

Connecting the UNESCO Sustainable Development Goals with Australian Early Childhood Education Policy to Transform Practice

Lisa J. Sonter

Sharon Kemp

Queensland Early Childhood Sustainability Network, Australia

Submitted January 20, 2021; accepted October 25, 2021

ABSTRACT

The Brundtland (1987) report challenged the perception that the environment was somehow separate from humans and the more recent *Sustainable Development Goals* (SDGs) (UNESCO, 2015) have emphasised the pressing need for sustainable development to meet the needs of current and future generations. As progress towards meeting the SDGs by 2030 was not advancing at the scale required globally (UNESCO, 2020), a ‘Decade of Action’ was declared in 2019 by the United Nations. Clearly, transformational approaches need to be integrated in all corners of education for the ripples to become the waves needed for global societal change. Strong curricula interventions mirroring a broader view of sustainability are evident in Norway, Sweden, New Zealand and emerging in Japan (Elliott, Ärlemalm-Hagsér & Davis, 2020). Additionally, the Australian school curriculum (ACARA, 2014) has an embedded cross-curricular priority of sustainability, but national early childhood education policies and curricula, including the recently revised Australian *National Quality Standard* (NQS) (ACECQA, 2018), are less explicit. To address challenges for educators, such as a lack of understanding about the multi-dimensionality of sustainability; the predominance of anthropocentric viewpoints; and, a lack of pedagogical guidance, in this paper we raise awareness of potential connections between policy, pedagogy, and the SDGs. Moreover, we explore connections between the 17 SDGs and the Australian NQS and early childhood education for sustainability (ECEfs) practices.

Keywords: Early Childhood Education for Sustainability (ECEfs), sustainability, transformative ECEC approaches, future-focused ECEC pedagogies, Sustainable Development Goals

Early childhood education and care (ECEC) has much to offer as a conduit for advancing sustainability. It makes a vital contribution to the interdependent pillars of social, economic, political and environmental development, as identified in the *Sustainable Development Goals* (SDG) (UNESCO, 2017). The SDGs recognise children as “agents of change when they channel their infinite potential to create a better world” (Britto, 2015, p. 1). Working with the world's youngest children is crucial to the connections required to implement early childhood education for sustainability (ECEfs) and to promote transformative change towards a society which respects the global needs of sustainability.

ECEfs is fundamentally about change. Holistic, action-oriented and participatory pedagogies and approaches, inherent in ECEfs, are critical to achieve the change required for a sustainable world (Davis, 2015). Transformation is also an imperative of the SDGs, they were developed to solve complex societal challenges. To raise awareness of potential connections between policy, pedagogy and the SDGs, we offer insights into how the SDGs and the *National Quality Standard* (NQS) (Australian Children’s Education and Care Quality Authority (ACECQA), 2018) can be mapped together to promote awareness and understanding of sustainability, inspire and strengthen everyday practice, and promote future-orientated improvement and social awareness.

Importantly, we do not advocate using the SDGs to ‘tick off’ sustainable practices or create a recipe or ‘how to’ guide to implement sustainable activities. Rather, we offer an opportunity to build an understanding of the multidimensionality of sustainability and transformational approaches to encourage further reflection and future-focused advocacy and action for ECEFS.

Methodological Approach

Anecdotally, when facilitating professional learning in Australian early childhood services, we have often found educators unfamiliar with the SDGs and the multidimensionality of sustainability as identified by UNESCO (2010). These professional findings mirror both Australian and international research (Elliott et al., 2016; Inoue et al, 2016). While the SDGs are not a didactical tool, we were interested in exploring the potential use of the SDGs to increase awareness and understanding of sustainability as a multidimensional concern. We propose engaging with the SDGs might afford opportunities for educators to both demonstrate quality practice aligned with the NQS, as well as support transformative and collective pedagogical approaches to foster and further change.

We began by exploring sustainability, the SDGs and considered implications for ECEFS. We scrutinized literature exploring ECEFS in ECEC policy internationally, and then turned to Australian policy, in particular, the revised *National Quality Standard* (ACECQA, 2018). We analysed the NQS to investigate how sustainability is positioned explicitly and implicitly, and then identified ramifications for educators. We examined the SDGs to map alignments between the NQS and the SDGs to reveal connections. Finally, we interrogated examples of Australian ECEC practices to illustrate how the SDGs may be integrated with the NQS to inspire future-orientated transformational ECEFS practice. Note the NQS employs the term ‘educators’ to refer to all adults who work with children, regardless of qualifications, so this terminology is used throughout our paper.

Sustainability and sustainable development

More than 30 years ago, *Our Common Future*, Brundtland’s (1987) report for the United Nations, called for a global agenda for change to ensure a more sustainable future. This report appealed for global, intergenerational equity, challenging the perception that the environment was somehow separate from humans, and the view of development as being a concern for poorer nations only. To achieve a more sustainable world, global, transformational progress across social, economic, ecological, and political dimensions was required.

Decades later, sustainable development encompasses many processes and pathways to achieve sustainability (UNESCO, 2019). Sustainability, or a more sustainable world, is the long-term goal. Sustainable development focusses on inter- and intragenerational equity bound to the distinct but interconnected pillars of the environment, economy, and society (Mensah, 2019). The UNESCO (2010, cited in Davis, 2015) depiction of sustainable development, as illustrated in Figure 1, distinguishes the political and social aspects of society further, identifying four interrelated dimensions: social, economic, natural, and political. Based on the original findings from Brundtland’s (1987) report, it represents a broad, complex, and interconnected approach which aims to shift focus from the perception of sustainability as a singularly environmental concern.

Background to the SDGs

The arrival of a new century provided impetus for specific goals to meet the challenge of globalisation and poverty. Global evidence of geological, atmospheric, biospheric, and hydrologic alterations to the Earth as a direct impact of the ever-growing human population became widely known (The Smithsonian, 2020). The *Millennium Development Goals* set by the UN in 2000 focused on reducing poverty and corresponding dilemmas such as water access, disease control, and access to education. The 2007 declaration of the ecological epoch, the Anthropocene (Steffen et al., 2007), identified the impacts of humans upon the earth, including climate change, deforestation and reduced biodiversity, and created more momentum for change. The Millennium goals were expanded and replaced by the *Sustainable Development Goals* (SDGs) (UNESCO, 2015), shown in Table 1, to meet the urgency of challenges (environmental, political and economic) facing the world (UNESCO, 2019).

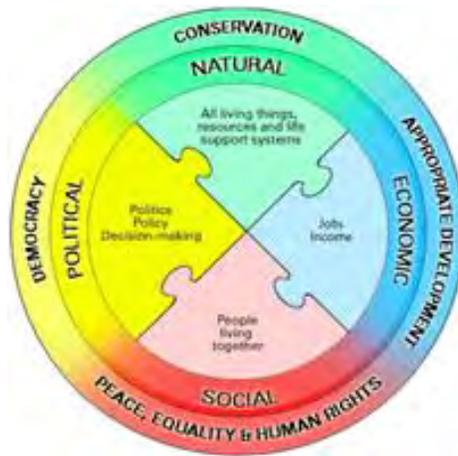


Figure 1. The Four Dimensions of Sustainable Development (UNESCO, 2010)

Table 1

Sustainable Development Goals

Sustainable Development Goals	
1	No Poverty – End poverty in all its forms everywhere
2	Zero Hunger – End hunger, achieve food security and improved nutrition and promote sustainable agriculture
3	Good Health and Well-Being – Ensure healthy lives and promote well-being for all at all ages
4	Quality Education – Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
5	Gender Equality – Achieve gender equality and empower all women and girls
6	Clean Water and Sanitation – Ensure availability and sustainable management of water and sanitation for all
7	Affordable and Clean Energy – Ensure access to affordable, reliable, sustainable and clean energy for all
8	Decent Work and Economic Growth – Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
9	Industry, Innovation and Infrastructure – Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
10	Reduced Inequalities – Reduce inequality within and among countries
11	Sustainable Cities and Communities – Make cities and human settlements inclusive, safe, resilient and sustainable
12	Responsible Consumption and Production – Ensure sustainable consumption and production patterns
13	Climate Action – Take urgent action to combat climate change and its impacts
14	Life below Water – Conserve and sustainably use the oceans, seas and marine resources for sustainable development
15	Life on Land – Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
16	Peace, Justice and Strong Institutions – Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
17	Partnerships for the Goals – Strengthen the means of implementation and revitalize the global partnership for sustainable development

Note: Adapted from Sustainable Development Goals UNESCO (2015)

<https://en.unesco.org/sustainabledevelopmentgoals>

The 17 SDGs define the focus for work towards future sustainability from 2016 to 2030. They aim to “secure a sustainable, peaceful, prosperous and equitable life on earth for everyone now and in the future” (UNESCO, 2017, p. 6). The goals reflect the global complexity of sustainable development across four intertwined dimensions (environmental, economic, social, and political) (UNESCO, 2010). This complexity is also demonstrated in the interconnection and interrelatedness of all the SDGs. Action in each goal impacts another. However, progress on the SDGs is not advancing at the scale required. In September 2019, UNESCO called for a Decade of Action to accelerate global progress on the goals. The COVID-19 pandemic has thwarted progress further (UNESCO, 2020). Initially a health crisis, this pandemic has become a political, social and economic crunch which is stalling progress on environmental change. We argue to achieve the goals by 2030 urgent transformational approaches are required.

Understandings of Education for Sustainability in Early Childhood Practice

Education has long been a key driver for change. Quality education is a goal itself (SDG 4) and critical to the success of all 17 goals. Education is acknowledged as integral to sustainable development across all dimensions as well as a key enabler in SDG 4.7:

By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture’s contribution to sustainable development. (UNESCO, 2017, p. 7)

Moreover, education for sustainability (Efs) is understood as a fundamental part of a quality education. UNESCO (2017) insists that Efs must be integrated into policy frameworks, programs and curricula at all levels of governance and all levels of formal and informal education including ECEC.

Efs, and, specifically for the context of this paper, ECEfs, is a socially transformative approach across all four dimensions of sustainability (Davis, 2015). Learning is holistic and centred on principles such as: intergenerational equity; relationships and interconnections; action orientated processes; systemic, whole settings approaches; critical thinking and reflection; empowerment; active citizenship; democratic participation and decision-making (Davis, 2015; Elliott et al., 2016). ECEfs and ECEC draw on foundational principles of social justice and equity (Davis, 2015; Elliott et al., 2016). However, many Australian educators do not identify principles such as social justice and equity as aspects of sustainability (Elliott et al., 2016; Hill et al., 2014). As Elliott et al. (2016) state “Deeper understandings of the multiple dimensions of sustainability, consideration of sustainability values and commitment to relevant ethics and systems approaches to daily sustainable living all still appear to be quite limited” (p. 24).

Research suggests that ECE educators predominantly focus on nature-based activities and actions such as playing in nature, tending worm farms, recycling or composting (Elliott & Young, 2015; Inoue et al., 2016). This nature by default paradigm stems from legacies of romantic traditional theorists such as Rousseau and Froebel and more recent advocates such as Sobel and Louv (Elliott & Young, 2015). These theories inextricably link children’s wellbeing and development with nature, and a love of nature as crucial to ECEfs (Elliott, Årlemalm-Hagsér et al., 2020; Elliott & Young, 2015). As a result, educators often perceive that having a ‘nature’ orientation to their work is enough, and that this is equivalent to ‘doing’ ECEfs (Elliott et al., 2016; Elliott & Davis, 2017; Inoue et al., 2019). These perceptions are untenable in the Anthropocene (Elliott & Davis, 2017; Inoue et al., 2019). They do not reflect a multidimensional or transformational view of Efs.

Education for Sustainability in International ECEC Policy

Elliott et al. (2016, p. 28) emphasise the need for Australian early childhood educators to recognise principle and practice connections and embed these through everyday policies and pedagogies that reflect deeper understandings of sustainability. We note, strong curricula and policy interventions mirroring a broader view of sustainability are

evident internationally. While a detailed examination is beyond the scope of this paper, we offer a brief summary of recent interventions in Norway, Sweden, New Zealand and Japan with potential to inform policy change in Australia.

Norway is recognised for its long history of education for sustainable development (Heggen, 2016). More recently, the revised *Norwegian Framework Plan for ECE* (Norwegian Ministry of Education and Research, 2017) officially mandated sustainable development as one of the core values for early childhood. Reflecting the Brundtland (1987) report, sustainable development is seen as multi-dimensional (social, environmental and economic). The revised framework pays close attention to intergenerational equities, democracy, diversity, and social justice (Elliott et al., 2020; Li et al., 2019).

Recent policy revisions in Sweden build on a long history of ECEC educators working with children as active contributors across environmental, political, social and economic sustainability issues (Ärlemalm-Hagsér, 2013, cited in Elliott et al., 2020). The 2018 revised curriculum recognises sustainable development as a fundamental value. Three new curriculum goals aligned with sustainability have been introduced, which emphasise children as important actors for creating change towards sustainable futures (Elliott et al., 2020). This recognition aligns with the incorporation of the *United Nations Convention on the Rights of a Child* (UNICEF, 1989) into Swedish Law from January 2020.

In New Zealand, the Education Council's *Our Code, Our Standards* commits that all teachers will promote and protect the principles of human rights, sustainability and social justice and foster learners to be active participants in community life and engaged in issues important to the wellbeing of society (New Zealand Education Council, 2017). This professional responsibility is expected at both pre-service and in-service levels. Social dimensions of sustainability and active, democratic citizenship also lie at the heart of the revised early childhood curriculum *Te Whāriki* (New Zealand Ministry of Education, 2017).

Japanese early childhood educators have a strong tradition of practising nature-based activities in early childhood services. Inoue et al. (2019) note that further research on Japanese Forest kindergartens and Japanese interpretations of Swedish Skogsmulle forest programs could offer potential for promoting ECEfS in Japan. Japan's revision of its national kindergarten curriculum in 2017 included the phrase "to build a sustainable society" (Japanese Ministry of Education, Culture, Sports, Science and Technology, 2017, p. 2, cited in Elliott et al. 2020, p. 58), offering scope for broader capacity building in ECEfS.

Education for Sustainability in Australian ECEC Policy

Both *The Australian Curriculum* (Australian Curriculum, Assessment and Reporting Authority (ACARA), 2014) and the early childhood *National Quality Framework* were developed in response to the Melbourne Declaration on Educational Goals for Young Australians (Ministerial Council on Education, Employment, Training and Youth Affairs, 2008). Firstly, *The Australian Curriculum* (ACARA, 2014) is designed for school students aged between five years and eighteen years old and places emphasis on sustainability as an embedded cross-curricular priority. The policy recognises sustainability as multi-dimensional, requiring "consideration of environmental, social, cultural and economic systems and their interdependence" (ACARA, 2014, para.2). Building student capacity to participate critically and think creatively about issues concerning intergenerational equity and fairness is a key concept within this priority. In contrast, the *National Quality Framework* drives quality improvement for ECEC services including after school care across Australia and incorporates both the EYLF (DEEWR, 2009) as a curriculum guide and the NQS (ACECQA, 2017) an assurance rating and assessment component. While *The Australian Curriculum* (ACARA, 2014) offers a strong precedent here, we now specifically consider the somewhat tenuous location of sustainability in the NQS.

The National Quality Standard

Introduced in 2012 and revised in 2017, the NQS is underpinned by the Education and Care Services National Law and National Regulations and is linked to two national learning frameworks: *Belonging, Being and Becoming: The early years learning framework for Australia* (Department of Education and Training (Department of Education Employment and Workplace Relations (DEEWR), 2009) and *My time, Our place: Framework for school age care in*

Australia (DEEWR, 2009). Services are assessed and rated by the regulatory authority in their state or territory against seven quality areas within the NQS, as shown in Table 2. When initially introduced in 2012, the quality areas were divided into 18 standards, broken down into 58 elements. However, the revised NQS introduced in 2018 was consolidated to 15 standards and 40 elements. Key to this assessment process is the Quality Improvement Plan (QIP), a working document which each centre develops to identify continuous improvement across each of the seven quality areas. An overall rating is determined, and centres are graded as: Significant improvement required; Working toward the NQS; Meeting the NQS; or, Exceeding the NQS. Exceeding the NQS “requires a service to go above and beyond what is expected” (ACECQA, 2018, p. 92). Services awarded an Exceeding NQS rating may then apply to ACECQA for further assessment to be considered for a rating of Excellent. Services must display their ratings which are also published on a national register.

Table 2

Quality Areas within the revised National Quality Standard (2018)

Quality Area	Descriptor
Quality Area 1	Educational program and practice
Quality Area 2	Children’s health and safety
Quality Area 3	Physical environment
Quality Area 4	Staffing arrangements
Quality Area 5	Relationships with children
Quality Area 6	Collaborative partnerships with families and communities
Quality Area 7	Governance and Leadership

Note: Adapted from National Quality Standard ACECQA (2018)

<https://www.acecqa.gov.au/sites/default/files/2018-10/Guide-to-the-NQF-3-Assessment-and-rating.pdf>

It is noteworthy sustainability was included in the original 2012 NQS under Quality Area 3 (Physical environment) Standard 3.3 and respective elements 3.3.1 and 3.3.2 elements. Standard 3.3 stated: “The service takes an active role in caring for its environment and contributes to a sustainable future” (ACECQA, 2017a). Element 3.3.1: “sustainable practices are embedded in service operations” and Element 3.3.2: “children are supported to become environmentally responsible and show respect for the environment” sat within this original standard (ACECQA, 2017a). The contextualising of sustainability as an environmental concern was clearly visible. The remaining quality area foci clearly aligned to the principles of ECEfS identified earlier in this paper such as relationships and interconnections; action orientated processes; systemic, whole settings approaches; critical thinking and reflection; active citizenship; democratic participation and decision-making (Davis, 2015, Elliott et al., 2016); however, this connection was not explicit. The inclusion of sustainability within the national quality agenda, albeit a narrow focus, was considered a “first significant step towards systemic change in early childhood education” (Elliott & Davis, 2017, p. 171). Yet, this opportunity was short-lived. Research revealed educators found translating knowledge and beliefs about sustainability into pedagogical practice very challenging, and they often required professional support (Elliott & McCrea, 2015), with calls for urgent action to “demystify sustainability” (Elliott & McCrea, 2015, p. 17). A lack of explicit language in the NQS to guide educator engagement with sustainable practices was evident.

Sustainability and the Revised National Quality Standard

The NQS was reviewed during 2014 - 2015. Education Services Australia (2017) noted that more than half the submissions in response to the draft revision of the NQS requested the removal of the word ‘sustainability’ from the

document, echoing concern that these elements were too difficult to implement and unnecessarily burdensome (Productivity Commission, 2014). Such concern reflects Elliott and McCrea's (2015) findings.

The revised *National Quality Standard* (ACECQA, 2018) was released in 2018 to strengthen clarity, reduce regulatory burden and remove overlap between some elements (ACECQA, 2017). Significantly, there was no reference to sustainability in any Quality Areas. The term sustainability had been diluted to environmental responsibility within one element only, Element 3.2.3 of Quality Area 3 (Physical environment): "The service cares for the environment and supports children to become environmentally responsible" (ACECQA, 2018, p. 90). This explicit focus on children's engagement with and care for the natural environment did not reflect or explicitly address the complexity of sustainability as a multidimensional issue, in particular, the economic, social, and political dimensions (UNESCO, 2010). Thus, concerns arise about romanticised nature-by-default traditions in early childhood education and narrow anthropocentric interpretations of ECEFS (see Elliott, Ärlemalm-Hagsér et al., 2020; Elliott & Davis, 2017; Elliott & Young, 2015; Inoue et al., 2019).

The word 'sustainability' in the revised NQS is couched only within terms of practices: children "engage in sustainable practices ... (and) watch adults model sustainable practices" (ACECQA, 2018, p. 198). However, the notion of embedding these practices has been removed from Meeting the NQS requirements and now sits within the descriptors for Exceeding the NQS, signaling that consistent and frequent sustainable practices are above and beyond everyday practice, and extra work for educators. Additionally, the inclusion of children's voices (and families' voices) as participants in the service's approach to environmental sustainability, and collaborating with families and/or the community in sustainable practices are also considered to be exceeding the standard. Should exceeding practices be considered as additional work for educators, this may potentially constrain children's participation in decisions that influence their world, as well as limiting partnerships with families. This is at odds with three guiding principles of the NQF: "the rights and best interests of the child are paramount; children are successful, competent and capable learners; and, the role of parents and families is respected and supported (ACECQA, 2018, pp. 10-11). Problematically, the inclusion of these descriptors as exceeding what is required for quality practice presents a confusing message for educators. They may view these practices as superfluous to the work required in everyday practice and not understand the links between participation and partnerships and the socio-political dimensions of sustainability.

International research calls for educators to "expand their repertoire of practices for sustainability towards more transformative approaches to EFS that encourage participation, problem-solving, critical thinking and 'making a difference'" (Inoue et al., 2016, p. 4). While the revised Australian Standard is purported to "strengthen quality through greater clarity" (ACECQA, 2017, p. 1), the watering down of the term sustainability has "eroded the feasibility for policy-leveraged practitioner change" (Elliott et al., 2020 p. 54) and potentially again marginalised sustainability (Elliott & Davis, 2017) from mainstream early childhood practice. It is evident that the revised NQS does not explicitly or effectively support educators to understand sustainability and ECEFS as a complex issue which requires transformational thinking and participatory, collective action. We argue the revised NQS has not demystified sustainability to inform practice.

Transforming Sustainability Practice

Transforming practice in ECEFS begins with an awareness that socio-political-environmental-economic dimensions are integrated and will move us towards a more cohesive and globally sustainable community when they are also taught and experienced together. However, pedagogies in ECEFS have been restricted to the limited understandings of educators with orientation towards traditional nature education, which are further challenged by the insufficiencies of the NQS to provide practice and pedagogical support (Inoue et al., 2016).

Historically, ECEC and ECEFS align (Davis, 2015; Samuelsson & Katz, 2008). Examples of this synergy include integrated curriculum; holistic viewpoints; a sense of community; participation; relationships; rights; and, social justice. Educators use critical and participatory pedagogies to enable children to make meaning of the world around them, challenge their thinking, and engage them as agentic and active citizens (Davis, 2015; Elliott, 2019; Samuelsson & Katz, 2008). These ECEC tenets are familiar and evident throughout the NQS. The NQS reflects the *United Nations*

Convention on the Rights of a Child (UNICEF, 1989) and positions children as rights holders, agentic citizens, and active decision-makers, reflected in Quality Area 1.2.3 (ACECQA, 2018). Further, the leading Australian ECEfS researcher Davis (2014) challenges educators to consider a revisioning of rights in ECEfS to transform their thinking and practice. Drawing on the *United Nations Convention on the Rights of a Child* (UNICEF, 1989), Davis (2014, p. 23) has developed a framework of five expanding rights: individual rights of a child; children's agentic participation rights; collective rights; intergenerational rights; and, bio/ecocentric rights. This expanded view guides educators towards an ecocentric viewpoint rather than an anthropocentric, child-centred view. It reinforces that humans and more-than-humans share the planet and live in a commonworld. When educators listen to children's ideas, look for opportunities for children to actively participate with and connect to the environment and community around them, and provide them with frameworks to influence and make a difference in the commonworlds they share with others, they are teaching for now and the future.

Furthermore, sustainable development is built on the principle of participation (Mensah, 2019). ECEfS must be participatory and collective to be successful and create sustainable change. Collaborative learning (NQS Quality Area 5.2.1) and collaborative partnerships with families and communities (NQS Quality Area 6) offer meaningful ways to embed and support the collaborative skills children and families can take forward in their collective projects and civic actions for sustainable development. But, again Australian educators require support to recognise these links between the NQS (ACECQA, 2018) and sustainability in practice.

Transformative pedagogies and approaches are also critical to achieve the change required for a sustainable world. The SDGs are transformative and orientate us towards hope for future generations by addressing all four dimensions of sustainability. Educators can broaden their understanding of the complexity of sustainability by becoming familiar with the SDGs. Furthermore, policy can be used as an effective methodology for working with SDGs (Paoli & Addeo, 2019). Clear alignments can be seen between the SDGs and Australian ECEC policy, specifically the NQS. Mapping the SDGs with the NQS offers an effective framework for educators to critically reflect and transform their practices and pedagogies to create waves of change. We explore some possible alignments between the SDGs and the NQS Quality Areas in Table 3, and in the following stories of ECEfS practice.

Stories of ECEfS Practice

Australian early childhood educators are continuously reflecting on their practice, children's learning and opportunities for improvement (NQS 1.3.2) to provide the highest quality education (SDG 4). Exploring the SDGs explicitly within local contexts through participatory projects can enable the practices of building community, collaboration and critical reflection as evidenced in the NQS (ACECQA, 2018). To illustrate this, we offer two stories of practice from Australian ECEC services. We describe how educators link their existing practice with the NQS and SDGs in their transformative journey to illustrate the potential of our mapping in Table 3.

The Book Swap

One centre recently participated in a 'Book Swap' for the Indigenous Literacy Foundation to promote National Book Week, providing an experience in community engagement (NQS 6.2.3) with the national community. Rather than the usual practice of children dressing up as a favourite story character, families were invited to bring in their unwanted books as a gift to others. The books were collected then displayed for swapping a week later, thus providing opportunity for equal access and participation (NQS 6.2.2) to a wider range of literature for families within the kindergarten. The final aspect of the book swap was for families to make a coin donation, which was then donated to the Indigenous Literacy Foundation to further fund resources for vulnerable Indigenous communities and reduce the gap in educational outcomes for these children. This action links to enacting and integrating SDG 10: Reduced inequalities and SDG 4: Quality Education in meaningful ways.

The educational practice of working together respectfully and democratically with children and families towards the Indigenous Literacy Foundation Book Swap also raised awareness of equity, see Table 4. This initiative provoked questions and conversations with children, families and colleagues about reduced inequalities (SDG10) and encouraged collaborative learning (NQS 5.2.1) both within the learning program and with families. The project also showed families the benefits of swapping items, building their awareness of a circular economy (SDG 11: Sustainable

communities). In addition, social interactions flourished as children and families shared book reviews and recommendations with each other over the swapping table and baskets (NQS 6: Collaborative partnerships with families and communities).

Table 3

National Quality Standard mapped with Sustainable Development Goals

National Quality Standard (2018)	Sustainable Development Goals
<p><u>1. Educational Program and Practice</u></p> <p>1.1 Program: Approved learning framework, Child centred, Program learning opportunities</p> <p>1.2 Practice: Intentional teaching, responsive teaching & scaffolding and child directed learning</p> <p>1.3 Assessment & planning: assessment and planning cycle, critical reflection, information for families</p>	<p>1 No Poverty</p> <p>3 Good Health and Wellbeing</p> <p>4 Quality Education</p> <p>5 Gender Equality</p> <p>10 Reduced Inequalities</p> <p>14 Life under water. Content and conservation</p> <p>15 Life on land. Content and conservation</p> <p>17 Partnerships for the Goals</p>
<p><u>2. Children's Health and Safety</u></p> <p>2.1 Health, wellbeing and comfort, health practices and procedures, healthy lifestyle</p> <p>2.2 Safety, supervision, incident and emergency management, child protection</p>	<p>1 No Poverty</p> <p>2 Zero Hunger</p> <p>3 Good health and Wellbeing</p> <p>4 Quality Education</p> <p>11 Sustainable Cities and Communities</p> <p>12 Responsible consumption</p> <p>17 Partnerships for the Goals</p>
<p><u>3. Physical Environment</u></p> <p>3.1 Design: fit for purpose, upkeep</p> <p>3.2 Use: inclusive environment, resources support play based learning, environmentally responsible</p>	<p>3 Health and Well-Being</p> <p>4 Quality Education</p> <p>6 Clean Water and Sanitation</p> <p>7 Affordable and Clean Energy</p> <p>9 Industry, Innovation and Infrastructure</p> <p>17 Partnerships for the Goals</p>
<p><u>4. Staffing Arrangements</u></p> <p>4.1 Organisation of educators, Staffing arrangements: organisation of educators, continuity of staff</p> <p>4.2 Professionalism: professional collaboration, professional standards</p>	<p>3 Health and Well-Being</p> <p>5 Gender Equality</p> <p>8 Decent Work and Economic Growth</p> <p>11 Sustainable Cities and Communities</p> <p>17 Partnerships for the Goals</p>
<p><u>5. Relationships with Children</u></p> <p>5.1 Relationships between educators & children: positive educator to child interactions, dignity and rights of the child</p> <p>5.2 Relationships between children: collaborative learning, self-regulation</p>	<p>1 No Poverty</p> <p>2 Zero Hunger</p> <p>3 Good Health and Well-Being</p> <p>4 Quality Education</p> <p>17 Partnerships for the Goals</p>
<p><u>6. Collaborative Partnerships with Families and Communities</u></p> <p>6.1 Supportive relationships with families: engagement with the service, parent views are respected, families are supported</p> <p>6.2 Collaborative partnerships: transitions, access and participation, community engagement</p>	<p>3 Good Health and Well-Being</p> <p>4 Quality Education</p> <p>5 Gender Equality</p> <p>10 Reduced Inequalities</p> <p>11 Sustainable Cities and Communities</p> <p>17 Partnerships for the Goals</p>

<p>7. Governance and Leadership 7.1 Governance: service philosophy and purpose, management systems, roles and responsibilities 7.2 Leadership: continuous improvement, educational leadership, development of professionals</p>	<p>4 Quality Education 8 Decent Work and Economic Growth 9 Industry, Innovation and Infrastructure 10 Reduced Inequalities 11 Sustainable Cities and Communities 12 Responsible Consumption and Production 16 Peace, Justice and Strong Institutions 17 Partnerships for the Goals</p>
--	---

Table 4

The Book Swap. Correlation between practice, SDGs and NQS.

Action/Practice	SDG	NQS
Conversations with children. Did you know not all children have books to read or libraries to visit? How can we make sure all children have equal access to books?	<p>4. Quality education when book week programs include reaching out to the broader community. 10. Reduced inequalities when books and money are donated to those less fortunate. 11. Sustainable communities when families are encouraged to consider children beyond their own. 16. Peace, justice and strong institutions when social justice issues are championed.</p>	<p>1.2.1 Educators are deliberate, purposeful and thoughtful in their actions, when they provoke conversations of equity. 3.2.3 The service supports children to become environmentally and socially responsible when they consider the equity of others.</p>
Gifting unwanted books. Children experiencing a circular economy by re-gifting and less materialism.	<p>1. No poverty when we share the resources we have with others. 8. Economic growth when resources are shared, and finances are better utilities for other needs. 13. Climate action when less resources are manufactured.</p>	<p>5.2.1 Children are supported to collaborate, learn from and help each other.</p>
Children experiencing a circular economy.	<p>11. Sustainable cities and communities when children and families experience and are involved in a trade economy. 12. Responsible consumption.</p>	<p>6.2.3 The service builds relationships with and engages with its community.</p>
Families supporting the literacy of Indigenous children through financial donations.	<p>1. No Poverty when education is accessible to all. 4. Quality education for all 10. Reduced inequalities.</p>	<p>1.1 Program</p>

This practice illustration reflects work by Gilbert et al. (2014) that reveals how educator's practices transform when they view children as capable, competent facilitators of their own learning and engage with them in intercultural experiences. Blair and Carroll (2008) similarly discuss social capital and its role in holistic sustainable development, where "social relationships and networks can shape local economies" (p. 42). They describe the value of building local social groups and projects which benefit the local community and economy. Social capital can also be considered a useful integrated practice in early childhood education, providing a local beneficial economy and embedding the conceptual skills for community development.

Art program: Water

This second story of practice illustrates how SDGs can be integrated into existing programs and highlights the connections to ECEfs. For over twelve years an artist in residence had taken children on a learning journey of art concepts within the teaching practices of connecting to community, nature and using recycled materials. This engagement with children extended to families with an end of year art show planned and coordinated by children, staff and families together. While the art program provided children with opportunities to explore their own mark making, line, colour and patterns (NQS 1.2.1) it also provoked conversations. The resident artist encouraged and listened to children's knowledge and thoughts on water and about water in small social groups (NQS 5.2.1). The multidimensionality of sustainable thinking was key to the art program. Recycling reduced the resources used physically and financially, cultural diversity was included in the art styles and languages employed, and conservation of the water environment (NQS 3.2.3) was a strong interest for the children. Supported by a team of collaborative educators (NQS 1.2.2; 4.2.1) in other aspects of the program, water became an art material as well as a topic for the children to explore. Indigenous perspectives about water were invited from a local elder (SDG 8), who shared his Yuggera (language and culture) wisdom. He explained the importance of conserving water, the difference between fresh and saltwater, and offered a few words in Yuggera language.

After three kindergarten terms of regular art experiences, reflective conversations and listening to children's perspectives (NQS 1.2.3) the exhibition emerged. The children's learning was represented in their unique art works, including an understanding of life below water and conservation of water habitats. This deep participation of children and educators contributed to building a true connection to place and nature which may influence lifelong motivations for living sustainably. The participatory learning processes of working together, experiencing collaborations, respect and implementing project skills supported the development of skills and dispositions required for social and political sustainability.

Towards the end of the year, in consultation with children, the exhibition was taken out into the community at public venues where families could safely attend and distance amongst the general public in line with COVID 19 restrictions (NQS 6.3.2: Community Engagement). Collaborative plans and organising (NQS 5.2.1) resulted in a new look for this art show. Rather than being held within the early childhood centre, it had transformed into a community exhibition, able to be shared with the wider community. The goal of sustainable cities and communities (SDG 11) was used well to transform educational practices as the children's artworks were displayed in larger venues throughout the community. The children designed and drew a map to guide families and the wider community to follow the artwork trail, enabling them to share in the learning journey of the young artists. From saltwater puddles to barnacles, the local community was taken on a creative journey with and about water (SDG 14: Life below water). This art program connected the SDGs and NQS in many ways, as shown in Table 5.

Table 5*Art Program: Water. Correlation between practice, SDGs and NQS*

Practice	SDG	NQS
Natural and recycled resources are selected and set up in an aesthetically pleasing manner.	4. Quality education	1.2.1 Intentional teaching
Literature selection for planned shared reading and for free access.	4. Quality education	1.2.1 Intentional teaching
Open and provoking questions are used to connect children's prior knowledge. Who lives below the water? What do they need to live there? How can we help keep their habitat safe and healthy?	4. Quality education 14. Life under water	1.2.1 Intentional teaching 1.2.3 Child directed learning
Collaborative conversations during the art process. Using documentation shared with other children and families to provoke connections.	4. Quality education 10 Reduced Inequalities	1.2.1 Intentional teaching 1.2.3 Child directed learning
Structured small groups in Term 3 to build social skills and diversity.	4. Quality education 11. Sustainable cities and communities	1.2.2 Intentional teaching 5.2.1 Collaborative learning
Specialist art teacher; higher ratios. Targeted professional development.	4. Quality education	4.1.1 Organisation of educators
Community exhibition.	4. Quality education 11. Sustainable cities and communities	6.2.3 Community engagement
Focus on water.	14. Life below water. Including cognitive, socio-cultural and behavioural learning objectives	1.2.1 Intentional teaching 3.2.3 Environmentally responsible
Reducing water and learning together to protect water habitats.	12. Responsible consumption	3.2.3 Environmentally responsible

Conclusion

In this paper, we have highlighted the value of working with the SDGs and Australian NQS (ACECQA, 2018) as integral to participatory projects, bringing together tools for transformative pedagogy in the context of stories of practice. These stories demonstrate some possibilities for integrating the dimensions of sustainability with the NQS (ACECQA, 2018) to transform practices in early childhood. These community engaging art exhibitions and the book swap project show the potential to lead others, building future-orientated skills for children and leaders of tomorrow's projects through collaborative planning and participation towards an improved and sustainable community. The social capital gained by all stakeholders in these communities as they worked together to listen with children and collectively facilitated these projects are skills which will propel them forward into building social sustainability in partnerships for the SDGs.

The SDGs attune us as a global society to the critical action that must occur. Early childhood educators “are in a pivotal position to enable transformative social change towards sustainable development” (Kuzich et al., 2015). The breadth and complexity of sustainability is evidenced by the SDGs, and when these goals are matched to the NQS, educators can see clear alignments between principles of sustainability, ECEfs and ECEC. As a result, educators may realise how their pedagogies and practices contribute to a more sustainable world. Working with the SDGs can empower educators with the knowledge to demonstrate quality practice in line with the NQS (ACECQA, 2018). While the SDGs are not a didactical tool, educators seeking to build forward-thinking visions of education for sustainability may do well by mapping together the SDGs with the NQS (ACECQA, 2018). In doing so, they may recognise many of their practices are already working towards these goals and become inspired to further engage in transformative future-orientated pedagogies with children.

Integrating the SDGs with the NQS (ACECQA, 2018) offers educators a progressive, expanded pathway for understanding, demystifying and visioning sustainability, which presents opportunities for systemic change. Working with the SDGs can support educators to demonstrate quality practice in line with the NQS (ACECQA, 2018), and by doing so, transform the early childhood landscape beyond the confines of the limited view of sustainability expressed in the NQS. As influencers of early childhood pedagogy, educators are the designers and presenters of a more holistic understanding of education towards societal and global sustainability who will inspire the hopeful, transformative change required in the learning spaces of early childhood.

References

- Australian Curriculum, Assessment and Reporting Authority [ACARA]. (2014). *Foundation to year 10 curriculum: Sustainability*. <https://www.australiancurriculum.edu.au/f-10-curriculum/cross-curriculum-priorities/sustainability/>
- Australian Children’s Education and Care Quality Authority [ACECQA]. (2017a). *Changes to the national quality framework*. https://www.acecqa.gov.au/sites/default/files/2018-01/Decision_RIS_Summary_Of_Changes_To_The_NQF.pdf
- Australian Children’s Education and Care Quality Authority [ACECQA]. (2017b). *The quality of physical environments in education and care services. An analysis of quality area 3 of the national quality standard. Occasional Paper 4*. https://www.acecqa.gov.au/sites/default/files/acecqa/files/Reports/OccasionalPaper4-TheQualityofPhysicalEnvironments_2.pdf
- Australian Children’s Education and Care Quality Authority [ACECQA]. (2018). *Guide to the national quality framework*. <https://www.acecqa.gov.au/sites/default/files/2018-10/Guide-to-the-NQF-3-Assessment-and-rating.pdf>
- Blair, J. P., & Carroll, M. C. (2008). Social capital. *Economic Development Journal*, 7(3), 42-49.
- Britto, P. (2015, October 22). *Why early childhood development is the foundation for sustainable development*. Experts Speak. <https://blogs.unicef.org/blog/why-early-childhood-development-is-the-foundation-for-sustainable-development/>
- Brundtland, G. H. (1987). *Our common future*. <https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf>
- Davis, J. (2014). Examining early childhood education through the lens of education for sustainability: Revisioning rights. In J. Davis & S. Elliott (Eds.). *Research in early childhood education for sustainability: International perspectives and provocations* (pp. 21-37). Routledge.
- Davis, J. M. (2015). What is early childhood for sustainability and why does it matter? In J. M. Davis (Ed.). *Young children and the environment* (pp. 1-31). Cambridge University Press.
- Department of Education Employment and Workplace Relations (DEEWR). (2009). *Belonging, being and becoming: The early years learning framework for Australia*. <https://www.dese.gov.au/national-quality-framework-early-childhood-education-and-care/resources/belonging-being-becoming-early-years-learning-framework-australia>

- Department of Education Employment and Workplace Relations (DEEWR). (2009). *My time, our place: Framework for school age care in Australia*. https://www.acecqa.gov.au/sites/default/files/2020-05/my_time_our_place_framework_for_school_age_care_in_australia.pdf
- Education Services Australia. (2016). *Decision regulation impact statement for changes to the national quality framework*. https://ris.pmc.gov.au/sites/default/files/posts/2017/03/changes_to_the_national_quality_framework_decision_ris.pdf
- Elliott, S. (2019, May, 1). *Education for sustainability*. The Spoke. <http://thespoke.earlychildhoodaustralia.org.au/education-for-sustainability/>
- Elliott, S., Ärlemalm-Hagsér, E., & Davis, J. (2020). Re-framing the text, a second time. In Elliott, E. Ärlemalm-Hagsér & J. Davis (Eds). *Research in early childhood education for sustainability: Challenging assumptions and orthodoxies* (pp. xx-xxix). Routledge.
- Elliott, S., Ärlemalm-Hagsér, E., Ji, O., Wang, W. & Mackey, G. (2020). Synopsis. An update on countries previously represented in the first volume (Australia, Japan, South Korea, New Zealand, Norway, Sweden, United Kingdom, plus China). In S. Elliott, E. Ärlemalm-Hagsér & J. Davis (Eds). *Research in early childhood education for sustainability: Challenging assumptions and orthodoxies* (pp. 53-68). Routledge.
- Elliott, S. & Davis, J. (2017). Moving forward from the margins: Education for sustainability in Australian early childhood contexts. In G. Reis & J. Scott (Eds). *International perspectives on the theory and practice of environmental education: A reader*. Springer.
- Elliott, S. & McCrea, N. (2015). Gaps and challenges informing professional learning about early childhood education for sustainability. *The Social Educator*, 33(3), 17-28.
- Elliott, S., McCrea, N., Newsome, L., & Gaul, J. (2016). *Examining environmental education in NSW early childhood education services: A literature review with findings from the field*. NSW Office of Environment & Heritage Environmental Trust <http://www.environment.nsw.gov.au/grants/dissemination.htm>
- Gilbert, J., Fuller, M., Palmer, S., & Rose, J. (2014). Early childhood education for sustainability in the United Kingdom: Generating professional capital. In J. Davis & S. Elliott (Eds.). *Research in early childhood education for sustainability: International perspectives and provocations* (pp. 294-308). Routledge.
- Heggen, M. P. (2016). Education for sustainable development in Norway. In J. Siraj-Blatchford, C. Mogharreban, & E. Park (Eds.). *International research on education for sustainable development in early childhood* (pp. 91-102). Springer.
- Hill, A., Nailon, D., Getenet, S., & McCrea, N. (2014). Exploring how adults who work with young children conceptualise sustainability and describe their practice Initiatives. *Australasian Journal of Early Childhood*, 39(3), 14-22. DOI: [10.1177/183693911403900303](https://doi.org/10.1177/183693911403900303)
- Inoue, M., O’Gorman, L. & Davis, J. (2016). Investigating early childhood teachers’ understandings of and practices in education for sustainability in Queensland: A Japan-Australia research collaboration. *Australian Journal of Environmental Education*, 32(2), 174-191. DOI: <https://doi.org/10.1017/ae.2016.4>
- Inoue, M., Elliott, S., Mitsuhashi, M., & Kido, H. (2019). Nature-based early childhood activities as environmental education? A review of Japanese and Australian perspectives. *The Japanese Society of Environmental Education*, 28(4), 21-28.
- Kuzich, S., Taylor, E. & Taylor, P.C. (2015). When policy and infrastructure provisions are exemplary but still insufficient: paradoxes affecting education for sustainability (EfS) in a custom-designed sustainability school. *Journal of Education for Sustainable Development*, 9(2), 179-195. <https://doi.org/10.1177/0973408215588252>
- Li, M., Zhang, Y., Yuan, L., & Birkeland, A. (2019). A critical analysis of education for sustainability in early childhood curriculum documents in China and Norway. *ECNU Review of Education*, 2(4), 441-457. <https://doi.org/10.1177/2096531119893483>
- Mensah, J. (2019) Sustainable development: Meaning, history, principles, pillars, and implications for human action: Literature review. *Cogent Social Sciences*, 5(1), 1653531. <https://10.1080/23311886.2019.1653531>
- Ministerial Council on Education, Employment, Training and Youth Affairs. (2008). *Melbourne declaration on educational goals for young Australians*. http://www.curriculum.edu.au/verve/_resources/National_Declaration_on_the_Educational_Goals_for_Young_Australians.pdf

- New Zealand Education Council. (2017). *Our code, our standards*. <https://teachingcouncil.nz/assets/Files/Code-and-Standards/Our-Code-Our-Standards.pdf>
- New Zealand Ministry of Education. (2017). *Te Whāriki early childhood curriculum*. <https://education.govt.nz/assets/Documents/Early-Childhood/ELS-Te-Whariki-Early-Childhood-Curriculum-ENG-Web.pdf>
- Norwegian Ministry of Education and Research. (2017). *Norwegian framework plan for ECE*. <https://www.udir.no/globalassets/filer/barnehage/rammeplan/framework-plan-for-kindergartens2-2017.pdf>
- Paoli, D., & Addeo, F. (2019). Assessing SDG's: A methodology to measure sustainability. *Athens Journal of Social Sciences*, 6(3), 229-250. <https://doi.org/10.30958/ajss.6-3-4>
- Productivity Commission (2014) *Childcare and early childhood learning: Productivity Commission inquiry report, Volume 2*. Productivity Commission. www.pc.gov.au/inquiries/completed/childcare/report
- Samuelsson, I., & Katz, L. (2008). *The contribution of early childhood education to a sustainable society*. https://www.researchgate.net/publication/265435095_The_Contribution_of_Early_Childhood_Education_to_a_Sustainable_Society
- Smithsonian (2020). *What is the Anthropocene?* <https://www.smithsonianmag.com/videos/category/science/what-is-the-anthropocene/>
- Steffen, W., Crutzen, P. J. & McNeill, J. R. (2007). The Anthropocene: Are humans now overwhelming the great forces of nature? *Ambio*. 36(8), 614-621.
- United Nations International Children's Emergency Fund [UNICEF]. (1989) *The Convention on the rights of the child*. <https://www.unicef.org/child-rights-convention>
- United Nations Education, Scientific and Cultural Organisation [UNESCO] (2015). *Sustainable development goals*. <https://en.unesco.org/sustainabledevelopmentgoals>
- United Nations Education, Scientific and Cultural Organisation [UNESCO]. (2017). *Education for sustainable development goals: Learning objectives*. <https://unesdoc.unesco.org/ark:/48223/pf0000247444>
- United Nations Education, Scientific and Cultural Organisation [UNESCO]. (2019). *Sustainable development*. <https://en.unesco.org/themes/education-sustainable-development/what-is-esd/sd>
- United Nations Education, Scientific and Cultural Organisation [UNESCO]. (2020). *Sustainable development goals: Take action on the goals*. <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

Dr. Lisa Sonter is President of the Queensland Early Childhood Sustainability Network (QECSN) and can be reached at ljasonter@gmail.com

Sharon Kemp is an early childhood teacher in Brisbane, and Secretary of QECSN. She can be reached at sharonisfree13@gmail.com