Early Childhood Studies as a site for Education for Sustainability, Eco Literacy and Critical Pedagogy

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Abstract

This PhD by published work is a submission of a body of work completed within a period of four years. This narrative aims to offer a coherent context for my PhD journey, however, it also acknowledges that my ideologies, my epistemology leaks throughout this portfolio of evidence. The questions I have posed, the theorists I have chosen, what I report, and how I report my evidence are all 'saturated by the leakages of mischievous lubricant and debris of autobiographical hauntings' (Derrida cited in Boyne 1990, 1). Whilst proof is *absolute* and *incontestable*, the evidence presented in the portfolio allows for personal and professional subjectivities, what Bray et al, (2000) refer to as 'meaning making' through 'cycles of action and reflection' (90). The theme of Education for Sustainability is woven throughout the publications, and whilst there is a swathe of literature related to ESD, this body of work is unique in its attempt to acknowledge the synthesis between learning for ESD within higher education and the pedagogies associated with early childhood education and the developing research area of Early Childhood Education for Sustainability.

The peer reviewed publications have been circulated within various communities of practice bringing the research area of Early Childhood Education for Sustainability into the higher education arena. With the 2030 agenda validating the importance of new ways of thinking and doing (UNESCO, 2015), the publications note the need for reflexivity which is reinforced by an uncertainty of the future (Jickling and Sterling, 2017). Core texts have been written and accessed by students on a BA (Hons) Early Childhood Studies programme and publications capture place based and project based pedagogies to enable critical thinking as 'an agential and political act' (Hunter et al 2018, 50) and in terms of sustainability education, the critical thinking must activate students to reach beyond a skill set of reason and argument, to a more intentional uncovering of taken for granted understandings and 'ways of knowing' the world. Methodological considerations include conversational and discourse analytic methods which are inherently reflexive (Flick, 2011), Participatory action research and critical and visual methodologies are also represented. The sustainable practices noted in the publications may also provoke early childhood students and educators to *think and act differently*, not only about sustainability

concerns, but also early childhood pedagogy and philosophy and critical pedagogies within higher education.

Autobiographical context for the portfolio of evidence

Clarity with acronyms; Early Childhood Education and Care (ECEC); Early Childhood Education *for* Sustainability (ECEfS); Education *for* Sustainability (EfS), Education for Sustainable Development (ESD); Children's Workforce Development Council (CWDC); Early Years Professional Status (EYPS), Post Graduate Certificate in Education (PGCE); Higher Education (HE); Initial Teacher Education (ITE); Manchester Metropolitan University (MMU); UN Decade of Education for Sustainable Development (DESD); Sustainable Development Goals (SDG's); Teacher Education for Equity and Sustainability (TEESNet); Transnational Dialogues (TND);

Having worked in various jobs while my children were young, I made the decision in 1997 to work with young children within the context of Early Childhood Education and Care (ECEC). In 2002, the political climate was imbued with a demonstrable intention to support the ECEC workforce to study and learn at the same time, through the delivery of funded, part time Foundation degrees. I completed the Foundation degree and entered the third year of the BA (Hons) Early Childhood Studies degree at Manchester Metropolitan University (MMU), where approaches to teaching and learning supported my personal development and my academic curiosity. Interestingly, I was always fascinated by the idea of social construction (Burr, 2015, Marr, 2016) and my position as a *mature* student within the widening participation agenda. When my final year research dissertation was delivered to the funding body as *evidence* of the quality of the Foundation degree programme, I also became cognisant of the relentless battles to raise the profile of ECEC with the constant changes to policy, and funding which are always driven by political agendas.

At the time of my graduation in 2005, there were continued calls for radical changes to the ECEC workforce, with the Children's Workforce Development Council (CWDC) (a government quango, introduced in 2005 charged with the delivery of the *Every Child Matters* programme of reform), tasked with the delivery of the Early Years Professional Status (EYPS). This status was introduced in a haze of

ambiguous messages, with an initial assertion of parity with qualified teachers to support the development of a graduate lead workforce. I completed the status with MMU as the chosen institution to run the pilot phase in 2007.

Choosing EYPS above a traditional PGCE was a personal choice which was founded on an interpretation (and belief) that leadership and social pedagogy (akin to work in Scandinavian countries like Denmark and Sweden), was at the intersection of health, education and social care (Fairchild, 2012). In equal measure, the EYPS was signalled with *transformation* and *change agency* at the heart of practice and whilst I wasn't wholly aware of this at the time, this tangible connection to Education for Sustainable Development (ESD) became a visible presence for my future professional development and subsequent publications. Change is inherent within Education for sustainable development which is focused on making changes through the reorientation of frames of mind or frames of reference (Mezirow, 2003, Davis and Elliot, 2014, Tillmanns, 2017) thus, the consideration of educational programmes (like ECS) intentionally invite an engagement with processes of change towards sustainable futures (Hunter et al, 2018). The goals of the UN Decade of Education for Sustainability (DESD, 2005-2014) and the current Sustainable Development Goals (UNESCO, 2015-2030), focus on creating change that integrates the socio cultural, environmental and economic dimensions of sustainability recognised by the Brundtland World Commission in 1987. Critiques of this well - versed discourse '...meets the needs of the present without compromising the ability of future generations to meet their own needs' (Brundtland, 1987, 43), argue that this *need* focused perspective limits the idea of agency (Sudhir and Sen, 2000) and the concept of *need* remains 'overtly focused on development within existing capitalist systems' (Hunter et al, 2018, 16). Indeed, the twenty-first century has been characterised by rapid change and global uncertainty (Hunter et al, 2018) and it is likely that the needs of future generations will differ from those of the present generation (Redclift, 2006).

I began my career in Higher Education (HE) at MMU in 2007, as an associate lecturer on the Foundation Degree in Early Years Practice, followed by a full -time post as a senior lecturer working across the EYPS programme, the Foundation

degree and the final year of the Early Childhood Studies degree. Documenting my professional and research journey has also helped me to see things from different perspectives and to acknowledge the emergence of my ethical self in relation to my research and practice choices. Recollections of my time as an EYPS lead assessor are tainted with the immense and overriding technical aspect of managing the intensive monitoring and assessing of *candidates* (CWDC language). EYPS was ridden with controversy from its inception and Osgood (2009) cites a CWDC construction of *becoming* an EYP, with all graduates going through the same assessment process, which foregrounds an emphasis on the ability for candidates to meet a set of prescribed competencies. She argues that these competencies are 'constructed as objective because it is deemed measurable, quantifiable and standardised' what she shrouded in Foucauldian terms as 'competent technicians' (Osgood, 2009, 745).

In 2009, I embarked on the PGCert in Academic Practice at MMU and here I was introduced to the philosophical leanings of a collaborative Inquiry approach (Bray et al, 2000), where inquiry -based learning helped me to further appreciate a 'tolerance of ambiguity' (Landeen, Jewiss, Vajoczki, & Vine, 2013, 279) as appropriate for learning for an unknown future. My tutor, Alison Prowse (2014) cited my work extensively in her review of the principles of the CI approach and the emotional aspect of learning which she noted as 'existing on a continuum' (292). Global Sustainable Development Goal 4 (UNESCO, 2015) seeks a global response to "*ensure inclusive and equitable quality education and promote lifelong learning opportunities for all*'. Among the seven indicators, 4.7 states, "By 2030, ensure all learners acquire the knowledge and skills needed to promote sustainable development". My research profile captures early childhood as a complex but foundational phase for lifelong learning (Pramling Samuelsson & Kaga, 2008) with students learning to embrace community projects as part of their university assemblage.

Completion of the MA in Academic Practice coincided with a transition to Liverpool John Moores University as a senior lecturer in Education and Early Childhood Studies and my subsequent role of programme leader for ECS in 2012. The

revalidation of all programmes within LJMU offered the opportunity to revisit the updated subject benchmark statement for ECS (QAA, 2014) and in 2015/16, I led the revalidation with recognition of the need for a strong critical awareness of the current interdisciplinary academic and professional challenges of Early Childhood Studies. The programme was developed with global relevance and cognisance of the UN Decade of Education for Sustainable Development (DESD, 2005-2014) and the Sustainable Development Goals (SDG's, UNESCO, 2015-2030) while remaining focused on local policy contexts and relatable pedagogies for those choosing to work with babies, young children and their families. My publications focused on harnessing the principles noted in the benchmark statement for Early Childhood Studies (QAA, 2014) with recognition of the ecological context, children as active participants and the fostering of a critical evaluation of the contested and changing nature of the concept of childhood, ethical principles and children's rights (60). The emergence of the *Understanding* series with Routledge resulted in the publication of two books, *Understanding* Early Years Practice and *Understanding* Education for Sustainability, which provided students with a number of associated research - based case studies, exemplifying the breadth of ECE curricula frameworks in England, Northern Ireland, Scotland and Wales. This conscious transition from an England centric perspective has acted as a bridge for the tacit acceptance of statutory frameworks and taken for granted assumptions or 'doxa' (Bourdieu, 1991) about work with young children, their families and communities.

Chronological description and development of the work

Clarity with acronyms; Early Childhood Education (ECE) Early Childhood Education *for* Sustainability (ECEfS); Education *for* Sustainability (EfS), Education for Sustainable Development (ESD); Organisation Mondiale Pour L'Education Prescolaire (OMEP); Transnational Dialogues (TND); Early Years Foundation Stage (EYFS); Massachusetts Institute of technology (MIT). Liverpool John Moores University (LJMU).

Over a decade ago in 2007 Iliško, argued that tutors in higher education need to act as transformative agents for sustainability, who in turn treat students as active agents who recognise young children as capable and agentic, with action -based pedagogies related to children's interests (Davis, 2014). With this in mind, this section outlines the connectivity of my publications within the three key themes related to Education for Sustainability, Eco literacy and critical pedagogies in higher education. A rhizomatic (Deleuze & Guatarri, 1987) view of the development of the publications is presented as a metaphorical way of offering a contextualised synthesis of the PhD submission.

Early childhood education (ECE) within tertiary education has proactively responded to calls to realign education towards more sustainable futures, with Early Childhood Education for Sustainability (ECEfS) developing rapidly as a field of research and practice (publication 2; Emery et al, 2017). Since 2015, I have been involved in an international multi-university initiative that has been a key impetus for ECEfS since 2010. The *Transnational Dialogues in Research in Early Childhood Education for Sustainability (TND)* has been a catalyst for my increasing research profile presented within this portfolio for the PhD by publication. The TND group have fostered international collaborations and conversations about ECEfS and remains committed to deliberate intercultural encounters 'acquiring increased awareness of subjective cultural context (world view), including [my] own, and developing greater ability to interact sensitively and competently across cultural contexts as both an immediate and long-term effect of exchange' (Bennett 2009, 2). Members have networked, socialized and worked together to develop

transnational research that builds organically on individual member perspectives, reflecting distinctive personalities, philosophical ideas, and cultural awareness. This *awareness* also supported the development of a 'meta awareness' (Ryan and Louie, 2007) about the different experiences encountered by my student body. These dynamic processes give tacit reference to Vygotskian theory (early career, mid and established researchers scaffold each other*),* exemplified through the collaborative paper (publication 2; Emery et al, 2017) which was awarded the accolade of best paper at the 3rd World Symposium on Sustainable Development at Universities (WSSD) at Massachusetts Institute of technology (MIT) Cambridge in September 2016.

The publication of the first book in the *Understanding* series resulted in two co-authored chapters related to the English Early Years Foundation Stage (DfE, 2014), a discursive *conversation* between the home nations and full coediting of the book (publication 1; Boyd and Hirst, 2016) which was the first text to bring the curriculum frameworks for each country together in one publication and this text has become an integral component within ECS teaching. TND members talk about learning intergenerationally and membership of this micro academic community has provided a proactive and enabling *space* for collaborations in the competitive world of academia, where academics need to 'figure ways to join forces to reconstitute refuges' (Haraway, 2015, 160). Productive international research can be rewarding and challenging and as a TND participant, I engaged in space based online collaborations using online platforms like Skype, Dropbox and Google docs with a rhizomorphous (Deleuze and Guatarri, 1987) contribution to the paper, Weldemariam et al, (publication 7;2017). Here, my experience of the numerous iterations of the English Early Years Foundation Stage (DCSF, 2008, DfE, 2012, 2014, 2017) supported an exploration of Education for Sustainability through discourse analysis of the language use within the statutory framework. Jickling and Sterling (2017) assert that plasticity in the term *sustainability* that can 'render it toothless', (2), however, their counter argument regarding the merits of this plasticity resonate with the deep and critical thinking needed to question seemingly benign state interventions in Early Childhood Education and Care (ECEC) with ECS students.

In essence, using an Education for sustainability lens, students are encouraged to recognise the ecological context noted in the benchmark statement for ECS (QAA, 2014) where the 'discontinuities are seen to be as important as continuities' (Barron, 2005, 202) in a model of life -long learning (UNESCO, SDG 4) where the 'old certainties' (Barron, 2005, 202) related to linear and universal child development are replaced with a disruption of dominant assumptions about the purpose of early childhood education.

My interest in the construction of students as learners within higher education (Marr, 2016) culminated in the introduction of Pecha Kucha, as a visual methodology for formative dialogue (publication 4; Hirst, 2016) and acknowledged the need to reconceptualise pedagogic literacy within higher education. Jickling and Sterling (2017) argue that many ESD initiatives follow what they term 'instrumentalist ideologies' (3) and they argue for a new vision for sustainability education rather than 'adding new bits to the curriculum' (2017, 2). My contention is that the use of visual imagery supported students to be active and agentic in relation to the formation of their own subjectivities, developing ideas, new perspectives and alternative ways of considering an issue, thus, this active learning helped students to construct an understanding of materials as active agents rather than passive recipients of information (Sambell, Brown and Graham, 2017). As a modern and civic university, LJMU prides itself on its widening participation agenda with goals to promote awareness of environmental sustainability and principles (amongst staff and students), characterised within an environmental paradigm with an invitation to complete a 'rubbish quiz' (LJMU policy, 2016, 2). A year after the publication of the UNESCO Global Monitoring report (UNESCO, 2016), Jickling and Sterling (2017) argued that it fails to recognise the nature and depth of change required in educational practice to meet the aspirational creation of *sustainable futures for all* which, they argue, requires a challenge regarding educational thinking and purpose. Whilst the LJMU sustainability policy provides a tacit reference to pedagogies in HE with an assertion to 'review and inform the process of embedding sustainability in the taught curriculum' (LJMU policy, 2016, 2), the 'much needed integration of sustainability related pedagogies in higher education'

are less visible than 'campus greening and research initiatives' (Tillsmanns, 2017, 31).

My contribution to an original and creative text using film to understand childhood and practice (publication 5; Braithwaite and Hirst, 2018) looked at the complex journey taken by learners within the context of higher education and put the film *Educating Rita* to work to discuss the university environment as a critical space to support the development of flexible mind sets. A fortuitous choice of workshop attendance at MIT resulted in further dialogue with academics from Dublin City University related to research with students using visual cues to 'disrupt and transform anthropocentric mindsets' (Tillmanns & Holland, 2017) using Mezirow's (2003) theories around transformative learning. The idea of education as transformational was further captured when I was invited to join the Teacher Education for Equity and Sustainability Network (TEESNet) and presented at their conference in September 2017, thus the theme of visual methodologies was further explored in the paper citing Early Childhood Studies as a site for provocation, collaboration and Inquiry (publication 12; Hirst, 2018) with the contention that sustainability can be seen as a frame of mind, inspired by the values and principles of some of the pioneers of early childhood education.

As a founding member of the project team developing the framework for Early Childhood Education for Sustainability (Boyd, Hirst and McNeill, 2017), my sole authored chapter in the *Understanding* Sustainability book (publication 6; Hirst, 2018) referred to the status of education for Sustainability in England and captured the research process and implementation of the framework into the Eco Schools website. This implementation was also captured in the *Visualising the journey* paper, (publication 3; Boyd, Hirst and Nikiforidou, 2017) presented at an OMEP conference at Canterbury Christchurch university in May 2016 and again at the tenth anniversary of the launch of the Cambridge Primary review in November 2017. The latter conference focused on primary education and posed the question, 'what is and what might be?' and included sustainability as one of the eight priorities of the trust with a focus on embedding sustainability and global

citizenship in educational policy and practice, giving practical meaning to the 2015 UN agenda of education for sustainable development. At this time, the framework was intended to highlight early childhood as a key period to foster caring attitudes and empathy vis-à-vis the natural environment, learning about gender inequalities, equal rights and responsibilities and examples of practice build on the original pillars within the Brundtland report , Our Common Future,(1987) which were further developed by OMEP as the 7 R's, respect, reflect, rethink, reuse, reduce, recycle and redistribute (Samuelsson and Kaga, 2008, Engdahl, 2015). The framework won an award for the UK at the 69th World OMEP conference (2017), a world organization promoting Early Childhood Education, and is now included in the OMEP contribution to UNESCO's Global Action Program. Following the end of the decade for education for sustainable development (DESD), UNESCO endorsed the Global Action Programme (GAP) to foster *actions* in ESD. The Global Action Programme highlighted a priority to 'transform learning and training environments', focusing on networking with the broader community (UNESCO, 2014a, 18). The framework has developed organically with the current adoption by the Foundation Years website, where students and early childhood educators in England can use the framework as a tool for exploration of the pillars of Sustainable Development, Social/cultural, Economic and Environmental (Brundtland, 1987) and the Prime and Specific areas of the EYFS, with an emphasis on critical thinking through the characteristics of effective learning, (DfE, 2017). The framework also connects the nine Eco school themes within Eco Schools England and offers an antidote to the dominant discourse in England which often focuses on the social relevance of education (Bourn et al, 2016) through a deficit lens, for example, global terrorism and attempts to prevent radicalisation and the promotion of 'Fundamental British Values' with a narrow interpretation of 'values' (Bourn et al, 2016, 18). The framework and associated publications take the field forward by contributing a more holistic exploration of British values within Early Childhood Education whilst presenting opportunities to 'consider respect, tolerance and social justice rather than a narrow interpretation of Britishness' (Bourn et al, 2016, 18).

The framework also connects place -based learning and my research publications

are a direct result of research with parents, early childhood educators, children and students, including using the coast line as a contextualised place for critical inquiry. The initial findings from ethnographic research with pre-school practitioners were discussed at the World Symposium on Sustainability Science at MMU in April 2017, (publication 8; Boyd & Hirst, 2018), and was extended to capture the use of waterways as pedagogical sites, (publication 9; Hirst, Boyd, Browder and Emery, 2018) and the use of documentation within Beach Kindy pedagogy (publication 10; Boyd and Hirst, 2018), and the action research related to ESD projects with students on the ECS programme (publication 11; Hirst, 2018). The ECEfS framework is currently embedded as a resource tool for student critique built into module design and assessment (Hirst, forthcoming) with a disparate range of community projects related to education for sustainability within early childhood education.

The presented publications are intended as conversations between, in and across each other, the author and the reader; to be 'discursive plateaus' or 'assemblages of meaning that inform each other and do not stand alone' (Honan 2007, 536), for example, the research based case studies and approaches noted in the *Understanding* sustainability publication (publication 6; Hirst, 2018, Tinney and Hirst, 2018) reflect the student bug habitat project (publication 11; Hirst, 2018) and whole school approaches to EfS with examples taken from regular community engagement between ECS and early childhood educators. In this rhizomatic model, the framework is not driven by predefined input from the founding team as experts but is constructed and negotiated as part of the *curriculum* in a broad sense with its own 'lines of flight' (Deleuze & Guatarri, 1987). The publications noted below offer an outward facing representation of my work in the area of Education for Sustainability within Early Childhood Education and includes research with students from the subject area, Early Childhood Studies as a natural bedfellow for learning about the sustainable development goals in a holistic way. Details of the relative contribution for co -authored publications can be found in Appendix 3.

Table 1: Refereed publications and connections to key themes

Publication Number	Publication Title	Peer Review
1	Boyd, D. and Hirst, N. (2016) *Understanding Early Years Education across the UK: Comparing practice in England, Northern Ireland, Scotland and Wales.* London. Routledge. Boyd, D. and Hirst, N. (2016) A Perspective from England In. *Understanding Early Years Education across the UK: Comparing practice in England, Northern Ireland, Scotland and Wales.* London. Routledge. Pp 1-59. Boyd, D. Hirst, N. Walsh, G. Warden, C. McNair, L. Prowle, A. Davidge-Smith, L. (2016) A Conversation between the home nations. In. *Understanding Early Years Education across the UK: Comparing practice in England, Northern Ireland, Scotland and Wales.* London. Routledge. Pp 205-229.	Book reviews via Routledge publishers and full coediting of book (Boyd and Hirst). **Theme 3** Critical Pedagogy

2	Emery, S., Davis, J.M., Sageidet, B.M., Hirst, N., Boyd, D., Browder, J. (2017) Transnational Dialogues for sustainability research in early childhood education: A model for building capacity for ESD in universities? *Handbook of Theory and Practice of Sustainable Development in Higher Education. Vol 2. Paper 60. pp 143-156.*	Peer-reviewed as part of the world´s leading, peer-reviewed series on sustainability- details can be seen at: http://www.springer.com/series/13384 **Theme 1** Education for Sustainability **Theme 2** Eco Literacy **Theme 3** Critical Pedagogy
3	Boyd, D. Hirst, N. and Nikiforidou, Z. (2017) Embedding the EYFS into the Eco-schools Programme; Visualising the journey. OMEP UK www.omep.org.uk	Peer reviewed and selected by team of reviewers from OMEP UK. **Theme 1** Education for Sustainability **Theme 2** Eco Literacy **Theme 3** Critical Pedagogy

4	Hirst, (2016) Using Pecha Kucha as formative assessment in two undergraduate modules. (Re) conceptualising 'the right lines'. *Practitioner Research In Higher Education Special Assessment Issue Copyright © 2016 University of Cumbria* Vol 10 (1) pages 140-155.	Full peer review process according to journal criteria. **Theme 3** Critical Pedagogy
5	Braithwaite, J. and Hirst, N. (2018) Educating Rita; The Journey to Graduateness In. Aitken, S. *Using Film to Understand Childhood and Practice.* London; Bloomsbury Publishing. pp.11-27.	Peer reviewed and edited by Bloomsbury publisher reviews and book editor. **Theme 3** Critical Pedagogy
6	Boyd, D. Hirst, N. and Siraj-Blatchford, J. (2018) *Understanding Sustainability in Early Childhood Education across the UK: Case Studies and Approaches.* London: Routledge. Hirst (2016) Early Childhood Education for Sustainability within England. In. Boyd, D. Hirst, N. and Siraj-Blatchford, J. (2018) *Understanding*	Book reviews via Routledge publishers and full coediting of book (Boyd, Hirst and Siraj-Blachford). **Theme 1** Education for Sustainability **Theme 2** Eco Literacy **Theme 3**

	Sustainability in Early Childhood Education across the UK: Case Studies and Approaches. London: Routledge. Pp1-34. Tinney, G. and Hirst, N. (2018) Early Childhood Education for Sustainability within Wales. In. Boyd, D. Hirst, N. and Siraj-Blatchford, J. (2018) *Understanding Sustainability in Early Childhood Education across the UK: Case Studies and Approaches.* London: Routledge. Pp104-138.	Critical Pedagogy
7	Weldemariam, K., Boyd, D., Hirst, N., Sageidet, B.M., Browder, J., Grogan, L., Hughes, F. (2017) A Critical Analysis of Concepts Associated with Sustainability in Early Childhood Curriculum Frameworks Across Five National Contexts. *International Journal of Early Childhood.* Vol 49, No 3. pp 333-351.	Full peer review process according to journal criteria. **Theme 1** Education for Sustainability **Theme 2** Eco Literacy **Theme 3** Critical Pedagogy
8	Boyd, D. and Hirst, N. (2018) Recognising Beach Kindy as a	Peer-reviewed as part of the world´s leading,

	Pedagogical Approach for Critical Agents of Change Within Early Childhood Education. *Handbook of Sustainability Science and Research.* Springer International Publishing. pp 877-892.	peer-reviewed series on sustainability- details can be seen at: http://www.springer.com/series/13384 **Theme 1** Education for Sustainability **Theme 2** Eco Literacy **Theme 3** Critical Pedagogy
9	Hirst, N, Boyd, D., Browder, J. and Emery, S. (2018) Watery Webs of Interconnectedness: Waterways as Pedagogical Sites. *Croatian Journal of Education*- Hrvatski Casopis za Odgoj i obrazovanje, 19 (3). ISSN 1848-5189.	Full peer review according to journal criteria and chosen for the special edition of the Croatian journal of Education. **Theme 1** Education for Sustainability **Theme 2** Eco Literacy **Theme 3** Critical Pedagogy
10	Boyd, D. and Hirst, N. (2018) Documentation as a Listening	Full peer review process according to OMEP and included in the

	Strategy; Using Beach Kindy as a Pedagogical Place. OMEP Online http://omep.hr/assets/zbornik.pdf [Accessed February 2018]	conference proceedings for the 69th OMEP conference 2017. **Theme 1** Education for Sustainability **Theme 2** Eco Literacy **Theme 3** Critical Pedagogy
11	Hirst, N. (2018) Education for Sustainability within Early Childhood Studies; Collaboration and inquiry through projects with children. *Education 3-13 International Journal of Primary, Elementary and Early Years Education. Vol, 47*	Full peer review process according to journal criteria **Theme 1** Education for Sustainability **Theme 2** Eco Literacy **Theme 3** Critical Pedagogy
12	Hirst, N. (2018) Education for Sustainability in Higher Education; Early Childhood Studies as a site for provocation, collaboration and	Full peer review process according to journal criteria **Theme 1**

	inquiry. *Education 3-13 International Journal of Primary, Elementary and Early Years Education. Vol,47*	Education for Sustainability **Theme 2** Eco Literacy **Theme 3** Critical Pedagogy

Main methodological approaches

The purpose of this section is to offer a contextual framework for the general methodological considerations which guided the publications. The methodology for each publication is not discussed here in any depth as this can be found in the presented publications, thus, the portfolio aims to capture eclectic, multimodal and interconnected outputs through book chapters with research case studies, collaborative and individual research papers with a common frame of reference. The focus on Education for sustainable development and the implementation of early childhood education for sustainability is part of a mindful shift towards a more critical praxis (Friere, 2009) with young children, families, communities and students in higher education.

The research case studies presented in Boyd and Hirst (publication 1; 2016), Boyd, Hirst and Siraj Blatchford (publication 6; 2018), Hirst, (publication 11; 2018) and Tinney and Hirst (publication 6; 2018), offer concrete and context specific snapshots of research projects, observed practice and include theoretical ideas to act as a platform for further dialogue around tensions and challenges. Hitchcock and Hughes (1995, cited in Cohen et al, 2011) suggest that case studies are distinguished less by the methodologies they employ than by the subjects of their inquiry, and they argue that there is a resonance between case studies and interpretative methodologies. Cohen et al (2011) suggest possible advantages of case studies with their embeddedness in social truths which can represent some of the discrepancies or conflicts between viewpoints held by participants or rhetoric found within policy documents, and as a consequence, they can offer support to

alternative interpretations. The case studies in Hirst (publication 11; 2018) and Tinney and Hirst (publication 6; 2018) act as relevant areas of interest related to early childhood education for sustainability and offer students 'unique examples of real people in real situations, enabling readers to understand how ideas and abstract principles can fit together' (289). They also strive to portray lived experiences and offer thick descriptions which are noted by Cathy Charmaz (2006, 2014) in her constructivist vision of grounded theory.

The research methodologies developed with an organic coherence within various communities of practice (Lave and Wenger, 1991), including the Transnational Dialogues in Early Childhood Education *for* Sustainability (TND), The Teacher Education for Equity and Sustainability Network (TEESNet), The Foundation Years, OMEP and the UK Early Childhood Studies Degree network. Whilst Lave and Wenger's ideas were developed from research with apprentices, a critical recognition of communities of practice is appreciated as I engaged with colleagues with different levels of skills, understanding and behaviours.

Since the conception of the TND, transnational and intercultural dialogues have flourished between colleagues interested in ECEfS. Members from different cultural and diverse backgrounds have embraced research within this area with enthusiasm and individual and collaborative commitment. The philosophical and methodological basis of collaborative inquiry as defined by Bray et al, (2000), includes a non-hierarchical and democratic approach underpinned by the firm idea of research *with,* rather than *on* others and 'a desire to understand the "other"' (Tillmanns, 207, 59), a premise embraced in this research portfolio. The TND has also been a catalyst for the focus of the revalidation of the BA (Hons) Early Childhood Studies degree at Liverpool John Moores University (and Norway), with explicit reference to the sustainable development goals (SDG's) and Early Childhood Education for Sustainability.

The UNESCO Global Monitoring Report (UNESCO, 2016) cites a global need for '[the creation] of sustainable futures for all' and Jickling and Sterling (2017) argue that

this report fails to recognise the nature and depth of change required in educational practice to meet the aspirations of the title. They assert the need for a disruption of dominant assumptions in educational thinking and purpose so that a cultural shift toward practice that is life affirming, relational and truly transformational can take root, and this, they argue, can be realised through the 'rebel teacher' and through 'being differently' in the world (11). The analysis of sustainability concepts in Early Childhood Curriculum Frameworks across five countries (publication 7; Weldemariam et al, 2017) was guided by critical collaborative inquiry and a cross national dialogue using content analysis to interpret explicit and implicit concepts related to education for sustainability within the content of the statutory English Early Years Foundation Stage (DfE,2017). Here, the idea of early childhood education and environmental stewardship (Taylor, 2017) was broadened to consider how young children are viewed and how language in statutory documents like the Early Years Foundation Stage (DfE, 2017) offer a persuasive (developmental) regime of truth (Foucault, 1977). Cohen et al (2011) define this analysis of a text as focusing on language which is intended to be read, interpreted and understood, in this case, by early childhood educators, parents and students. They further argue that this methodology 'interrogates in a summary form' (2011, 564) and texts have no objective reader independent qualities, rather they have multiple meanings and interpretative qualities noted by Flick (2011) as an empirical method for 'inter-subjectively describing the formal features' (133). This conscious methodological approach was a scaffold for further critical reflection on language assumptions and theoretical and methodological applications to projects with young children, their families and communities and offered ECS students' opportunities to consider the interfaces between advocacy for play in nature and 'early childhood educators' socially-constructed meanings of sustainability and education for sustainability in early childhood settings' (Elliot, 2014, 128). In essence, Elliot asks if sustainability can be culturally embedded or a frame of mind (Bonnett, 2002, Davis, 2014) if educators' early childhood philosophies, pedagogies and images of children do not align with contemporary thinking and are not aligned with the principles of education for sustainability. For students on the ECS degree, studying the language presented within the EYFS (DfE,

2017) offers a key methodological pedagogical and ethical tool to avoid colluding with statutory 'guidance' which often positions children as passive learners. The removal of earlier guidance from Development Matters (Early Education 2012) was replaced with Early Years Outcomes (DfE,2013) with a sole focus on outcomes and goals and a lack of recognition of positive relationships and enabling environments. The dispositions for learning, referred to as the Characteristics of Effective Learning, characterised as *playing and exploring*, *active learning*, and *creating and thinking critically* were relegated to a brief synopsis in the current guidance (DfE, 2017).

The action research projects with young children, early childhood educators and students (publication 8; Boyd and Hirst, 2018), Hirst et al (publication 9; 2018) and Hirst (publication 11; 2018) were employed to revision early childhood education alongside the principles of education for sustainability with 'different stories to tell' (Moss, 2013) about participatory and critical educational research which is intimately connected to my epistemological and ontological position regarding research with people. The portfolio of publications embrace the multiplicity in qualitative research and intentionally move across different theoretical ideas in order to provoke, open up spaces and encourage 'nomadic' thinking (Deleuze and Guatarri, 1987, Deleuze, 1993), between the principles related to Education for sustainability and rhizomatic principles which help to deterritorise current understanding and reterritorise new understandings (Tillmanns 2017, 32).
As the fourth daughter of an Italian father, I am also drawn to the world -renowned Reggio Emilia philosophy and practice and this is reflected in the research undertaken with my students. Rinaldi (2006) considers teachers as researchers and how 'personal and professional development and education is something we construct ourselves in relation to others, based on values that are chosen, shared and constructed together' and this she argues, results in us 'living and living ourselves in a permanent state of research' (137). In Reggio, the recognition of a need for uncertainty and 'otherness' connects to reflexivity in the research approaches and bridges epistemological considerations with methods (Moss, 2013). Indeed, the methodological approaches of critical participatory action research offer salient examples of the visibility of the principles of education for

sustainability identified in significant national and international documentation such as the 2030 agenda for sustainable development (UNESCO, 2015) including critical thinking, holistic pedagogical approaches and participatory partnerships for change/transformation and systems thinking.

Using visual methodologies was a conscious choice based on the need for developing dialogic pedagogical approaches within the ECS degree (publication 4; Hirst, 2016, publication 5; Braithwaite and Hirst, 2018, publication 11; Hirst, 2018) in a higher education context and the juxtaposition of critical action research and conversation analysis served to facilitate deliberate engagement with formative assessment and the formulation of critical thinking and reflection, to an intentional unveiling of taken for granted assumptions about the world (and their learning). As Hunter et al (2018) argue, 'critical thinking becomes more than how to win a debate as it becomes central in identifying power relations in everyday life, as well as in national and global discourses' (50). Rose (2016) notes the importance of applying a critical approach to the visualising of images and research methodologies (publication 4; Hirst, 2016, publication 11; Hirst 2018) captured the 'visual economy' (Poole 1997, cited in Rose, 2016, 11) in the mobility of the presented images. Rose (2016) argues that images need to make sense in relation to other things, indeed, 'they carry their own peculiar kinds of visual resistance, recalcitrance, argument, particularity, banality, strangeness or pleasure' (22). In this sense, visual images serve as a catalyst for 'sensing (in an emotive and feeling way) to making sense (in a rational and pragmatic way)' (Hunter et al, 2018, 51). If as Rose (2016) imagines, images themselves have agency, the associated 'critical thinking [can be] an agential and political act' (Hunter et al, 2018, 50).

Evaluation of outputs, originality and critical synthesis

The ambition to embed Education for Sustainable Development (ESD) into the BA (Hons) Early Childhood Studies programme was an attempt to engage students in ESD as an emergent phenomenon (Siraj Blatchford et al, 2017) and was realised in September 2016 with the first iteration of an original and distinct validated programme. This integration takes the field forward by contributing a new

perspective on the messages imbued in the Subject benchmark statement (QAA, 2014) for the programme. The statements, supported by members of the Early Childhood Studies (ECS) degree network community, provide explanations of the defining principles, subject knowledge and threshold standards with explicit reference to the position of an ECS graduate to apply;

A critical analysis of children as active participants, their rights and an anti-bias approach which considers early childhood as a site for democracy, sustainability and social justice [which] underpins and permeates the subject. (QAA, 2014, 8).

ESD has been recognised as an integral element of quality education as defined in the Dakar Framework for Action in 2000 and more recently captured as goal 4 (4.7) in the 2030 agenda for sustainable development (UN, 2015). One of the key challenges for educators is to develop curriculum and pedagogic practices that provide foundations for the development of the interdependent pillars (social, economic and environmental) to encourage what I am calling *ESD through osmosis*. Action points raised in the Gothenburg recommendations (SWEDESD, 2008) illustrated the need to embed ESD into the curriculum (at all levels) to develop approaches to learning through 'collaborations with formal and non -formal educational services and systems, including higher education and curriculum developers' (30) and this is echoed in the Global monitoring report (UNESCO, 2016) which notes the need for *new approaches* and *new resources*. The research captured in this portfolio significantly contributes to the growing body of knowledge by aligning ESD pedagogies in higher education with early childhood pedagogies beyond environmental education.

Thomas (2002) asserts that a sound programme in higher education 'should emerge as a consequence of a well-constructed educational programme and not be, what he terms, 'a gimmicky free -standing initiative' (116) thus, the sustainable development goals are used with students as a vehicle for the development of an eco- literacy which exists not only 'on the page' but also in the practices which surround it (Kress, 2003, 95). The language around sustainability is often considered to be confusing and ubiquitous (Kopnina, 2014) and the visual representation of the

17 sustainable development goals and the associated (169) targets (UNESCO, 2015) have been noted as non- legally binding, encyclopaedic, and challenging in their overwhelming breadth (Easterly, 2015). UNESCO (2015) note that the development of the goals and targets was an inclusive global process however, a much more technical process has produced the global indicators and King (2017) asks whether the aspirations for expanded rights to education (SDG 4) are prone to getting lost in translation. The UN document (2015) also outlines plans to follow up and review the goals and targets using a set of global indicators (King, 2017, 801) and scrutiny of SDG 4 (4.1) posits five descriptors, including *free, equitable, quality, relevant, and effective* with corresponding global indicators reduced to the achievement of a minimum proficiency level in two subjects (reading and mathematics). In a similar vein, SDG 4 (4.2) includes the 'need' to ensure that *all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education.* Whilst the Early Childhood community have generally welcomed the inclusion of ECE, the readiness discourse remains a contentious issue for many (see Moss & Urban, 2017). The global indicators (4.2.1) note a successful outcome as 'percentage of children under 5 years of age who are developmentally on track in health, learning and psychosocial well -being' and (4.2.2) as 'participation rate in organised learning one year before the official primary entry age' (UN, 2016,20). This shift from learning needs in the *World Conference on Education for All* in Jomtien (UNESCO, 1990) captures the inadequacy of merely *accessing*, *participating* or *completing education* (King, 2017). Cuthbert (2005) notes how students' view on education is not fixed, 'but is constructed in relation to learning context' (47) and Jickling and Wals (2008) conceptualize approaches to ESD in higher education with an authoritarian and hierarchical *big brother ESD*, to a *feel good* unchallenging notion of ESD to a more positive model where the juxtaposition of thought and action scaffold engagement and exploration of ESD principles. The approaches encapsulated within the presented (and *becoming*) publications acknowledge that definitions of sustainability are not fixed, but the processes that innovate curriculum teaching and learning (Tilbury, 2011) align with rhizomatic principles of signifying rupture (Deleuze and Guattari, 1987), which enables thought and action, or what Bonnett

(2002) and Davis (2014) articulate as a frame of mind, or an embedded culture (Davis 2015). Some of the publications also integrate the philosophy of Reggio Emilia as a 'body of pedagogical thought and practice' (Moss, 2013, 24) where learning is a process of constructing meaning, and knowledge is 'like a tangle of spaghetti with no beginning, middle or end but always shooting off in new directions' (Rinaldi, 2006, 45) akin to Deleuzian lines of flight (Deleuze, 1995).

Appendix 1 illustrates a visual flow of the connections between the publications which were constructed organically within various communities of practice (Lave and Wenger, 1991), often performed as assisted social practices which legitimises the benefits of co-authorship, collaboration, individual authorship and networked learning *for* sustainability.

Sustainability in a higher education context is drawn from the pedagogical approaches which emerged from the division of education *in, about* and *for* the environment (Kopnina, 2014). According to Cotton and Winter (2010), Education *in* sustainability considers sustainability as a tool for developing existing learning processes but the remit is limited, education *about* simply maintains the dominant narrative around sustainability from an expert perspective (Sterling, 2010) and education *for* explores different narratives, alternative perspectives or ways of knowing and fosters transformational change (Cotton and Winter, 2010). Within the context of early childhood education, Davis (2009) found what she defined as 'a research hole' in ECEfS, where she conducted a literature review of internationally prominent peer reviewed journals in the area of environmental and education for sustainable development and found descriptions of young children *in* the environment, (playing in nature), *about* the environment (acquisition of knowledge about the environment) with a dearth of research around children acting *for* the environment (Davis, 2009).

In 2007, UNESCO established a Chair in Early Childhood Education and Sustainable Development at Gothenburg University to illuminate the value of ESD within Early Childhood Education and the recommendations suggested the need for greater

research *mentoring* and capacity building within ESD. The value I have attributed to the Gothenburg recommendations (SWEDESD, 2008) resides in the connection with Professor Julie Davis who was one of the key panel members (which were also strongly represented by OMEP) and a founder member of the TND. Some of my publications were completed within the community of the TND where dialogic and collaborative learning methods enabled critical reflection on language, assumptions and theoretical and methodological orientations. Writing within the TND exemplifies a rupture in the neoliberal, competitive, individualized and hierarchical landscape of higher education (Moss, 2013) and provided a form of refuge (Haraway, 2015) with space for personal development, confidence for unique programme curriculum planning and the development of place- based learning opportunities for students within the Early Childhood Studies programme. I draw on Haraway's (2015) concept of 'composting' to understand how the TND has helped me to decompose hegemonic hierarchical practices within higher education and supported me to develop a unique research profile while working towards the individual PhD by publication. The originality in the portfolio of work is multifaceted and moves beyond the surface level integration of ESD into the ECS programme and lies in the recognition of a natural synthesis between sustainability pedagogies in early childhood education and learning in higher education. In essence, the publications have contributed to the visibility of ECEfS and helped to normalize contextualized conversations around sustainability.

Convergence of paths

Education for sustainability is a relatively new field that has become a global movement in the space of a decade (Tilbury, 2013). In Early Childhood Studies there is a natural synthesis between environmental education and Early Childhood Education, thus, as Davis and Elliot (2014) note, the early childhood environmental education practitioner networks (mainly in Australia), 'laid the foundations for what has become the field of ECEfS' (3). The discourse used to describe the developing fields has been meaningful, with Education for Sustainable Development replacing environmental education in international parlance (UNESCO, 2015) and within the early childhood sphere, Early Childhood Environmental Education lead to Early

Childhood Education for Sustainability (ECSfS). This area has developed rapidly with international recognition by UNESCO (2005) with the appointment of Ingrid Pramling Samuelsson as Chair for Early Childhood Education and Sustainable Development. In 2007, the first international UNESCO meeting focused explicitly on Early Childhood Education for Sustainability and this resulted in the first international publication acknowledging the contribution of Early Childhood Education to a Sustainable Society (Samuelsson & Kaga, UNESCO, 2008). This publication documented the responses of 16 countries related to the 'intersection of early childhood education and education for sustainability' (Davis and Elliot, 2014, 4), however as Davis and Elliot (2014) note, most of the papers were 'aspirational rather than based on local research or practice in education for sustainability' (4).

Resources and Publications to develop research and practice

The publications presented in this portfolio highlight the research and learning process as non -linear, unpredictable and 'constructed through advances, standstills and retreats that take many directions' (Rinaldi, 2006,67). The recognition of the nine Eco school themes, linked coherently to the National Curriculum, highlighted the visible absence of the English Early Years Foundation Stage (DfE, 2014, 2017) on the Eco School (England) website. This void also highlighted the inherent inequalities of the Early Childhood Education (ECE)/Compulsory School Education (CSE) relationship, where the culture of the school dominates when it comes to prestige, status and visibility (Moss, 2013). The statutory age for starting school in England is five 'in the term following [the child's] fifth birthday' (DfE, 2017), however, it is common practice for children to be offered a place in reception classes and the vast majority enter school in the Autumn term following their fourth birthday. The tone, language and guidance from the DfE suggests that 'it is advisable that children should be in a school environment from the age of four' (Aitken, 2018, 60) and LeGrand and New (2015,26) refer to this 'soft paternalism' which exists with the dominance of a school driven discourse. Visualising the process of embedding the EYFS (DfE, 2017) included meetings with Eco Schools England, various early childhood educators and dissemination at various points

including OMEP UK (publication 3; Boyd, Hirst & Nikiforidou, 2017), the tenth anniversary of the Cambridge Primary Review Trust (CPRT) and within the Understanding Sustainability book used as a core text within the Early Childhood Studies programme (publication 6; Hirst, 2018). Appendix 1 illustrates the iterative process from simply embedding the EYFS (DfE, 2014,2017) within Eco Schools to the creation of an ESD resource, the *Early Childhood Education for Sustainable Development Framework* (Boyd, Hirst & McNeill, 2017) which recognizes the Gothenburg recommendations (SWEDESD, 2008). Recommendation 6 pointed to the value of ESD in curriculum and noted how 'ESD should be embedded in curricula, steering documents and learning materials and this includes curriculum review and development of new curricula' (17). The recommendations were adopted by UNESCO in 2009 and at an international level, OMEP adopted early childhood education for sustainability as a conference theme in 2010 which coincided with the publication of a text capturing the relationship between early childhood education and education for sustainability (Siraj Blatchford, Smith and Samuelsson 2010). Education for sustainability was profiled again during an OMEP conference in 2013 in China, but as a 'cornerstone of high- quality early childhood services' (Davis and Elliot, 2014, 4). This narrative adopted education for sustainability as a signifier for 'quality' early childhood education and at the end of the decade of education for sustainable development (2004-2014), Engdahl (2015) summarized multiple research projects with young children, OMEP members and the international early childhood community with a focus on a child -orientated perspective. 28 countries adopted theme -based projects as part of early childhood education and the results highlighted that young children do have significant knowledge about the World, however, adults often underestimate the competencies of young children.

The framework (Boyd, Hirst & McNeill, 2017) was subsequently recognized by OMEP (2017) with an award for the UK for an innovative ESD resource, and as key partners of the Global Action Programme on ESD, the framework is now accessible via the OMEP resource bank for ECEfS. It is also showcased at a university level via the LJMU micro site for Education for Sustainability with wider dissemination on the Action for Children/ Foundation Years; Great Early Years and Childcare, website

which notes the 'development of innovative resources' which include 'a suite of resources in line with the principles and commitments of the EYFS to support early childhood education in environmental sustainability'. This reference to the environmental realm of sustainability offers Early childhood education stakeholders (including early childhood educators, parent(s) and students), a familiar, secure but incomplete recognition of the framework which captures a more holistic overview of ECEfS including the value of project and place- based learning. The Action for Children/ Foundation Years website is a strategic partner of the Department for Education (DfE, 2017), and I would argue that recognition of the resource situates and attempts to normalizes ESD as a signifier for principled and reflective early childhood pedagogies with young children.

Comparing curricula frameworks (publication 7; Weldemariam, Boyd, Hirst, Sageidet, Browder, Grogan, Hughes, 2017) supported different readings of the EYFS (DfE, 2017) and is used in teaching within the ECS programme to explore how the framework itself constructs the child. If I can support students to become sensitively aware to the ways in which the child is positioned, it may help to begin to conceptually subvert constructions of the child assumed in such developmental frameworks. Even benign goals such as 'sits still and listens attentively' (DfE, 2017) acknowledges the colonial adult/child asymmetrical binary (Cannella and Viruru, 2004) that works against the rhetoric to support children to become active, autonomous agents for sustainability. The Education for Sustainability lens renders the invisible, visible where children can and should be encouraged to *pose* questions and determine flexibility of thought.

The synergies between young children's learning and learning in Higher Education attends to an awareness that 'all learners' (UNESCO, 2015: SDG 4.7) need to have the necessary knowledge, skills and confidence to be able to discuss sustainability, including the ability to reflect upon their own contextual understanding and where the fundamental change is not about *what* to learn, but also *how* learning occurs. Wider questions arose about the purpose of education and the preoccupation of standardised testing and outcomes (Alexander, 2010,2015, Moss, 2013). The characteristics of effective learning within the EYFS (DfE, 2017) include active learning, playing and exploring, and creating and thinking critically and this

highlights the distinctive features of experiential learning central to pedagogies in early childhood education (Luff, 2018). In equal measure, sustainability pedagogies noted in research with students support the underpinning theories related to lifelong learning, transformative learning, deep learning, critical thinking and reflection.

Publications related to learning within higher education (publication 4; Hirst, 2016, publication 5; Braithwaite and Hirst, 2018) sought to position 'University as a place of tension, struggle and uncertainty' (Holmes, 2018, xi) and the visual methodologies acknowledged in the Pecha Kucha research (publication 4; Hirst, 2016) scaffolded the use of visual provocations with students (publication 12; Hirst, 2018), and supported Sterlings' (2010) call to re-vision learning, and consider how sustainability education might be enacted with open ended collaborative inquiries (Bray et al, 2000), rather than tutor as ESD expert. Rather than well intentioned behaviourist approaches to teaching for sustainability, which can wrongly frame learning as a linear process, the visual methodologies were designed as efforts to develop visual discourses that do not discipline looking in an inequitable way but produce other ways of seeing the position of displaced people within a global context. This exploration of social, cultural and economic sustainability helped students to see whose voices are privileged and whose are silenced or marginalized (Hunter et al 2018, 57) and invited students not to be 'silent vis -a-vis this immorality' but to consider a 'pedagogy of indignation' (Friere, 1995,74). As Jickling and Sterling (2017, 2) note, 'sustainability stands in opposition to unsustainability…. and can serve as a vantage point or a non -conforming resting place for critically appraising the status quo' and the use of visual imagery in my teaching helped to 'lay bare the prejudices beneath the smooth surface of the visible to support acknowledgement of the other' (Rose 2016,26), thus the development of empathy for the *other* is key to the understanding of sustainable futures.

Embedding ESD into the ECS programme is far from a panacea and under the conditions of globalisation, there is an increased move towards individualism in which people are required to actively construct their own identities (Giddens, 2006), however, recognition *of* sustainability amplifies the need for students

participating as active players in their education at a time of increasing neo-liberal marketisation of higher education.

Convergence of critical pedagogy and place -based learning

As noted earlier, the ECEfS framework (Boyd, Hirst & McNeill, 2017) draws on the merits of 'other signifiers' (Gonzalez-Gaudiano 2005) and place- based learning is significantly grounded in my research with children, early childhood educators, students and community. Siraj-Blatchford et al (2017) argue that project work recognizes and makes connections between classroom experiences and the real world so that metacognitive links are developed to allow the transfer of learning to other contexts. Many of my students have transitioned from secondary education, where the 'right answer' was currency to enable the transition to higher education and expectations about the university classroom are often defined by asymmetric relations, assessment practices and a tutor led path to the acquisition of new concepts, new ideas, and the reorganization and extension of knowledge.

A report to the European union (EPSD,2010) noted the capacities of young children to engage in complex issues and it recommended that ESD should be an integral part of training and professional development for pre- school educators, however, Urban (2008) noted how in many countries, strategies to further develop services and institutions for the education and care of young children are linked to a discourse on professionalism that is guided by a professional body of knowledge. He argues that the prevailing conceptualisation of the early childhood professional is constructed out of a particular, hierarchical mode of producing and applying expert knowledge that is not necessarily appropriate to professional practice in the field of early childhood education.

My collaborative research publications related to the coastline as spaces and places for learning (publication 8; Boyd and Hirst, 2018, publication 9; Hirst, Boyd, Browder and Emery, 2018, publication 10; Boyd and Hirst, 2018) seek to offer more sophisticated approaches involving adults working alongside children in a collaborative inquiry (Bray et al, 2000, Rindaldi, 2006) with students developing their own cultural and literacy capital with direct work with children. The research with early childhood educators utilising the local beach (publication 8; Boyd and

Hirst, 2018, publication 9; Hirst, Boyd, Browder and Emery, 2018, publication 10; Boyd and Hirst, 2018) assumed an initial narrative around 'trips to the beach' to expend energy, with a shift in consciousness towards place- based pedagogies connected to the social and ecological places inhabited by people and other species central to the survival of the planet. Students on place- based project placements develop the confidence to reverse the gravitational pull of the early childhood environment as a place where discursive practices colonise the body of the young child (MacClure et al, 2011) and the ESD lens acknowledges the value of young children as part of (or *becoming*) curriculum (Sellers, 2013).

Tillmanns (2017,31) argues that within sustainability education 'there is often a human centric approach which fails to acknowledge the significance of ruptures beyond that which impacts the wants or needs of humanity on planet earth' and the research papers capture the idea of 'learners' (noted in SDG 4), as always in a state of *becoming* (Deleuze and Guattari, 1987) with the revisioning of rights to include collective rights, biocentric and ecocentric rights (Davis, 2014). Luff (2018) cites the work of John Dewey as a useful basis for contemporary education for sustainability as ideas to be 'recreated according to context' (1) and the participatory engagement leveraged a quality of connection to the locality that was not available within classroom discourse. Publications brought critical theories related to place- based learning and critical pedagogy to play with ideas around lifelong learning and transformation (Gruenewald, 2003).

The theme of participatory action research was also captured in the sustainability related projects with students and children (publication 11; Hirst, 2018) and the creation of the bird hide and bug habitats with young children, provoked students to envisage a critical pedagogy and a journey towards activism (Mac Naughton, 2005). Children were connected to the building of the permanent bird hide structure from inception with initial meetings with the builders, they became architects in the design plans including the physical positioning within the grounds. The notion of active learning and agency were visible to the ECS students who observed in situ alterations by the children which were based on critical thinking (publication 1; Hirst, 2016, publication 6; Hirst, 2018) and what Dewey (1933)

would define as curiosity. Sustainable building materials and methods used in the construction of the bird hide, lead to a nomination for the Liverpool Echo environmental awards and an article for Nursery World to explore the building processes involved in sustainable construction, energy conservation and healthy buildings at a time when the EYFS reduces the statutory requirements to an outdoor environment to 'daily access to the outdoors' (DfE, 2017). All research with ECS students has been based on the idea of 'closer interaction' (Yorke 2001, 21) around practice with young children, where active learning, autonomy and collaboration constitutes a form of ongoing, purposeful, formative dialogue, based on students' developing 'cultural capital' (Bourdieu, 1991). I would also argue that in order for information to become 'knowledge' there needs to be opportunities for shared contexts, and whilst dialogue derives from a shared contextual base, any messages are assimilated by our own idiosyncratic experiences and memories, thus, the pedagogical approach of project- based sustainability research predisposed students towards a deep approach to learning including 'bringing out the big picture' (Howie and Bagnall 2013,391).

Critical reflection of self as researcher and future directions for research

When discourses become so powerful in normalising the ways in which we think and act, there exists little or no space in which to reflect on alternatives. The academic study of early childhood relies upon a critical, rather than a passive reading of texts and it is important that I help students to become skilled at interpreting critically and becoming familiar with the ways in which knowledge is produced and shared (Urban, 2008). The ways we are instructed to be 'effective' early childhood educators, tutors who 'satisfy' our student body, and are interpellated (Althusser 1998) into these subject positionings, have become so prescriptive, that compliance within a 'regime of truth' (Foucault 1977) seems our only option. The process of PhD by publication has been a non -linear journey where my initial dabbling in academic writing was tentative and perhaps a little naïve. The value I attribute to co authorship has been postulated as complicated within the individual pursuit of doctoral status which is progressively becoming the normalised currency of academic achievement. Jackson (2013,355) notes this

process has gained currency within higher education institutions and 'provides academics with a means of achieving doctoral status while managing the publish or perish milieu'. I would like to think that my PhD journey has supported the 'reflexivity which is inherent to being human when we attempt to understand the other' (Holland, 1999, cited in Tillmanns, 2017, 66) and my ideas around sustainability are in a constant state of flux to satisfy my own personal quest to move beyond 'the will to truth' towards the 'will to know' (Foucault 1977: 47). I recognise that whilst my methodological decisions were grounded in a commitment to democratise and empower, I have also developed a cognisant suspicion around the rhetoric of 'voice' and 'subjectivity' of research participants and I recognise how '[I am] always present in [my] texts no matter how [I] try to suppress [myself]; [I am] always writing in particular contexts that affect how and what [I] write and who [I] become' (Olsson, 2009,17).

Final Reflections

As a member of the Teacher Education for Equity and Sustainability Network (TEESNet) I have drawn attention to early childhood studies as a sound programme to critically explore early childhood and the promotion of critical thinking and curiosity (publication 11; Hirst, 2018) and my presentation for September 2018, reviewed the research with students who used the ECEfs framework (Boyd, Hirst & McNeill, 2017) in their place- based projects. My plans for future research are multifaceted and will aim to capture how sustainability concepts are received by students within the context of the Early Childhood Studies programme. This includes an evaluation of the ECEfS Framework (Boyd, Hirst & McNeill, 2017) and Early Childhood Education *for* Sustainability as a scaffold for transformative learning in higher education. The development of assessment *for* learning and the creation of artefacts by students will also be researched. This evaluation includes the creation of children's literature, clay models and posters with an appreciation of cultural production for learning in higher education.

In Spring 2018 I continued to embed place -based projects with ECS students and following ethical approval my research focuses on interpretations of the ECEfS

framework (Boyd, Hirst & McNeil, 2017) with students, children and early childhood educators. When I met the owner of a host private day nursery located in the city centre, she talked about the philosophy of the nursery and how they used the city as provocation with staff, students, parents and children. She cited how a social media phenomenon related to 'random acts of kindness' had 'caught on' and following a walk around the city, the children had observed the number of (homeless) people 'sitting on the pavement with sleeping bags.' It would have been easier to have glossed over the children's observations and move back into the sanctuary of the nursery, however, this 'pedagogy of place for the inner city' (Haymes, 1995 cited in Gruenewald, 2003,5) acknowledged an urban context that ecological place- based education often avoids. Elliot (2014,133), describes how limiting children's agency 'resonates with an earlier era of early childhood education where psychology based and developmental paradigms chimed with instruction and direction rather than authentic involvement'. This is important at a time when the indicators for quality early childhood education SDG4 (4.2) will be captured by a quantitative participation rate with children developmentally on track (King, 2017). The owner didn't badge (a signifier) her philosophy as EfS however, she could clearly see the connections, including the development of empathy, critical thinking, and acknowledgement of the situation of others. The students who attended this host placement were surprised at the altruistic perspective of very young children and became involved with the children, staff and a parent who owned a small cafe to make sandwiches and distribute and communicate with the 'people on the streets.' This move beyond the parochial learning environment of the university classroom offered a focus on experience with *place* as a response to a doom and gloom approach to environmental education and a conventional education in the lecture theatre talking about the outdoors as an abstract concept. As Haynes (1995, cited in Gruenewald, 2003, 5) recognises, 'relationships of power and domination are inscribed in material spaces. That is, spaces are social constructions filled with ideologies and the experience of places such as the city centre, shapes cultural identities'.

I have also been able to reflect on the use of the SDG's as a vehicle for learning about sustainability issues and the need to develop a secure critique of the narratives around the aspirational global rhetoric noted in Transforming our world (UN, 2015). King (2017) questions the universal targets for SDG4 which repeatedly cite 'developing' and 'least developed' countries and notes the dichotomy between the international process for measuring success in education which is 'unimaginable for many developing countries and what is close to routine for many OECD countries' (814). 'The global governance of these education indicator assessments through a dense jungle of international working groups, task forces and custodian agencies, predominantly linked to international development constituency situated in the North' (King, 2017, 815). The Global Education Monitoring report (UNESCO, 2017) talks about accountability in education and the need for 'transparent and relevant data on the strengths and weaknesses of education systems', however, 'over half the teachers in England argued that increased data collection created more unnecessary work.' With this in mind, I reflect on the OECD introduction of the International Early Learning and Child Well-being Study (IELS) decided by member state governments without wider participation (Moss and Urban, 2017). In 2017 the Department for Education announced participation by England (noticeably not NI, Wales or Scotland), US and Estonia with the default testing of young children *on a tablet* thus, this decontextualized methodology may well continue to perpetuate developmental truths which express authoritative discourses about children and childhood (Mac Naughton, 2005, Penn, 2005, McDowall Clark, 2013). As Moss and Urban (2017) note, this blunt instrument seeks to reduce the rich diversity and complexity of ECEC to common outcomes using standardised measures with no reference to the wider social cultural pedagogical context and I would argue, serves to perpetuate governmentality where power may not be exercised directly or coercively, but through early childhood educators embodying dominant discourses and then governing themselves in conformity with these discourses (Foucault, 1977). Moss and Urban (2017) mark the dangers of soft power, what they call 'making the Other the same'. They note how the OECD exercises enormous 'soft power' on national education policies and systems because countries want to improve their league table position. As Hunter et al

(2018) suggest, critical thinking and reflection includes 'deliberation involving the ability to both reason and reflect sceptically' (49) and I am drawn to Auld and Morris (2016, 26) who cynically suggest the best way to improve PISA scores is for nations to align their curricula more closely to what is measured then enter into a closed self -fulfilling system in which nations teach according to the test and better scores 'create the illusion of improvement'. Jickling and Sterling (2017) argue for the rebellious educator for ESD where citizens (me as a researcher and tutor, my students, the children, parents and community) 'try to understand extremely complex issues, find and process huge amounts of information, relate and critically interpret this information, and synthesize it in an integrated and meaningful manner' (135). In summary, putting Bourdieu (1991) to work, ESD can help to see structure and agency as integrated both within ourselves and in practical work and provides opportunities to think critically without blinkers where habitus is a socialised subjectivity (Wacquant 1989).

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Appendix 1

A Visual flow of the connections within various communities of practice

Early Childhood Studies as a site for Education for Sustainability, Eco Literacy and Critical Pedagogy

Request from author, Alison Prowse (2014) to cite my work based on Collaborative Inquiry as an experiential pedagogical approach in higher education. My learning during the MA in Academic Practice supported my belief that as a tutor in HE, I wanted to facilitate learning where tutors and students experienced a higher tolerance of ambiguity, linking strongly to the ideas of learning for an unknown future and ESD.

Text book used as key text in the Early Childhood Studies Programme
(Boyd and Hirst, 2016) *Understanding Early Childhood Education across the UK*

Invitation to contribute to the Nursery World Series related to Education for Sustainability (Jan- July 2016)

Part 1: How to become sustainable
Part 2: Taking the lead
Part 3: Bees are buzzing in the trees
Part 4: Waste not
Part 5: Getting everybody involved
Part 6: For granted
Part 7: Laying the foundations

Nicky Hirst, Diane Boyd and Sarah Emerson

Assessment in HE Research Conference at Cumbria University (2016)

Presentation and publication of Hirst (2016) Using Pecha Kucha as formative assessment in two undergraduate modules; (Re) conceptualising 'the right lines'

Invitation to contribute to book using visual imagery/film to view children and childhood (2016)

Braithwaite, J. and Hirst, N. (2018) Educating Rita; The Journey to Graduateness. In Aitken, S. *Using Film to Understand Childhood and Practice.* London; Bloomsbury Publishing. pp.11-27

Transnational Dialogues in Early Childhood Education for Sustainability (TND) (July 2015)

Following contact with Professor Julie Davis about her research literature review in 2009, a personal invitation to attend the third TND in Stavanger, Norway in July 2015.

The 3rd World Symposium on Sustainable Development at Universities (WSSD-U) Designing Tomorrow's Campus: Resilience, Vulnerability and Adaptation. Massachusetts Institute of Technology (MIT) (September 2016).

Collaborative presentation by TND members and accolade of best paper award for Emery, S., Davis, J.M., Sageidet, B.M., Hirst, N., Boyd, D., Browder, J. (2017) Transnational Dialogues for sustainability research in early childhood education: A model for building capacity for ESD in universities?

Included a micro TND 3.5 with TND members collaborating on the paper

Weldemariam, K., Boyd, D., Hirst, N., Sageidet, B.M., Browder, J., Grogan, L., Hughes, F. (2017) A Critical Analysis of Concepts Associated with Sustainability in Early Childhood Curriculum Frameworks Across Five National Contexts

The emergence of the Eco School project to embed the English Early Years Foundation Stage (DfE, 2014, 2017) into the Eco Schools website (England)

Introduction of the project by Boyd and Hirst with McNeill (student intern) Phase 1 / 2 – appointment of intern- research/ethics gathering feedback from cluster groups.

Dissemination of the journey to embed the Early Years Foundation Stage Framework

Presentation by Boyd, Hirst and McNeill at the OMEP AGM at Hope University, Liverpool November (2016)

Further dissemination at the LJMU Organic Collaborations conference in Liverpool (2016)
Visualising the journey; Poster Presentation (Boyd and Hirst, 2016)

Further dissemination at the OMEP conference, The Place of the Child in 21st Century Society, at Canterbury Christ church University (May 2016)
Presentation symposium followed by paper by Boyd, D. Hirst, N. and Nikiforidou, Z. (2017) Embedding the EYFS into the Eco-schools Programme; Visualising the journey peer reviewed and published by OMEP UK.

Further dissemination at the tenth anniversary of the Cambridge Primary Review Trust (CPRT) Conference in London (November 2016)
Visualising the journey; Symposium and presentation (Boyd and Hirst, 2016)

Further dissemination in second *understanding* book used as key text in the Early Childhood Studies Programme
Hirst (2018), Early Childhood Education for Sustainability within England. In, Understanding Sustainability in Early Childhood Education; Case Studies and Approaches across the UK (Boyd, Hirst & Siraj-Blatchford, 2018)

Development of Eco Schools Project to include the Early Childhood Education for Sustainable Development (ECEfS) Framework (Boyd, Hirst & McNeill, 2017) with further dissemination at the 69th OMEP conference Croatia (June 2017)

Presentation of award for resource (Boyd, Hirst and McNeill, 2017)

Presentation of two papers with TND members recognising Beach Kindy research related to place- based learning
Hirst, N, Boyd, D., Browder, J. and Emery, S. (2018) Watery Webs of Interconnectedness: Waterways as Pedagogical Sites
Boyd, D. and Hirst, N. (2018) Documentation as a Listening Strategy; Using Beach Kindy as a Pedagogical Place

Access to the Early Childhood Education for Sustainable Development Framework for practitioners, students and the early childhood education community via an LJMU micro site (2016)
https://www.ljmu.ac.uk/microsites/early-childhood-education-for-sustainability

Access to the Early Childhood Education for Sustainable Development Framework for practitioners, students and the early childhood education community embedded into the Foundation Years website as a resource under their 'knowledge hub' section (2017)
https://www.foundationyears.org.uk/2017/09/early-childhood-education-for-sustainability/

The Early Childhood Education for Sustainable Development Framework to be added to the OMEP resource bank on Early Childhood Education and ESD. OMEP is a key partner of the Global Action Programme on ESD.

https://en.unesco.org/news/omep-launches-resource-bank-early-childhood-education-and-esd

Dissemination of the Beach Kindy research with practitioners, community, families and children (Phase one)
Sustainable Science conference at Manchester Metropolitan University, Manchester (April 2017)
Presentation by Boyd and Hirst
Followed by publication of paper, Boyd, D. and Hirst, N. (2018) Recognising Beach Kindy as a Pedagogical Approach for Critical Agents of Change Within Early Childhood Education.

Dissemination of the Beach Kindy research with practitioners and children (Phase two) at the 69th OMEP conference Croatia (June 2017)
Hirst, N, Boyd, D., Browder, J. and Emery, S. (2018) Watery Webs of Interconnectedness: Waterways as Pedagogical Sites
Boyd, D. and Hirst, N. (2018) Documentation as a Listening Strategy; Using Beach Kindy as a Pedagogical Place

The Teacher Education for Equity and Sustainability Network (TEESNet) Tenth Annual Conference- (September 2017)
Making the Sustainable Development Goals Real: The Role of Teacher Education in Promoting Quality Education for Sustainable Development and Global Citizenship Education in Schools
Presentation of paper: Hirst, N. (2018) Education for Sustainability within Early Childhood Studies; Collaboration and inquiry through projects with children.

Beach Kindy research embedded within ECS second year module related to place-based learning (February 2018)
First iteration of Beach Kindy as a place to learn built into a three -week project
Students engaged in Beach Kindy pedagogy with the original research setting
Ethics approval granted for research with students for September 2018

Four Nations Education for Sustainability Conference at the Manchester Environmental Education Network (MEEN) in March 2017

Promotion of book, Boyd, Hirst & Siraj-Blatchford (2018) Understanding Sustainability in Early Childhood Education; Case Studies and Approaches across the UK

Attendance in group discussions and networking

Embedding the Early Childhood Education for Sustainable Development Framework into Early Childhood Studies

The Early Childhood Education for Sustainable Development framework has been embedded into an ECS module, 5206ECS from February 2018 and will be analysed by host settings and students during multiple three- week place- based projects, with a focus on contextualised places for learning. The host settings include LIPA Primary school and a visual artist who works with them. This artist will be working with LIPA and the Walker Art Gallery on a three -year project to create a wild flower garden in the Oratory at the Anglican cathedral so the students have been invited to work alongside them at this exciting stage with the potential to be involved in their final year for some collaborative research related to their ECS dissertation.

Projects and research with ECS students related to Education for Sustainability

Hirst, N. (2018) Education for Sustainability within Early Childhood Studies; Collaboration and inquiry through projects with children.

Hirst, N. (2018) Education for Sustainability in Higher Education; Early Childhood Studies as a site for provocation, collaboration and Inquiry

Liverpool John Moores

Nepal-UK Educational Research and Practice Workshop; Inclusion, Sustainability and Culture (June 2018)

The Teacher Education for Equity and Sustainability Network (TEESNet) Getting to the Heart of the Sustainable Development Goals (SDG's): The Role of Teacher Education in Prompting Critical Engagement and Action. Liverpool Hope University (September 2018)

Presentation of paper: Hirst (forthcoming) Evaluating the ECEfS Framework; Early Childhood Education *for* Sustainability as a scaffold for transformative learning in higher education

Invitation to contribute to a new initiative with the Oxfam Education resource bank (November 2018)

Following presentation at the TEESNet conference in September 2018, an invitation to contribute a case study related to Early Childhood Education for Sustainability from the Global citizenship education advisor (resources) for Oxfam Education. Oxfam have an established Education resources area and are developing case studies to support educators to acknowledge the Sustainable Development Goals. My presentation at the conference prompted a reflexive response from the advisor where she noted the absence of any case studies related to early childhood.

Invitation to contribute to the fourth edition of *The Early Years Foundation Stage: Theory and Practice 4th Edition* edited by Ioanna Palaiologou (November 2018)

This is a popular book, (hence the fourth edition), for undergraduate, post graduate students and practitioners and the invitation is directly connected to my work around Education for Sustainability in Early Childhood Education. The contribution

will be due in May 2019 and is chapter 20, *Understanding the World* with an ESD focus.

Joined the Sustainability in Higher Education (SHED) Network (February 2019)

Proposed themed papers post PhD (ethical approval granted)
Evaluating Sustainability learning within the Early Childhood Studies programme

Hirst (forthcoming) Evaluating the ECEfS Framework; Early Childhood Education *for* Sustainability as a scaffold for transformative learning in higher education
Hirst (forthcoming) Critical engagement with the SDG's in Early Childhood Studies
Hirst (forthcoming) From 2D to 3D; Cultural production for learning in higher education

Further proposed book post PhD

Possible third book in the *Understanding* series

Further TND collaborations
Conference presentation of accepted research paper at the Australian Association for Environmental Education, Polity, People, Planet and Pedagogy 21st- 25th October 2018

Southern Cross University Gold Coast Australia

Paper Title: Emery, S. Hirst, N, Boyd, D. Davis, J. How the transnational dialogues process is building capacity for change in ECEfS research
Presentation Type: Research Paper

Plans for European Early Childhood Education Research Association

EECERA Conference August 2019

The establishment of a sustainability SIG

TND paper 1

International update – symposium

TND paper 2

Current theorising and research.