepted 30 September 2023

KEYWORDS

ESD/Education for Sustainable Development; aistear; early childhood education and care; agency; citizenship

Introduction

Earth Overshoot Day marks the date each year when the human demands placed on Earth's ecological resources exceed what can be regenerated in that year. This year, 2023, it fell on August 2nd (overshootday.org 2023). Each year it falls earlier, indicating human behaviour is depleting earth's natural resources and ecosystems, warning that the status quo cannot continue. The frightening reality is that anthropogenic destruction is so profound, if we do not take sustainable action our very survival is threatened (UNESCO 2021).

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Early Childhood Education and Care (ECEC) settings offer a foundation on which lifelong pro-environmental and sustainable attitudes can be built (Ärlemalm-Hagsér 2013; Burnett 2008). With the shift to a sustainable future a matter of urgency, Early Childhood Educators (referred to as 'educators' herein) play a significant role, empowering children to make informed decisions as they take individual and collective action for sustainable change (Bahtić and Višnjić Jevtić 2020). In the absence of current Irish research in this area, a small-scale study sought to explore practices in education for sustainable development (ESD) in the Irish ECEC sector. Bringing a children's rights lens and a systems perspective to matters of sustainability, this article shares findings of this study, framed within the Irish policy context and underpinned by current knowledge.

Education for sustainable development

The Sustainable Development Goals (SDGs) (United Nations (UN) 2021) aim to achieve a world that is fair, just and peaceful towards its people, while also having concern for our planet and its limited resources (Nikiforidou, Lavin-Miles, and Luff 2020a). Education, including early education, is considered the great hope through which anthropogenic destruction can be halted and a more sustainable future created (UNESCO 2005). Therefore, conscientious sustainability-focused citizenship is not something that should suddenly be expected when one enters adulthood; instead even the youngest children must be engaged in social and environmental issues (UNICEF 2003).

Reflecting ESD, Pramling Samuelsson and Kaga (2008) states, children, as citizens and rights holders under the United Nations Convention on the Rights of the Child have the right to participate sustainably for their present and their future. They must be empowered to think about, and to take sustainable actions for that future (Nikiforidou, Lavin-Miles, and Luff 2020b). This ability to take action and exhibit agency is key to ESD: children have a right to be provided with opportunities to participate and to voice opinions (Wolff, Skarstein, and Skarstein 2020), to recognise problems and search for information and solutions (Ryzhova 2016), and make changes in their local environment, their communities and even globally (Læssøe 2010; UNESCO 2014). Reflecting a systemic, holistic understanding, ESD perceives local actions having global consequences and therefore should empower children to take a wider perspective on global issues by combining environmental education with issues of social justice (Ärlemalm-Hagsér 2013).

Scoffham (2020, 23) proposes ESD involves the 'head, hand and heart'. It should not only offer children an understanding of ecology, but also of people, cultures, inequality and diversity, of 'ways of being, relating, behaving, believing, and acting differently' (Pressoir 2008, 60). We have the greatest capacity to ingrain many of our fundamental attitudes and values from early to middle childhood (UNESCO 2014) including pro-environmental (Ärlemalm-Hagsér 2013) and anti-bias attitudes (Connolly 2007). ECEC offers the formative arena in which to lay the foundation for a lifelong contribution to such a sustainable society (Burnett 2008). It is important that ESD is not treated as a separate subject, but instead treated holistically, as something which permeates curriculum content and learning experiences (Yan and Fengfeng 2008). In this way, children are not taught about sustainability but rather learn to become sustainable. If pedagogical interventions do not nurture environmental (Engdahl and Rabušicová

2011; Siraj-Blatchford 2009) or challenge prejudicial (Derman-Sparks and Ramsey 2005) attitudes at this young age, then they may never be positively developed.

International policy

A concerted international response to the challenges of global climate change was first captured in the United Nations sponsored Brundtland Report (1987), which explored the systemic links between environmental deterioration and social and economic inequality. Building on 'Brundtland', in 2015, *The 2030 Agenda for Sustainable Development* and its 17 Sustainable Development Goals (SDGs) was adopted by 184 UN member states, including Ireland (UN 2021). The SDGs provide the interrelated blueprint for sustainable prosperity, urging countries to end hunger and poverty, improve health, reduce inequality, tackle climate change and work to preserve life on land and in oceans (UN 2021). Due to the critical interdependence between quality education and the learning approaches of ESD, it is widely recognised that *Goal 4: Quality Education*, is essential for the successful implementation of all other SDGs (Didham et al. 2018; UNESCO 2016).

The anthropocene

The term 'Anthropocene', offers 'a powerful tool to validate the ongoing process of anthropogenic climate change, which has impacted the Earth in such a profound and enduring manner that it needs a new geological era to depict it properly' (Trischler 2016, 310). The Anthropocene, from the Greek: *anthropos*, meaning 'human', and *cene*, denoting 'new' or 'recent' (Laurance 2019; Steffen et al. 2011), marks a new world, one of our own making, begotten by catastrophic human power and dominance, modifying, impoverishing and degrading our planet's systems. The SDGs are a response to this crisis, recognising this dominance has led to population sizes of mammals, fish, amphibians, insects, birds and reptiles decreasing an average of 68% since 1970 (WWF 2020). Accordingly, Wolff, Skarstein, and Skarstein (2020) highlight a sixth mass extinction, caused solely by anthropogenic influences, having severe consequences for ecosystems, and therefore existential and environmental threats for human existence.

Economic and social inequality

As the SDGs highlight, the impact of global climate change is systematic in nature, exacerbating the prevalence and extent of global economic and social inequality. Poorer countries are excessively harmed by wealthier countries' energy consumption, with a greater than 90% probability their gross domestic product is lower today than if global warming had not occurred (Diftenbaugh and Burke 2019). The effects of resource overuse and the resulting ecological overdraft each year have caused degraded land, collapsing fisheries, changing weather patterns and depletion of fresh-water systems. This has led to resource conflicts, mass migrations, famine and disease, which disproportionately impacts those who cannot buy their way out of the problem (Foley, Bogue, and Onakuse 2016). Consequently, inequality is ubiquitous: today the richest 1% have twice as much wealth as 6.9 billion people (Oxfam International 2021).

National policy

The publication of *‘Education for Sustainability’ The National Strategy on Education for Sustainable Development in Ireland (2014–2020)*¹ (DES 2014) formalised Ireland’s ESD policy. The intent of the *Strategy* was to introduce ESD into all areas of Irish education, and to equip:

learners with the relevant knowledge (the ‘what’), the key dispositions and skills (the ‘how’) and the values (the ‘why’) that will motivate and empower them throughout their lives. (DES 2014, 3)

Proposing Ireland could be an international leader in promoting ESD in ECEC, the *Strategy* called for the embedding of ESD in future strategies, such as the impending strategy for children and families, and future reviews of educator qualifications. The Department of Education and Skills (DES) (2014, 15) recommended Aistear, The Early Childhood Curriculum Framework (NCCA 2009) and Síolta, The National Quality Framework for Early Childhood Education (CECDE 2006) be ‘mainstreamed in all early years settings’. This DES (2014) proposal was based on the ‘existing emphasis of ESD’ in the two frameworks, and therefore in the manner through which the curriculum is delivered to children. However, no guidelines or toolkits have been published, illustrating what ESD may entail or look like in the Irish ECEC context. Although research was undertaken to establish a baseline of ESD in primary and post-primary schools (DES 2015), the study was not extended to early education settings. If, as the *Strategy* (DES 2014) suggested, Ireland is to be at the forefront of ECEC-ESD implementation, it is imperative to understand the circumstances under which ESD is included in Irish ECEC practice.

Aistear the early childhood curriculum framework

Aistear (NCCA 2009), meaning ‘journey’ in the Irish language, supports a sociocultural view of learning and development influenced by Bronfenbrenner and Vygotskian scholarship (Carmel and Forster 2022). As a curriculum framework, Aistear promotes the building of enriching reciprocal relationships, partnership with parents, child-led playful learning, advocating for children’s hands-on experiences (Clerkin 2012). Created to support children’s learning from birth to six years, Aistear adopts a thematic approach: themes of well-being, identity and belonging, communicating, and, exploring and thinking, frame the dispositions, values and skills children draw on to achieve their full potential. Aistear does not offer a prescriptive curriculum or dictate specific content, instead, as a framework, it guides educators to create learning experiences which they consider most relevant to the children (O’Carroll 2015).

As the first Irish ECEC curriculum framework, its publication was heralded as a most important milestone for the sector (Daly and Forster 2009; NCCA 2009). Its impact on ECEC provision cannot be understated: it has ‘played a critical role in enhancing quality’ (French et al. 2022, 1). However, Aistear has not been without its critics, with implementation described as in a ‘slow, piecemeal fashion’ (Carmel and Forster 2022, 117).

Notwithstanding initiatives to support engagement with the framework,² the lack of a legislative imperative means implementation is dependent on individual ECEC settings (Fazal 2019) and the capacity of individual educators (Jackson 2019). Due to this weakness, French (2013, 2) describes Aistear as a ‘journey without a roadmap’. Its flexible and

discretionary content is considered an imperative of inclusivity (O'Carroll 2015) and lauded by Daly and Forster (2009) as practical for educators as it allows for individual interpretation. While advocating for flexible curricula, Jackson (2019) highlights the complexity of professional judgement required to facilitate it in the learning environment. Educators expressed this need for individual interpretation as a challenge to successful engagement with the framework (Fazal 2019) and called for professional development courses related to Aistear implementation to underpin current 'self-taught' approaches (Fazal 2019; Woods et al. 2021).

Aistear and education for sustainable development

Although governmental reports³ suggest issues relevant to ESD are integrated throughout Aistear, this current reliance on Aistear, which predated the *Strategy*, to guide ESD practice may be ill-conceived: as previously indicated, there is no statutory requirement to ensure Aistear is implemented in ECEC settings. Additionally, even when implemented, there may be considerable variability across settings in how Aistear is understood and addressed by educators (Fazal 2019; Woods, Mannion, and Garrity 2021).

The key determinant to successfully implement ESD is educator competence (Engdahl and Rabušicová 2011; Maidou, Plakitsi, and Polatoglou 2019; Nikiforidou, Lavin-Miles, and Luff 2020a; Pramling Samuelsson 2011; Quinn, Castéra, and Clément 2015; UNESCO 2005); however, as Urban et al. (2011) highlight, individual competencies must be understood as nested within a competent system. This multi-layered ECEC system ranges from educators, to setting teams, training institutions, support services, to monitoring, governance and policy-development actors, each contributing to the competency of the system. It is therefore discouraging that despite earlier calls (DES 2014) neither *First 5*, the State's recent strategy for babies, young children and their families, (Ireland 2018) nor, revised professional training criteria for ECEC educators at degree (DES 2019) and vocational levels (QQI 2019) refer to ESD/SDGs. Due to this current context, meaningful assimilation of ESD into ECEC practice remains aspirational and a lost opportunity.

At present, the National Council for Curriculum and Assessment is updating Aistear, with completion proposed for 2024. The recent literature review, supporting this updating (French et al. 2022) highlights the absence of ESD in the original framework. While this recognition reflects the urgency outlined through this article, curricular inclusion of ESD should only be a beginning point. Looking internationally, we see that despite explicit priority given to ESD in the Australian ECEC curriculum, without dedicated training, the conceptualisation and engagement with ESD varied considerably based on educators' perceptions (Quinn, Castéra, and Clément 2015). Research in Greece found educators lack understanding of the important interrelatedness of the sustainability pillars – economic, social and environmental (Maidou, Plakitsi, and Polatoglou 2019), indicating the development of curriculum guidance alone will not be sufficient to generate systemic change in ECEC practice. Research in Turkey (Öztürk and Olgan 2016) and Germany (Stössel, Baumann, and Wegner 2021) reveals educators feel untrained and ill-equipped to implement ESD in settings. These findings indicate a need for ESD within initial training (UNESCO 2017) as well as continuing professional development programmes (CPD)

(Maidou, Plakitsi, and Polatoglou 2019; Pramling Samuelsson 2011; Quinn, Castéra, and Clément 2015), both of which are lacking in Irish ECEC.

Educators' attitudes towards ESD

The perspectives, values and principles that inform educators' view of children and childhood have a profound influence on what they perceive as important for ECEC-ESD (Ärlemalm-Hagsér 2014; Castner 2020; Ruane et al. 2010) and what learning opportunities they believe are most suitable (Edwards 2009; Scoffham 2020). Without explicit training and curriculum guidance, educators have been found to show doubts about children's intellectual capabilities in this topic (Engdahl and Rabušicová 2011). Research into ECEC-ESD practices across 28 countries, found educators usually underestimated the competencies and abilities of young children (2–8 years) to comprehend concepts (Engdahl 2015). For example, the project revealed adults assumed environmental concepts such as greenhouse effect and ozone depletion were beyond young children's comprehension, an assumption proven unfounded by children's opinions and answers. Engdahl (2015) determined adults' prejudgements only served to inhibit ESD curriculum development.

Similarly, research from Pollock, Warren, and Andersen (2017) indicate educators mistakenly believe that just being exposed to nature is sufficient to achieve ESD, evidencing simplistic understandings of how pro-environmental and sustainability behaviours are instilled (Ärlemalm-Hagsér 2013). There are, however, a plethora of studies evidencing very young children are fully capable of thinking critically while expressing thoughts, ideas, solutions and ownership of the Earth's problems, when given the opportunity for active citizenship (Engdahl and Rabušicová 2011; Pramling Samuelsson 2011; Wolff, Skarstein, and Skarstein 2020; Yan and Fengfeng 2008).

Ruane et al. (2010) also found discourses regarding childhood innocence and the perception that very young children are both emotionally and cognitively too immature to deal with inequality, poverty, conflict, or global injustice, hindering the inclusion of global justice education in ECEC settings. Contrasting this discourse, Borg (2017; 2019) reveals children are aware of, and understand economic inequalities among, and between individuals, both locally and globally. Moreover, children believe they have ideas that can solve these issues (Engdahl 2015). Young children are also aware of negative, prejudicial and racist attitudes towards particular groups (Hawkins 2014). They are capable of identifying socially acceptable behaviours (Connolly 2007) and exploring and solving conflict (Duke 2020) or of modelling negative behaviours if these are left unchallenged (Hawkins 2014).

In order to inform and empower children to act and think more sustainably, this paper argues we must first inform and empower those who educate them. In Ireland, as shown, the relevant departments suggest issues pertinent to ESD are integrated throughout ECEC frameworks (DE 2022; DES 2014; Ireland 2021), however, based on this review, it should not be assumed that educators have the knowledge, skills or supports to incorporate ESD into their practice. Due to the critical urgency presented by the Anthropocene and in light of the dearth of Irish research in this area, a recent small-scale study, presented through this paper, reveals the views and practices of educators in Ireland, in relation to their understanding of ESD. As the prevailing ECEC practice guide, and

the only ECEC curriculum framework, this study engaged with Aistear as a vehicle to investigate ECEC-ESD practices.

Methodology

Research design

This research took a positivist approach, determining there are facts about educators' professional practice concerning ESD that need to be established and measured. The guiding research questions were to examine the circumstances under which ESD is included in ECEC practice, and to explore how the Aistear curriculum is currently guiding ESD in Irish ECEC settings. The study was underpinned by the following research objectives: To identify educators' knowledge of, and attitudes towards ESD; to identify how educators facilitate experiences of ESD in their professional practice; to identify if Aistear has a causal effect on how educators include these experiences of ESD in their practice.

In 2014, the Department of Education and Skills decided that the *Lifeskills Survey*, (DES 2015) completed by all primary and post-primary schools, would be utilised to collect baseline data regarding existing practices of ESD in Irish classrooms. This survey was never extended to ECEC settings and it is on this basis that the *Lifeskills Survey* questionnaire was adapted to gather data for this study. Adaption was completed with consideration of ESD developments in the intervening years; namely the establishment of the *2030 Agenda for Sustainable Development* and the publication of the *Education for Sustainable Development Goals: Learning Objectives*. Consequently, research was conducted using a self-completion questionnaire, designed to survey educators' knowledge of, and attitudes towards ESD and to identify how those educators facilitate ESD experiences in ECEC settings.

Reflecting the positivist approach, closed-questions were chosen with predetermined yes/no answers, facilitating numerical coding, and subsequent analysis. However, an additional optional comment box was included to complement three closed questions, allowing for clarity, insight or explanation to be added by participants. As closed-questions tend to represent the researchers' agenda, the use of comment boxes may amend the power balance between researcher and participant, reducing bias and optimising validity (O'Cathain and Thomas 2004). In keeping with the positivist paradigm O'Cathain and Thomas's (2004) four-step analysis, including reading data, devising coding frame, assigning codes, then analysing, was applied to the open-ended data to ensure validity. Concurrent to the data collection in the field, a process of content analysis of the text within Aistear was also undertaken (Mukherji and Albon 2015). Focusing on concepts and themes arising from the literature and policy review related to ESD, findings from the discourse analysis of Aistear contribute to the *Results* and *Discussion* sections of this paper.

Sample

This study was interested in the experiences of educators working within the universal Early Childhood Care and Education (ECCE) scheme, a state funded two-year pre-

school programme available to all children in Ireland (Egan and Garrity 2022). With nearly full uptake of qualifying children (Pobal 2022), the ECCE scheme was chosen as it offers the first steps in children's formal learning in Ireland, their own journey or 'aistear'.

With institutional ethical approval attained, the anonymous survey was circulated in early 2022, via various relevant social media networks. Educators working in the universal ECCE Scheme were invited to participate; a total of 83 responses were received. As 7283 educators were employed in this scheme nationally (Pobal 2022), this number does not allow generalisations from these findings; however, they do provide initial insights into the knowledge, experiences and views of educators concerning ESD and the SDG in the Irish ECEC context.

Results

Educators' knowledge of ESD

A significant majority of respondents (70%; $n = 58$) were unfamiliar with the UN SDGs, with just over half (57%; $n = 47$) unfamiliar with Ireland's *Strategy* (DES 2014). When questioned 'do you feel adequately prepared to support children in developing the knowledge, skills and dispositions to make sustainable choices?', only 56% ($n = 45$) of respondents felt they were. The remaining respondents were either 'unsure about their preparedness' (16%; $n = 13$) or felt 'inadequately prepared' (28%; $n = 23$).

Turkey and Greece share similar timelines in their ESD journey with Ireland: both countries endorsed the Mediterranean Strategy on ESD in 2014 (UNESCO 2020). Two years later, 37% of educators in Turkey still felt inadequately prepared to facilitate ESD (Öztürk and Olgan 2016), while 39% of educators in Greece described their knowledge of ESD as low or inadequate, five years post-strategy (Maidou, Plakitsi, and Polatoglou 2019). Eight years after the Irish *Strategy* commenced, a higher proportion of Irish educators (44%; $n = 36$) report being unsure or feel inadequately prepared to facilitate ESD in professional practice, indicating Ireland is lagging behind its neighbours. Participatory socio-cultural theories and approaches regarding ESD are evolving at a rapid pace, requiring continuous reconsiderations of strategies and practices (Læssøe 2010). Therefore, the importance of a proficient understanding of the purpose of the SDGs (Giangrande et al. 2019), of being informed of appropriate ESD teaching approaches (Maidou, Plakitsi, and Polatoglou 2019), cannot be understated. The unpreparedness felt by participants in this study may lie in the findings that the majority are unfamiliar with either Ireland's *Strategy* or international policy on the SDGs.

The links between Aistear and ESD

When asked 'Does Aistear influence how you provide learning experiences related to ESD?', 35% ($n = 28$) of participant-educators agreed. The remaining respondents either did not know (17%; $n = 14$) or did not believe (48%; $n = 38$) it does. This is a critical finding and a significant counterargument to the proposal that ESD is emphasised and embedded in Aistear, and that the implementation of Aistear will lead to the successful implementation of ESD in Irish ECEC settings (DES 2014; Ireland 2021).

There is an imperative that those teaching ESD have a proficient knowledge and understanding of the subject alongside the confidence to implement it (Dyment et al. 2013). However, the literature indicates educators face challenges in implementing Aistear in their settings (Fazal 2019; Woods, Mannion, and Garrity 2021); further, data evidences 65% ($n = 52$) of educators either do not know if, or do not believe that Aistear facilitates their engagement with the SDGs in practice. This paper argues, at present, the links between Aistear and ESD implementation may be tentative at best. Therefore, it welcomes calls by French et al. (2022, 101) to create ‘opportunities for further enhancement of sustainability in ECEC’ with a series of recommendations to integrate ESD within the updated framework. The urgency for these changes cannot be understated.

Aistear’s aims and learning goals

When questioned ‘Do you agree that ESD is embedded in Aistear?’, data reveals only 27% ($n = 22$) of educators in agreement. The remaining participants either did not know (30%; $n = 25$) or did not believe it was (43%; $n = 35$). Therefore, an anomaly exists within the data, with more respondents believing Aistear facilitates their practice in ESD (35%; $n = 28$) than believe ESD is embedded in the curriculum (27%; $n = 22$). Analysis of responses to the optional open-ended questions sheds light on this anomaly: of the respondents who believed Aistear facilitates their practice in ESD, and offered insights into why ($n = 18$), just under half ($n = 9$) of these referred to Aistear’s four themes as the means through which ESD is embedded in Aistear:

Anything we are teaching can be linked to Aistear. It is very clear

When we teach the children about sustainability, we can link it to the 4 themes of Aistear

Similarly, of the respondents, who agree ESD is embedded in Aistear and offered insights into why ($n = 15$), over half ($n = 9$) again referred to Aistear’s four themes:

When planning activities and learning I refer back to Aistear’s four themes often. It helps me to pinpoint the theme, aim and learning goal that the activity links to

Yes, because you want to link their learning experience to Aistear - exploring and thinking, identity and belonging theme - it makes it more meaningful

To ensure all the aims and themes are met

This is problematic as it appears educators are linking their practice *back* to the aims and learning goals of each theme as a means of determining ESD in their practice; however, as highlighted, the delivery of Aistear differs between individual educators (Fazal 2019; French 2013). International research presents a similar picture: Castner (2020) has found educators interpret and implement curricula in a variety of ways; similarly, educators interpret and implement ESD in a variety of ways (Vaealiki and Mackey 2008; Weldemariam et al. 2017). Although the literature shows Aistear themes provide children with opportunities to develop key dispositions and skills for sustainability (NCCA 2018), this only addresses the ‘how’ of ESD. Although an important start, the *Strategy* (DES 2014) also calls for attention to the ‘what’ and the ‘why’ of sustainability as imperatives to motivating and empowering children ‘to

become informed active citizens who take action for a more sustainable future' (DES 2014, 3).

Taking action in ESD

Implementing ESD successfully, requires active engagement; therefore, participants were asked 'Do you encourage children to speak up for, or get involved in taking actions for change?'. The majority of respondents (68%; $n = 55$) agreed. This fell considerably when educators were asked if children get involved in issues in their community, with 26% ($n = 21$) agreeing, or in global issues, with just 12% ($n = 10$) agreeing children have opportunities to take action. This study found 24% ($n = 19$) of respondents did not encourage or facilitate opportunities for children to take any action in these areas.

Children develop as they participate in the activities of their cultural communities (Rogoff 2003), something fundamental to ESD. Despite this, the data shows children's agency, in most cases, is limited to the ECEC setting, and while this is important, it is also insufficient. This resonates with Årlemalm-Hagsér (2014) and Årlemalm-Hagsér and Davis (2014) who show Swedish and Australian early years settings understand children's agency as taking part 'in activities', which the studies found failed to recognise that within ESD, children can take part 'in change'. And not only change, as Ryzhova (2016, 66) argues, through participatory scaffolding, young children have agency to 'put forth hypotheses, test them in practice, independently search for information, and communicate with people of different generations'.

Present day citizenship

When asked if they believed early years children should have learning experiences related to ESD at this age 73% ($n = 59$) of respondents agreed that they should. The remaining respondents were either unsure (15%; $n = 12$) or thought early years children should not (12%; $n = 10$). Respondents were given the opportunity to offer explanations for their answers. Of those who did ($n = 43$), 40% ($n = 17$) stated it is important because children are future citizens or the next generation.

The notion of the 'fully fledged' citizens found in ESD literature runs contrary to that found in the opinions of these participants. Children were described as 'the future' or 'the next generation' by respondents, who claimed ESD should be included in their education because they are 'the leaders of the future' or because they need to be prepared for 'their future involvement in important issues'. This frames children within the fate of what Qvortrup (2004) describes as waiting for adulthood, for competence or for usefulness. In the case of this research, could it be that children are waiting for citizenship? ESD recognises children as important actors in the here-and-now (Årlemalm-Hagsér 2014), and while their future adult lives will be impacted by the anthropocene, so too is their present.

Discussion

Key findings from this study can be grouped under two areas: (1) Educators' understanding of and engagement with ESD, and the manner by which Aistear supports this; (2)

viewed through a SDG lens, how children's agency and citizenship is constructed in practice and across the framework, as revealed through this research. This section will address these two areas, identifying emerging knowledge and recommendations.

Understanding and engagement with ESD

This paper suggests ESD activities in Irish ECEC settings are being implemented in an ad hoc manner, with little guidance of what actually represents ESD. Respondents' feedback indicates that where educators are implementing sustainability activities, they are retrospectively fitting them back into the aims and goals of each theme, rather than using the elements of the framework as a foundation to create and plan ESD activities or to inform and guide child-led emergent interests in this area. Is it possible the flexible and discretionary curriculum framework (O'Carroll 2015) means that in practice, 'anything we are teaching can be linked to Aistear' as one respondent remarked? And if this is the case, is this 'anything' largely at the discretion of the educator, based on the amalgam of their knowledge(s), practices and values (Urban, Robson, and Scacchi 2017)?

Research cited earlier reveals educators find Aistear's need for individual interpretation challenging to the successful delivery of an ECEC curriculum (Fazal 2019). This is a troublesome discourse. Flexibility is a central tenet within ECEC curricula as it offers greater opportunities for holistic and balanced approaches to learning. It is increasingly recognised that a more flexible and adaptable approach can create possibilities for deeper learning by allowing children to co-construct and connect knowledge across differing contexts (Jackson 2019) while embracing 'children's different ways of being, knowing, and doing' (Macartney 2012, in French et al. 2022, 136). However, the OECD (2015) has found overly flexible curricula inevitably create difficulties when judgments are needed concerning children's achievements or progress, the complexity of which is often overlooked (Jackson 2019). In contrast, a tightly-prescribed curriculum can disempower and restrict children's dominion over their learning (Fox et al. 2020) undermining child-agency and negating their educational rights.

The successful implementation of a flexible curriculum, such as Aistear, relies on educators having complete clarity regarding what is expected of them and where the perimeters of their decision-making exist (Jackson 2019). Therefore, with an update of Aistear underway, this research strongly recommends a comprehensive programme of CPD as a key component of the implementation of the revised framework.

A competent system requires coherent, coordinated and accessible approaches to professional preparation and CPD (Urban et al. 2011). Ongoing support to engage with and embed Aistear in practice, including understandings of ESD within the new framework, must be underpinned by individual and collective reflection on practice along with opportunities to develop reciprocal professional relationships across the ECEC system (Urban et al. 2011; Urban, Robson, and Scacchi 2017). The responsibility must not be placed solely on the shoulders of educators, rather, it must be understood as a critical imperative for the Irish ECEC system, as a whole.

We argue embedding ESD within Irish ECEC requires a systemic approach. As previously noted, neither *First 5*, nor the recent guidelines for the initial training of educators address ESD/SDGs. Further, the *Education for Sustainable Development Advisory Group* that coordinates activities and learning across twenty-nine sectors (DE 2021)

includes no representation from ECEC service providers or educators. In addition, of the twenty-nine reference papers/reports reviewed to inform the initial 2014 *Strategy*, only one relates specifically to ECEC (DES 2014). The revised *Strategy* (Ireland 2022) fails to reference ECEC related research; further, the aligned funding call to support implementation of ESD actions only applies to primary/post primary schools (DE 2022). This is a disappointing reflection on the attention paid to ECEC in the formation of this policy. Despite the 2014 *Strategy*'s rhetoric of Irish ECEC's potential to be global ESD leaders, missed opportunities to realise this goal are evident.

Agency and citizenship

Within ESD, the child as a rights holder, has the agency to contribute to society by determining the direction of their learning alongside their educator (Pramling Samuelsson and Kaga 2008). Yet contradictions to this notion are found in this data: while the majority of respondents believe ESD should be facilitated in ECEC, children's ability to enact citizenship and take action appears limited. This paper argues the manner in which educators construct the 'competent child' is inadequate without recognising children's agency. While the Aistear framework advocates for active learning which 'involves children learning by doing things' (NCCA 2009, 10), it subsequently personifies the child's voice asking 'let me explore', 'give me opportunities' and 'support me' (NCCA 2009). This seems to suggest a passive child: one who needs help to do things rather than one who can help to get things done; one who is influenced rather than one who is influential. It also appears contrary to the sociocultural view of participation in which children and adults make mistakes and take risks as they engage in collaborative learning and sustained shared thinking (Sylva et al. 2004).

The unrealised child-agency, as evidenced in the data, and in Aistear, contradicts the construction of the child in ESD as one 'who is able to alter the world through participation as an active and fully fledged citizen with a great deal to invest in their future' (Weldemariam et al. 2017, 345). This position is supported by the French et al. (2022) literature review, which notes the absence of 'agency' across the themes and principles of Aistear, calling for 'more explicit' reference to agency, as well as the complementary concepts of children's rights and influence, in the revised framework.

Contrasting with survey respondents, Aistear 'celebrates early childhood as a time of being' (NCCA 2009, 6). The concept of active citizenship is a key principle of early learning and development, as Aistear states, 'children are citizens with rights and responsibilities' (NCCA 2009, 8). Accordingly, a disconnect exists between respondents' practice and curriculum guidance. The language guiding how children's 'being' occurs, in Aistear, may influence this disconnection.

A sociocultural perspective positions children's development amidst relationships influenced by other people's beliefs, values, experiences and knowledge (Edwards 2009). Children are dependent on what learning objectives educators perceive as important (Ärlemalm-Hagsér 2014; Scoffham 2020), and how they enact their curriculum (Castner 2020). By looking at the words connected to citizenship and democracy in Aistear, and understanding these words as the construct through which participation could be perceived by educators, we are presented with an additional view of the child. Educators are reminded to 'model' and 'allow' children to 'experience democracy', to 'involve' or

'help' children's decision-making, to 'explore' and 'promote' children's citizenship (NCCA 2009). While not seeking to undermine the importance of what is being asked of educators here, this paper does suggest this language again renders a somewhat passive or reliant view of the child, rather the one which Årlemalm-Hagsér and Davis (2014) assert, already has the competence to embrace an activist education.

Language matters: both the choice and use of words impact how people interpret and interact with the messages being relayed (Mooney and Evans 2019). Regardless of what is prescribed in the language of the framework, its meaning is determined and shaped by the manner in which it is expressed, and then actualised, by educators. Ultimately it is they who facilitate curriculum in ECEC settings, including, or not, ESD. This paper stresses the critical importance of reflection on both the latent and semantic meaning and contexts of language used to describe the child within the revised Aistear framework. The strengthening of the view of the child with agency, as a fully-fledged citizen in the here and now, should inform the systems-wide approach to embedding ESD within ECEC, as part of its implementation.

Summary

Tackling issues presented through the SDGs requires a collective response, as called for in Ireland's 2014 and new 2022 *Strategy*. ECEC can be the starting point to challenge existing ways of doing and being, to promote and model new approaches. In order to achieve this, a greater understanding of the *knowledges, skills and values* (Urban, Robson, and Scacchi 2017) of educators related to the SDGs is urgently needed. The research reported herein merely provides a first glimpse.

While small in scale, and limited in its generalisation to the wider workforce, this study reveals the majority of participant-educators are either unsure or do not believe Aistear facilitates their practice in ESD, despite the national *Strategy* claiming it does. Engagement with ESD in ECEC should prepare our youngest learners for global citizenship where concepts of fairness, justice and equality are privileged, and where the limits of the natural environment are respected. Shortcomings in ECEC-ESD understanding have emerged from this study and warrant further urgent investigation. As citizens, our children have a right to be informed and empowered to take action today, for their present and for their future. This right is currently unrealised.

When the findings of this study are viewed through a 'systems' lens, the lack of training in the area of ESD, the literature showing the varied interpretations of curriculum, sustainability, and childhood, it is highly probable that there are large discrepancies in ESD practice in Irish ECEC settings, if it is present at all. While this research has drawn attention to the competencies and practices of individual educators, these do not exist within a vacuum. On the contrary, they are grounded within a 'system' which requires coordination, communication, interaction and accountability, between all layers and structures, in order to achieve competency (Urban et al. 2011). What expectations can we reasonably have of individual educators, when the wider system is failing to acknowledge the imperatives highlighted by SDGs/ESD in ECEC?

If the world lived like Ireland in 2023, Earth Overshoot Day would have fallen on April 21st (overshootday.org 2023). For the period that follows, the people of Ireland, including our children, are living in an ecological overdraft. This is a damning

indictment of the ecological, social and economic behaviours of the people of Ireland, at this critical time in our existence. Young children are not future citizens, future consumers or future problem-solvers. They are the present. They are capable of creating change. However, in order for children to act and think more sustainably, we must create a competent system, one that informs, equips and empowers those who educate them.

Notes

1. Since the completion of this research, the Irish state launched the '2nd National Strategy on Education for Sustainable Development – ESD to 2030' (DE 2022).
2. Initiatives include *Aistear in Action*, *Aistear Síolta Practice Guide*, *National Síolta Aistear Initiative* (see Carmel and Forster 2022); refer as well to Better Start mentoring, and early years inspection processes (see Duignan and McDonnell 2022; Hayes et al. 2022).
3. Department of Education (2022) *ESD to 2030 – Call for funding – September 2022*. Ireland (2022) *Ireland's Education for Sustainable Development Strategy to 2030 Consultation Paper*. Dublin: Government of Ireland. Department of Education and Skills/DES (2014) 'Education for Sustainability' *The National Strategy on Education for Sustainable Development in Ireland*. Dublin: Department of Education and Skills.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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References

- Ärlemalm-Hagsér, Eva. 2013. "A Prescription for Developing Environmental Awareness in Preschool." *Centre for Educational Policy Studies Journal* 3 (1): 25–44. <https://doi.org/10.26529/cepsj.249>. <https://files.eric.ed.gov/fulltext/EJ1129478.pdf>.
- Ärlemalm-Hagsér, Eva. 2014. "Participation as "Taking Part In" Education for Sustainability in Swedish Preschools." *Global Studies of Childhood* 4 (2): 101–114. <https://doi.org/10.2304/gsch.2014.4.2.101>.
- Ärlemalm-Hagsér, Eva, and Julia Davis. 2014. "Examining the Rhetoric: A Comparison of how Sustainability and Young Children's Participation and Agency are Framed in Australian and Swedish Early Childhood Education Curricula." *Contemporary Issues in Early Childhood* 15 (3): 231–244. <https://doi.org/10.2304/ciec.2014.15.3.231>.

- Bahtić, Klara, and Adrijana Višnjić Jevtić. 2020. "Young Children's Conceptions of Sustainability in Croatia." *International Journal of Early Childhood* 52 (2):195–211. <https://doi.org/10.1007/s13158-020-00266-4>.
- Borg, Farhana. 2017. "Kids, Cash and Sustainability: Economic Knowledge and Behaviors among Preschool Children." *Cogent Education* 4 (1): 1–14. <https://doi.org/10.1080/2331186X.2017.1349562>.
- Borg, Farhana. 2019. "Economic (in)Equality and Sustainability: Preschool Children's Views of the Economic Situation of Other Children in the World." *Early Child Development and Care* 189 (8): 1256–1270. <https://doi.org/10.1080/03004430.2017.1372758>.
- Brundtland, Gro Harlem. 1987. *The Brundtland Report: 'Our Common Future'*. Oslo: World Commission on Environment and Development. <https://doi.org/10.1080/07488008808408783>.
- Burnett, Nicholas. 2008. "Preface." In *The Contribution of Early Childhood Education to a Sustainable Society*, edited by Ingrid Pramling Samuelsson, and Yoshie Kaga, 3. Paris: UNESCO.
- Carmel, Brennan, and Arlene Forster. 2022. "Early Childhood Education and Care Curriculum Provision and the Development of Aistear." In *Early Childhood Education and Care in Ireland: Charting a Century of Developments (1921–2021)*, edited by Noirin Hayes, and Thomas Walsh, 101–124. Oxford: Peter Lang.
- Castner, Daniel J. 2020. "Translating the Implementation Gap: Three Versions of Early Childhood Curriculum Leadership." *Early Childhood Education Journal* 48 (4): 429–440. <https://doi.org/10.1007/s10643-019-01006-7>.
- CECDE. 2006. *Siolta, The National Quality Framework for Early Childhood Education*. Dublin: The Centre for Early Childhood Development and Education. https://siolta.ie/media/pdfs/final_handbook.pdf
- Clerkin, Frances. 2012. "Unlocking Learning– Evidential Factors Motivating Young Children's Learning. A Study of a Sample of 4–6 Year Olds in Irish Primary School Settings." *An Leabhbh Óg* 6 (1): 67–82. <https://omepireland.ie/wp-content/uploads/2019/07/An-Leabhbh-Og-Volume-6-2012.pdf>
- Connolly, Paul. 2007. *Fair Play – Talking with Children about Prejudice & Discrimination*. Belfast: Barnardo's Northern Ireland. <https://resource-centre-uploads.s3.amazonaws.com/uploads/1765.pdf>.
- Daly, Mary, and Arlene Forster. 2009. "The Story of the Framework for Early Learning: Partnership in Action." *An Leabhbh Óg* 3 (1): 55–72. <https://omepireland.ie/wp-content/uploads/2019/07/An-Leabhbh-Og-Volume-3-2009.pdf>
- DE and DFHERIS. 2021. *Ireland 's Education for Sustainable Development Strategy to 2030 Consultation Paper*. Dublin: Government of Ireland. <https://www.gov.ie/pdf/?file=https://assets.gov.ie/133067/647e4c20-78e0-49b0-948e-29fb9fa9ac9c.pdf#page=null>.
- DE/Department of Education. 2022. *ESD to 2030 – Call for Funding – September 2022*. <https://assets.gov.ie/233637/fdf69134-29e4-4ade-a19e-26ac5a30279a.pdf>.
- Derman-Sparks, Louise, and Patricia Ramsey. 2005. "What if all the Children in my Class are White?" *Young Children* 60 (4): 20–24,26–27. <https://www.proquest.com/docview/197684616>
- DES. 2014. *'Education for Sustainability' The National Strategy on Education for Sustainable Development in Ireland*. Dublin: Department of Education and Skills. <https://assets.gov.ie/24587/c82be92cea214b0789ce668c2c082c57.pdf>.
- DES. 2015. *Lifeskills Education Survey 2015 – Primary Level*. Dublin: Department of Education and Skills. <https://assets.gov.ie/24982/c07298ae245a4bb59f96f07da7e0b640.pdf>.
- DES. 2019. *Professional Award Criteria and Guidelines for Initial Professional Education (Level 7 and Level 8) Degree Programmes for the Early Learning and Care (ELC) Sector in Ireland*. Dublin: Department of Education and Skills. <https://assets.gov.ie/30316/784a2158d8094bb7bab40f2064358221.pdf>
- Didham, Robert J, Paul Ofei-Manu, Alexander Leicht, Julia Heiss, and Won Jung Byun. 2018. "Advancing Policy to Achieve Quality Education for Sustainable Development." In *Issues and Trends in Education for Sustainable Development*, edited by Alexander Leicht, Julia Heiss and Won Jung Byun, 87–110. Paris: UNESCO.

- Diffenbaugh, Noah, and Marshall Burke. 2019. "Global Warming has Increased Global Economic Inequality." *Proceedings of the National Academy of Sciences* 116 (20): 9808–9813. <https://doi.org/10.1073/pnas.1816020116>.
- Duignan and McDonnell. 2022. "An Overview of the Development of Government Regulations and Inspection in the Early Childhood Education and Care Sector in Ireland, 1921–2021." In *Early Childhood Education and Care in Ireland: Charting a Century of Developments (1921–2021)*, edited by Noirin Hayes, and Thomas Walsh, 203–228. Oxford: Peter Lang.
- Duke, R. 2020. "Restorative Practice Modelling Key Skills of Peace and Global Citizenship." In *Teacher Education for Sustainable Development and Global Citizenship*, edited by Philip Bamber, 66–73. London: Routledge.
- Dymont, Janet, Julie Davis, Diane Nailon, Sherridan Emery, Seyum Getenet, Nadine McCrea, and Allen Hill. 2013. "The Impact of Professional Development on Early Childhood Educators' Confidence, Understanding and Knowledge of Education for Sustainability." *Environmental Education Research* 20 (5): 660–679. <https://doi.org/10.1080/13504622.2013.833591>.
- Edwards, S. 2009. *Early Childhood Education and Care: A Sociocultural Approach*. New South Wales: Pademelon Press.
- Egan, A., and Shelia Garrity. 2022. "The Legislative and Regulatory Landscape for Early Childhood Education and Care in Ireland." In *Early Childhood Education and Care in Ireland: Charting a Century of Developments (1921–2021)*, edited by Noirin Hayes, and Thomas Walsh, 177–202. Oxford: Peter Lang.
- Engdahl, Ingrid. 2015. "Early Childhood Education for Sustainability: The OMEP World Project." *International Journal of Early Childhood* 47 (3):347–366. <https://doi.org/10.1007/s13158-015-0149-6>.
- Engdahl, Ingrid, and Milada Rabušicová. 2011. "Children's Voices About the State of the Earth." *International Journal of Early Childhood* 43 (2): 153–176. <https://doi.org/10.1007/s13158-011-0031-0>.
- Fazal, Marziya. 2019. "Aistear: A Journey Under Construction and Every Voice Matters." *Student Teacher Educational Research e-Journal* 2:5–10. http://www.ster.ie/uploads/2/9/9/4/29948859/aistear_-_a_journey_under_construction_and_every_voice_matters._marziya_fazal._vol_2_2019_.pdf
- Foley, Helen, Joe Bogue, and Stephen Onakuse. 2016. "New Conceptual Framework for Sustainability." *Irish Studies in International Affairs* 27:145–163. <https://doi.org/10.3318/isia.2016.27.11>.
- Fox, Kate, Jonathan Clarke, John-Mark Winstanley, and Jane Warwick. 2020. "Designing a Curriculum with Freedom and Flexibility at its Heart." In *Rethinking Spaces for Learning*, edited by James Biddulph, and Julia Flutter, 43–63. New York: Routledge.
- French, Geraldine. 2013. "Aistear: A Journey Without a Road Map." *Childlinks* 2:2–8. <http://doras.dcu.ie/24301/1/Geraldine%20French%20-%202013%20Issue%202%20The%20Implementation%20of%20Aistear.pdf>
- French, Geraldine, Grainne McKenna, Fiona Giblin, Tara Concannon-Gibney, Thérèse Farrell, Cora Gillic, Clare Halligan, et al. 2022. *Literature Review to Support the Updating of Aistear, the Early Childhood Curriculum Framework*. Dublin: Dublin City University. <https://ncca.ie/media/5860/literature-review-to-support-the-updating-of-aistear-the-early-childhood-curriculum-framework.pdf>
- Giangrande, Naresh, Rehema White, May East, Ross Jackson, Tim Clarke, Michel Saloff Coste, and Gil Penha-Lopes. 2019. "A Competency Framework to Assess and Activate Education for Sustainable Development: Addressing the UN Sustainable Development Goals 4.7 Challenge." *Sustainability* 11 (10): 1–16. <https://doi.org/10.3390/su1102832>.
- Hawkins, Karen. 2014. "Teaching for Social Justice, Social Responsibility and Social Inclusion: A Respectful Pedagogy for Twenty-First Century Early Childhood Education." *European Early Childhood Education Research Journal* 22 (5): 723–738. <https://doi.org/10.1080/1350293X.2014.969085>.

- Ireland, Government of. 2018. *First 5: A Whole-of-Government Strategy for babies, Young Children and their Families 2019-2028*. <https://www.gov.ie/pdf/?file=https://assets.gov.ie/31184/62acc54f4bdf4405b74e53a4afb8e71b.pdf#page=null>
- Ireland, Government of. 2021. *Ireland's Education for Sustainable Development Strategy to 2030 Consultation Paper*. Dublin: Government of Ireland.
- Ireland, Government of. 2022. *ESD to 2030: Second National Strategy on Education for Sustainable Development*. <https://www.gov.ie/en/publication/8c8bb-esd-to-2030-second-national-strategy-on-education-for-sustainable-development/>.
- Jackson, Jen. 2019. "Balancing Prescriptiveness and Flexibility in the School Curriculum." *New South Wales Curriculum Review* 1:1–24. <https://research.acer.edu.au/cgi/viewcontent.cgi?article=1001&context=nswcurriculumreview>
- Laurance, William. 2019. "The Anthropocene." *Current Biology* 29 (19): 953–954. <https://doi.org/10.1016/j.cub.2019.07.055>.
- Læssøe, Jeppe. 2010. "Education for Sustainable Development, Participation and Socio-Cultural Change." *Environmental Education Research* 16 (1): 39–57. <https://doi.org/10.1080/13504620903504016>.
- Maidou, Anthoula, Katerina Plakitsi, and Hariton M. Polatoglou. 2019. "Knowledge, Perceptions and Attitudes on Education for Sustainable Development of Pre-Service Early Childhood Teachers in Greece." *World Journal of Education* 9 (5): 1–15. <https://doi.org/10.5430/wje.v9n5p1>.
- Mooney, Annabelle, and Betsy Evans. 2019. *Language, Society and Power an Introduction*. New York: Routledge. https://www.academia.edu/74826900/Language_society_and_power_an_introduction
- Mukherji, P., and D. Albon. 2015. *Research Methods in Early Childhood: An Introductory Guide*. 2nd ed. London: Sage.
- NCCA. 2009. *Aistear: The Early Childhood Curriculum Framework*. Dublin: National Council for Curriculum and Assessment. https://curriculumonline.ie/getmedia/484bcc30-28cf-4b24-90c8-502a868bb53a/Aistear-Principles-and-Themes_EN.pdf.
- NCCA. 2018. *Education for Sustainable Development: A Study of Opportunities and Linkages in the Primary and Post-Primary Curriculum*. Dublin: National Council for Curriculum and Assessment. https://ncca.ie/media/3573/esdreport_final_june2018.pdf
- Nikiforidou, Zoi, Zoe Lavin-Miles, and Paulette Luff. 2020a. "Bat Conservation in the Foundation Stage – An Early Start to Education for Sustainability." In *Teacher Education for Sustainable Development and Global Citizenship*, edited by Philip Bamber, 113–121. London: Routledge.
- Nikiforidou, Zoi, Zoe Lavin-Miles, and Paulette Luff. 2020b. "Rating Education for Sustainable Development in the Early Years: A Necessity or a Challenge?" In *Teacher Education for Sustainable Development and Global Citizenship*, edited by Philip Bamber, 169–176. London: Routledge.
- O'Carrol, Gerard. 2015. "Inclusive Practice – A Route to Sustainable Development." *An Leabhbh Óg* 9 (1): 67–76. <https://omepireland.ie/wp-content/uploads/2019/07/An-Leanbh-Og-Volume-9-2015.pdf>
- O'Cathain, Alicia, and Kate Thomas. 2004. "'Any Other Comments?' Open Questions on Questionnaires – A Bane or a Bonus to Research?" *BMC Medical Research Methodology* 4 (1): 1–7. <https://doi.org/10.1186/1471-2288-4-1>.
- OECD. 2015. *Improving Schools in Scotland: An OECD Perspective*. Scotland: OECD. <https://www.oecd.org/education/school/Improving-Schools-in-Scotland-An-OECD-Perspective.pdf>
- overshootday.org. 2023. "Earth Overshoot Day." Accessed July 22 2023. <https://www.overshootday.org/>.
- Oxfam International. 2021. "5 Shocking Facts about Extreme Global Inequality and How to Even it up." *Oxfam International*. <https://www.oxfam.org/en/5-shocking-facts-about-extreme-global-inequality-and-how-even-it>.
- Öztürk, Denis Kahrman, and Refika Olgan. 2016. "Analysis of Pre-School Teachers' Views on the Importance of Education for Sustainable Development by Means of Location and Household

- Type in Childhood.” *International Journal of Environmental Science and Education* 11 (13): 6303–6313. <https://eric.ed.gov/?id=EJ1115534>
- Pobal. 2022. *Annual Early Years Sector Profile Report 2020/2021*. Accessed December 15, 2022. <https://www.pobal.ie/annual-early-years-sector-profile-report-2020-2021/>.
- Pollock, Krista, Jane Warren, and Peter Andersen. 2017. “Inspiring Environmentally Responsible Preschool Children Through the Implementation of the National Quality Framework: Uncovering What Lies Between Theory and Practice.” *Australasian Journal of Early Childhood* 42 (2): 12–19. <https://doi.org/10.23965/AJEC.42.2.02>.
- Pramling Samuelsson, Ingrid. 2011. “Why We Should Begin Early with ESD: The Role of Early Childhood Education.” *International Journal of Early Childhood* 43 (2): 103–118. <https://doi.org/10.1007/s13158-011-0034-x>.
- Pramling Samuelsson, Ingrid, and Yoshie Kaga. 2008. “Introduction.” In *The Contribution of Early Childhood Education to a Sustainable Society*, edited by Ingrid Pramling Samuelsson, and Yoshie Kaga, 8–17. Paris: UNESCO.
- Pressoir, Eveline. 2008. “Preconditions for Young Children’s Learning and Practice for Sustainable Development.” In *The Contribution of Early Childhood Education to a Sustainable Society*, edited by Ingrid Pramling Samuelsson, and Yoshie Kaga, 57–60. Paris: UNESCO.
- QQ1/Quality and Qualifications Ireland. 2019. *Professional Award-type Descriptors at NFQ Levels 5 to 8: Annotated for QQI Early Learning and Care (ELC) Awards*. <https://www.qqi.ie/news/Professional-Award-type-Descriptors-for-the-National-Framework-of-Qualifications>.
- Quinn, Frances, J  r  my Cast  ra, and Pierre Cl  ment. 2015. “Teachers’ Conceptions of the Environment: Anthropocentrism, non-Anthropocentrism, Anthropomorphism and the Place of Nature.” *Environmental Education Research* 22 (6): 893–917. <https://doi.org/10.1080/13504622.2015.1076767>.
- Qvortrup, Jens. 2004. “Editorial: The Waiting Child.” *Childhood* 11 (3): 267–273. <https://doi.org/10.1177/0907568204044884>. <https://journals.sagepub.com/doi/pdf/10.1177/0907568204044884>
- Rogoff, Barbara. 2003. *The Cultural Nature of Human Development*. Oxford: University Press.
- Ruane, Brian, AnneMarie Kavanagh, Fionnuala Waldron, Sheila Dillon, Maria Casey, Catherine Maunsell, and Anita Prunty. 2010. *A Report by the Centre for Human Rights and Citizenship Education, St. Patrick’s College, Drumcondra and Tr  caire*. Dublin: Tr  caire.
- Ryzhova, Natalia. 2016. “Priority Sustainable Development Challenges: How Kindergartens Can Help to Face Them.” *An Leanbh   g* 10:51–67. <https://omepireland.ie/wp-content/uploads/2019/07/An-Leanbh-Og-Volume-10-2016.pdf#page=51>.
- Scoffham, Stephen. 2020. “In Search of Core Values.” In *Teacher Education for Sustainable Development and Global Citizenship*, edited by Philip Bamber, 23–31. London: Routledge.
- Siraj-Blatchford, John. 2009. “Editorial: Education for Sustainable Development in Early Childhood.” *International Journal of Early Childhood* 41 (2): 9–22. <https://doi.org/10.1007/BF03168875>. <https://link.springer.com/article/10.1007/BF03168875>
- Steffen, Will,   sa Persson, Lisa Deutsch, Jan Zalasiewicz, Mark Williams, Katherine Richardson, Carole Crumley, et al. 2011. “The Anthropocene: From Global Change to Planetary Stewardship.” *AMBIO* 40 (7): 739–761. <https://doi.org/10.1007/s13280-011-0185-x>.
- St  ssel, Julia, Rebecca Baumann, and Elisabeth Wegner. 2021. “Predictors of Student Teachers’ ESD Implementation Intention and Their Implications for Improving Teacher Education.” *Sustainability* 13 (16):9027. <https://doi.org/10.3390/su13169027>.
- Sylva, kathy, Edward Melhuish, Pam Sammons, Iram Siraj-Blatchford, and Brenda Taggart. 2004. *The Effective Provision of Pre-School Education (EPPE) Project: Technical Paper 12 – The Final Report: Effective Pre-School Education*. London: Department for Education and Skills/Institute of Education, University of London
- Trischler, Helmuth. 2016. “The Anthropocene.” *NTM Journal of the History of Science, Technology and Medicine* 24 (3): 309–335. <https://doi.org/10.1007/s00048-016-0146-3>.
- UN. 2021. “The 17 Goals, United Nations department of economic and social Affairs.” United Nations. Accessed November 23, 2022. <https://sdgs.un.org/goals>.

- UNESCO. 2005. "Guidelines and Recommendations for Reorienting Teacher Education to Address Sustainability." *Education for Sustainable Development in Action*. Paris: UNESCO. <https://sdgs.un.org/sites/default/files/publications/1682Shaping%20the%20future%20we%20want.pdf>
- UNESCO. 2014. *Roadmap for Implementing the Global Action Programme on Education for Sustainable Development*. Paris: UNESCO. <https://unesdoc.unesco.org/ark:/48223/pf0000230514>
- UNESCO. 2016. *Education 2030 - Incheon Declaration Framework for Action for the Implementation of Sustainable Development Goal 4*. Incheon: UNESCO. <http://unesdoc.unesco.org/images/0024/002456/245656E.pdf>
- UNESCO. 2017. *Education for Sustainable Development Goals Learning Objectives*. Paris, France: UNESCO. https://www.unesco.de/sites/default/files/2018-08/unesco_education_for_sustainable_development_goals.pdf
- UNESCO. 2020. *Mapping the Mainstreaming of Education for Sustainable Development Across SDG4.7: A Comparative Analysis of the Mainstreaming of ESD in Cyprus, Greece, Malta and Turkey*. Venice: UNESCO. <https://unesdoc.unesco.org/ark:/48223/pf0000374024>
- UNESCO. 2021. *Berlin Declaration on Education for Sustainable Development*. Berlin: UNESCO. <https://en.unesco.org/events/ESDfor2030>
- UNICEF. 2003. *The State of the World's Children 2003: Child Participation*. New York: UNICEF. <https://www.unicef.org/media/84791/file/SOWC-2003.pdf>
- Urban, Mathias, Sue Robson, and Valeria Scacchi. 2017. *Review of Occupational Role Profiles in Ireland in Early Childhood Education and Care*. London: University of Roehampton. <https://assets.gov.ie/24908/d9cb10bb2d9141f5b5288722ea13194c.pdf>
- Urban, Mathias, M. Vandenbroeck, J. Peeters, A. Lazzari, and K. Van Laere. 2011. *CoRe. Competence Requirements in Early Childhood Education and Care*. London and Ghent: European Commission, Directorate-General for Education and Culture. <https://op.europa.eu/en/publication-detail/-/publication/fc7e05f4-30b9-480a-82a7-8afd99b7a723/language-en>
- Vaealiki, Sue, and Glynne Mackey. 2008. "Ripples of Action: Strengthening Environmental Competency." *Early Childhood Folio* 12:7–11. <https://doi.org/10.18296/ecf.0193>. https://www.nzcer.org.nz/system/files/journals/early-childhood-folio/downloads/ECFolio_12_2008_007.pdf
- Weldemariam, Kassahun, Diane Boyd, Nicky Hirst, Barbara Maria Sageidet, Jamison Browder, Leanne Grogan, and Fran Hughes. 2017. "A Critical Analysis of Concepts Associated with Sustainability in Early Childhood Curriculum Frameworks Across Five National Contexts." *International Journal of Early Childhood* 49 (3): 333–351. <https://doi.org/10.1007/s13158-017-0202-8>
- Wolff, Lili Ann, Tuula H. Skarstein, and Frode Skarstein. 2020. "The Mission of Early Childhood Education in the Anthropocene." *Education Sciences* 10 (2): 27. <https://doi.org/10.3390/EDUCSCI10020027>. Multidisciplinary Digital Publishing Institute.
- Woods, Adell, Arlene Mannion, and Sheila Garrity. 2021. "Implementing Aistear – the Early Childhood Curriculum Framework Across Varied Settings: Experiences of Early Years Educators and Infant Primary School Teachers in the Irish Context." *Child Care in Practice* 28 (4): 1–20. <https://doi.org/10.1080/13575279.2021.1920367>
- WWF/Worldwide Fund for Nature. 2020. *Living Planet Report 2020 - Bending the Curve of Biodiversity Loss*. Gland, Switzerland: The Worldwide Fund for Nature.
- Yan, Liu, and Liu Fengfeng. 2008. "Building a Harmonious Society and ECE for Sustainable Development." In *The Contribution of Early Childhood Education to a Sustainable Society*, edited by Ingrid Pramling Samuelsson, and Yoshie Kaga, 43–52. Paris: UNESCO.