

EMPOWERING CHILDREN THROUGH INQUIRY

By

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A thesis submitted in partial fulfilment of the requirements for the Master of
Education, Marino Institute of Education

June 2020

Declaration

I hereby declare that this dissertation is a presentation of my original research work. Wherever contributions of others are involved, every effort is made to indicate this clearly. This work has not been submitted previously at this or any other educational institution. The work was done under the guidance of Dr. Sandra Austin at the Marino Institute of Education, Dublin. I agree that the Library may lend or copy this dissertation upon request.

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Date: 2/6/20

Word count: 22,000

Acknowledgements

I would like to take this opportunity to thank my Supervisor, Sandra Austin for her expertise, support, guidance and encouragement in completing this research project. Thank you for the numerous meetings and Zoom calls, which were invaluable in completing this research. I am very grateful to have a Supervisor who is so patient and generous with her time.

To my colleagues, I value and appreciate the expertise, insights and interest that you have shown in relation to this research project. Thank you also for your assistance in supervising the children, especially when the Irish weather was unpromising. Your support is greatly appreciated. Many thanks in particular to the principal, who was so giving of her time, advice and interest in relation to this project.

I extend a heartfelt thanks to all of the local community environmentalists who were so giving of their time and showed such interest in the children. Thank you for sparking an interest and a passion in them.

To my family and friends, who have been incredibly understanding of my commitments in the last two years-completing this research project was made so much easier by your support, interest and encouragement to keep going. I appreciate all of the phone calls, dinners and virtual hugs. Thank you for rooting for me.

Finally, and most importantly, I thank the children involved in this project. Your enthusiasm, commitment and energy made this inquiry a memory to be treasured. Your passion for raising your voices was truly inspirational. Thank you for teaching me.

Abstract

Learning through inquiry can make a valuable contribution to primary education. The primary aim of this study was to identify how learning through inquiry might empower children to take action on environmental issues. A qualitative approach, incorporating case study research, was adopted in a sample of 25 children in a mainstream primary school. The children visited research sites in the locality and identified marine pollution as an environmental issue of interest. An inquiry cycle was employed for planning and guiding engagements. Work samples, discussion transcripts, photographs and qualitative observations were analysed. Direct experience, cognitive and affective learning, participation, and active citizenship are central to inquiry-based learning. These features of inquiry played a role in empowering children to take meaningful action in this study. An understanding of the power of social action and the value of perseverance was developed. When children felt recognised and respected by others in society, when they felt seen and heard, they were empowered to take meaningful action.

Table of Abbreviations

UNCRC- United Nations Convention on the Rights of the Child

EE- Environmental Education

IBL-Inquiry Based Learning

DE-Direct Experience

AT-An Taisce

CC-Clean Coasts

SBAG- Summerville Beach Action Group

DCC-Dublin City Council

BOM- Board of Management

GDPR-General Data Protection Regulation

IT-Information Technology

JEP- Junior Entrepreneur Programme

MERC- Marino Ethics in Research Committee

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Chapter 1 Introduction

Context and Background of the Study

The public domain is currently imbued with the recent stark findings of United Nations Global Assessment on Biodiversity and Ecosystem Services (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, 2019). Ferrier et al.(2019), in summary of its findings, advise that this is a time of environmental crisis. The future of our ecosystems, oceans, planet, and food chains are under extreme threat as a result of human actions. In particular, our marine ecosystems, from coastal to deep sea, are evidence of the impact of human behaviour, with coastal marine ecosystems experiencing “massive historical losses of extent and condition as well as rapid ongoing declines” (p. 12)

Along with this, the media has been pervaded with reports of governmental and societal initiatives to tackle these major issues. In the Irish context, the “Extinction Rebellion” movement is aimed at drawing attention to the environmental issues threatening our planet (Heffernan, O’ Doherty, & Dillon, 2019). On an international scale, Greta Thunberg’s school strikes campaign has global impact (Watts, 2019) and has perhaps seen environmental issues move up the agenda in educational settings.

In addition to this, an extensive body of research and media reports have recently documented the effects of pollution on the marine environment. For instance, The Ellen MacArthur Foundation published research in 2016 suggesting that by 2050, more plastic will exist in the sea than fish (MacArthur, Waughray, & Stuchtey, 2016). In addition to this, Plummer and Van Dis (2019) caution that plastic pollution disrupts

the digestive systems of plankton and fish, and consequently, has effects on the health of organisms at every trophic level, including humans.

Urgent change is required to conserve and protect our environment and our future. Without doubt, this is the time for encouraging all members of society to act, a time for empowerment. Empowerment is an interactive process between the individual and environment, during which the perception of oneself as powerless develops into the recognition of oneself as an assertive, informed citizen with socio-political ability. Empowerment fosters a capability to participate with others, to cope with frustrations and to act for influence over the environment (Keiffer, 1984). How children can be empowered to take meaningful action in face of environmental adversity should be of particular interest to practitioners.

The United Nations Convention on the Rights of the Child (UNCRC) reports that as well as the right to safety and protection, children have the right to voice and influence too (UN General Assembly, 1989). In investigating how this is applied in the Irish context, Waldron and Oberman, (2016) reported findings that are concerning. They established that the school and classroom practice and policy in Ireland show a somewhat tokenistic, superficial approach to empowering children, where they are often viewed as duty-bearers as opposed to rights-holders. Conformity and responsibility, it appears, characterise citizenship education in Ireland today.

While responsibility in relation to the environment is obviously important, the importance of children understanding their civic right to take action- through voicing their concerns, engaging in political dialogue, asking questions, suggesting alternatives, seeking creative and innovative solutions to environmental issues- is

equally important. I would propose that it is only through adults promoting the rights outlined above, and children exercising them, that empowerment can emerge.

Waldron and Oberman's (2016) research begs two questions: why is this the case in Ireland today, and how can practitioners be more pro-active in their approach to empowering children to realise their value as current (not future) citizens? As important guiding figures in a child's life, it is imperative for teachers to navigate this, given their duty in respect of the rights outlined in the UNCRC, but ultimately for the benefit of children and society. Equally, it would be valuable to ascertain how, in face of discouragement, practitioners can best support children to continue and persevere in their search for solutions. Identifying a pedagogical approach that can support this process, I would argue, should be a priority of practitioners today.

Focus and Aims of the Study

Inquiry has been described as a process (Wolk, 2008), a stance (Short, 2009) and a way of being (Murdoch, 2015). This approach to learning is rooted in constructivism and underpinned by conceptual understanding. Inquiry based learning (IBL) advocates a collaborative, child-centred, democratic approach to learning, which is characterised by collaboration, problem-solving, experimenting, risk-taking, critical thinking, decision-making and questioning (Short 2009, Wolk, 2008). In light of its endorsement of these skills, and in light of the above discussion on empowerment, it would seem that inquiry could be a fitting approach for inspiring empowerment and promoting citizenship in children. In having agency and ownership over their learning, perhaps children can transfer what they have learned to the broader context of the learner and the wider world.

The role and impact of inquiry in taking meaningful action on environmental issues is central to this thesis. I have conceptualised meaningful action as action which is rooted in constructivism, in that the action taken is relevant to the learner and their lives. Meaningful action is underpinned by conceptual understanding, brought about by informed decision-making and, as Jensen and Schnack (2006) note, geared towards problem-solving. Constructivism, conceptual understanding, problem-solving and informed decision-making are central to learning through inquiry. Thus, the skills and underpinnings of IBL are instrumental in taking meaningful action. I undertook this study to demonstrate how learning through inquiry can fundamentally transform children's understanding, beliefs and attitudes – both of themselves and of the world. This transformation in understanding can empower them to participate in meaningful action.

I intended that this study would explicitly identify the features of inquiry that inspire children to take meaningful action. Furthermore, I aimed to investigate if children really need to “see it for themselves”(Hope, 2009, p.169) as a prompt for taking meaningful action on environmental issues. I was also interested in investigating if learners needed to be affectively and/or cognitively engaged with an environmental issue in order for them to take meaningful action.

In summary my questions are:

- What features of inquiry can inspire children to take meaningful action on issues they feel strongly about?

- How can practitioners actively approach empowering children to realise their value in society?
- If challenges to empowerment emerge, can learning through inquiry help children overcome these issues?

Format of the Study

This study adopted a qualitative approach to addressing the research question. I endeavoured to develop my understanding and knowledge of inquiry, empowerment and environmental education through making connections between my research and the academic literature. The current study is small-scale, and thus, limited in scope. However, the findings are indicative of inquiry playing a role in stimulating empowerment in children, an assertion that will be justified in Chapter 4.

Briefly, I conducted an extensive review of the literature, which provided a comprehensive insight into the main themes of the research question. This review also highlighted inconsistencies in the research, which guided me in developing my research design, refining the focus of the study, and expanding my awareness of the possible pitfalls of my approach. The literature also equipped me for analysing and interpreting the data collected.

I conducted this study with a sample of 6th class girls from Scoil na Mara¹, Dublin for a period of 5 weeks in February 2020. Adopting a case study approach, and using The Authoring Cycle (Short & Harste, 1996) as a planning tool and guidance system, I intended to gain a rich insight into the features of inquiry that were inspiring children

¹ Pseudonyms are used for locations and community personnel involved in this research. Names were chosen by me to protect the identity of those involved in the research.

to take meaningful action. The inquiry began by exploring environmental issues in the locality and the focus was subsequently narrowed to the issue of marine pollution on Summerville, the local beach. Then, using the constant comparative method, and with a cognisance of reflexivity, I analysed the children's inclination to take meaningful action on environmental issues.

Content of the Study

This study is presented in five chapters. In Chapter 1, I introduce the background, context, focus, format and content of this study. I review the literature in Chapter 2. In Chapter 3, I address the methodologies employed in this research, along with the rationale for using them. I present the findings of this research, and link them to previous literature in Chapter 4. In Chapter 5, I synthesise this information, outline limitations of the study and make suggestions for the future direction of studies on inquiry, empowerment and environmental education.

Chapter 2 Literature Review

In light of the concerns outlined in the Introduction, the aim of this study is to identify how inquiry might empower children to take meaningful action on environmental issues. I will examine the themes of inquiry-based learning (IBL), environmental education (EE) and empowerment in this review of literature.

Firstly, the nature and characteristics of IBL will be explored with reference to The Authoring Cycle (TAC) (Short & Harste, 1996). I will draw parallels between inquiry, and empowerment to take meaningful action. Secondly, with reference to the literature, I will provide a rationale for conducting an inquiry in the context of environmental education. This theme will be explored under the subthemes of direct experience, cognitive learning and affective learning. Thirdly, I will define and examine the concept of empowerment. This will allow me to identify what empowerment might look like, specifically in the context of EE, and having adopted an IBL approach. Empowerment will be explored under the subthemes of citizenship and participation. Finally, the potential challenges that could arise to threaten the emergence of empowerment will be considered. Having reviewed these challenges, I will be better positioned to manage them, should they arise in this study.

I will establish connections between the themes above, where appropriate. Furthermore, I will identify the inconsistencies in the literature, which this study aims to address. In doing so, I will be informed and equipped to address how inquiry might empower children to take meaningful action on environmental issues.

Inquiry

IBL is a “collaborative process of connecting to and reaching beyond current understandings to explore tensions significant to learners” (Short, 2009, p.12). It is a philosophical stance to the entire educational experience (Harste & Leland, 1998). Inquiry sees knowledge and facts as vehicles to facilitate the further, deeper, more holistic exploration of a concept, where learners inquire about the self, the local, and the global (Austin, 2019). IBL is characterised by ‘curriculum-making’, a “creative act of interpreting a curriculum specification and turning it into a coherent, challenging, engaging and enjoyable sequence of teaching and learning” (Geographical Association, 2019, p.1). Therefore, adopting an IBL approach to the curriculum does not necessarily mean that *content* of the curriculum changes. It is the *approach* to accessing the content that changes.

Inquiry is characterised by skills such as wondering, discussing, questioning, problem-solving, data collection, critical thinking and collaboration (Short, 2009, Murdoch, 2015). Through exercising these skills, children are enabled to lead the inquiry, and explore concepts that are relevant to their lives. In leading the inquiry and exercising the skills above, children have ownership over their learning.

Inquiry is philosophically rooted in constructivism, where knowledge is built gradually, through social interaction with others (Vygotsky, 1978). Collaboration and participation are therefore central to IBL, “where students think together, not just work together through dialogue about ideas” (Short, 2009, p.17). This occurs in a community of inquiry, a concept which is historically rooted in the work of Dewey (1933). Dewey saw practitioners and learners as participants in activities, working

collaboratively towards shared goals. Garrison and Akyol (2013), influenced by Dewey (1933), define a community of inquiry as “a group of individuals who collaboratively engage in purposeful critical discourse and reflection to construct personal meaning and confirm mutual understanding.” (p.106) The authors emphasise that both interaction and independence characterise a community of inquiry.

Through its endorsement of child-led learning, collaboration and participation, inquiry is a democratic process, where the community of inquiry has agency and ownership over its learning. In exercising agency, inquirers have a voice in their educational experience, which may inspire them to view themselves, their environment and the wider world differently. Therefore, as Austin (2019) notes, inquiry can be transformative, in that learners are empowered to broaden their understanding beyond the limits of their own experience.

Models of inquiry

Many models of inquiry have been developed by theorists (e.g. Short & Harste, 1996; Kolb, 1984; Youngquist & Pataray-Ching, 2004). A model of inquiry serves as curriculum framework, which emphasises the link between theory and practice. It should also depict the various phases of the inquiry process and show the relationships between its stages (Short, 2009). For the purposes of this research, I will draw on The Authoring Cycle (TAC) (Short & Harste, 1996), both as a planning tool for me, and guidance system for the community of learners.

The Authoring Cycle

TAC (Short & Harste, 1996; Figure 2.1) is so-called because students engage in constructing and authoring meaning about themselves and their environment as they participate in a unit of inquiry. It sees inquiry as a conceptual, problem-solving, collaborative stance that is based in connection and natural to learning (Short, 2009). The concept explored is identified as the essence of the unit and the learner's inquiry constantly refers back to this central idea.

TAC (Short & Harste, 1996) is a logical, accessible and comprehensive tool. The multidirectional arrows between each stage of the cycle capture the authenticity, fluidity and excitement of learning. The phases of TAC (Short & Harste, 1996) are connection, invitation, tension, investigation, demonstration, re-vision, representation, valuation and action.

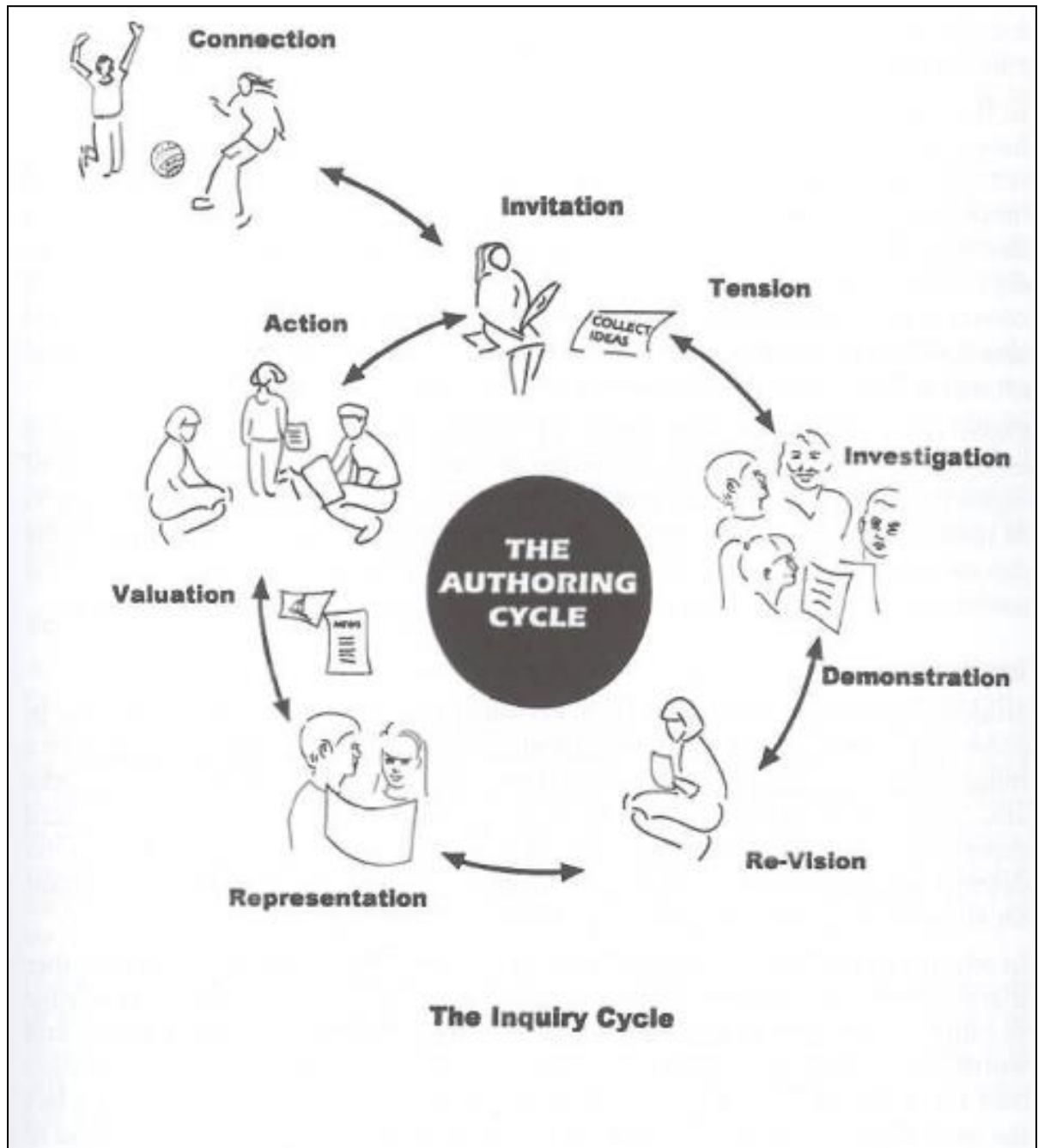


Figure 2.1 TAC (Short & Harste, 1996)

Connection: This phase concerns “getting at the essence of the central idea that frames a unit” (Short, 2009, p. 19). The teacher provides opportunities for children to explore their current understandings of the conceptual frame for the inquiry by

contemplating how that idea is already relevant in learner's lives. They are exposed to a variety of engagements that allow them to get at the "why" of the unit.

In an environmental inquiry such as this, the connection phase is characterised by engagements with the local, natural surroundings, where appreciation and care for life and life-like forms can blossom. Overall, the EE and empowerment literature, which will be further evaluated later in this review, generally indicate that developing an emotional, affective connection with nature will ultimately inspire children to act on its behalf (Noddings, 2016, Wilson, 2002).

Invitation: In this phase, learners develop their knowledge of the concepts that are emerging. Often this can take the path of a guided inquiry. This phase of the cycle is characterised by dialogue and discussion among the community of inquirers, the practitioner included. This participatory approach to inquiry is advocated by theorists such as Hart (1992) and Simpson (2018). This approach will be further evaluated later in this paper. Access is provided to resources that will enable children to actively explore lines of inquiry related to the central idea.

This is also the phase in which initial research is conducted and connected to previous learning. Knowledge is built in a constructivist manner here. The inquirer becomes more informed of, and engaged with, issues of interest in this phase. Equipped with information from their research, I would propose that learners are likely to feel more empowered to address the emerging issues.

Tension: Challenges, questions or problems that have emerged in the invitation stage are considered in the tension phase. The inquiry becomes more child-driven in nature as learners identify areas for further investigation (Short, 2009). Literature on

empowerment, specifically that which relates to power relations between adults and children, advocates having a child-centred approach here (Barker & Weller, 2006).

Short (2009) theorises that in the absence of tension, learners would become “stuck in a rut” (p.13). She highlights the importance of learners feeling “off balance” (p.13) so that they can strive to achieve clarity. She encompasses this idea when she refers to inquiry as a “reaching stance” (p.13). Similarly Lindfors (1999) describes learning as stretching beyond our intellectual and social selves while remaining grounded in previous experience. Children therefore need to apply what they have learned and stretch themselves, so that they can achieve clearer insight into the issue of interest. Though not explicitly stated by the theorists, critical thinking is the vehicle which enables them to move from “reaching” to obtaining more clarity on the issue.

The literature does not offer much guidance as to how practitioners should manage tensions that arise as part of the inquiry. I would propose that a sense of normality around experiencing tensions should be communicated to the inquirers, that tension is an expected part of learning through inquiry, not a sign to turn back and revert to more “manageable” learning. Furthermore, I would consider it important to communicate that challenges are impermanent but necessary obstacles that lead us to greater clarity. Moreover, in the case of an environmental inquiry such as this, it would seem important to indicate to inquirers, that like them, others may also be struggling with overcoming the same tensions.

Investigation: The focus is narrowed during the investigation phase when issues that arose in the tension stage are further explored. The investigation should be child-directed, not predetermined by the teacher (Short, 2009). This requires the

practitioner to relinquish control and trust the students to guide the inquiry (Guccione, 2011). Perhaps in experiencing this trust and confidence from their teacher, inquirers will be more empowered to take meaningful action.

Demonstration: In the demonstration phase, the teacher continues to act as a support by suggesting possible developments that can be made to the inquiry, based on the investigation. Learning is not bound by the teacher's knowledge of the central idea. Instead, learners use research strategies to expand and enhance their inquiry during this phase. The participatory, democratic nature of inquiry is communicated to children here.

This stage has similarities to the Reggio Emilia approach, where the child is seen as a natural researcher and collaborative participant in their learning (Kim & Darling, 2012). Collaboration is highly advocated in pedagogical literature. For instance, Vygotsky (1978) argues that the most favourable space for learning is determined by what can be learned in collaboration with others. Similarly, as cited in Short (2009), Lave and Wenger (1991) reason that the most effective learning occurs within communities where participants work collaboratively toward understanding. Furthermore, in the context of empowerment, Jensen and Schnack (2006) emphasise the need for interdependence and collaborative action when working towards communal goals.

Re-Vision: The re-vision phase involves continuous referral to the central idea. In an environmental inquiry, for example, this central idea could be pollution or sustainability. In making connections between their current and previous learning, learners seek unity and clarity in their thinking. As well as reflection on the journey

thus far, this phase also involves consideration of how it could have been approached differently (Short & Harste, 1996). It could therefore be thought of as self-assessment or self-reflexivity. Naturally, the cognitive skill of critical thinking comes into play here. This phase appears to have similarities to the tension phase in that it can often be characterised by “going back to the drawing board” and identifying how to move forward.

Representation: In this phase, students share their learning with others. This can be delivered through engagements such as reporting, demonstrations and art (Short, 2009). This phase represents a natural point for transdisciplinary learning. Barker and Weller (2006) discuss how children feel empowered when they express their views through a medium that they are comfortable with, such as art, music, drama and writing. In considering the role of the teacher here, who may be under pressure as regards curriculum demands, this phase could pose challenges. While it is important for children to share their learning in a manner that they are comfortable with, if a series of inquiries were to be conducted, and findings consistently presented in this manner, it is possible that other, more challenging areas of the curriculum could be neglected.

In sharing their learning, children offer a voice to the inquiry thus far, in a manner that is natural and comfortable for them. This is supported by the documentation principle of the Reggio Emilia Approach where the value of “going public” on research is appraised (Kim & Darling, 2012). It would seem that going public, in the case of this environmental inquiry, could provide children with the opportunity of gathering an audience, or indeed some momentum, in order to take meaningful action on environmental issues.

Valuation: In this phase, learners explore how their learning from the unit of inquiry is of value to themselves and to their view of the wider world. In the case of this study, I would argue that learning about the impact of human behaviour on the environment could be seen by learners as valuable, given that behavioural change could improve their surroundings and generate better prospects for the future of the planet. Similarly, in taking meaningful action on these issues, and seeing the difference this can make, I would propose that children would see their learning is of value to both themselves and the wider world.

However, perhaps the value of learning here may not be as immediately obvious to children as it might be for the practitioner. I would argue also that this phase may not occur in sequence, after representation and before action. Perhaps it could be later, after they have taken action, or even later in life, that they realise the value of what they have learned. Also, while it might be easy for children to acknowledge the value of the content they have explored, and the skills they have developed, it may prove very challenging for them to consider how concepts have developed. This is an issue that will be further explored in this study.

Action: In explaining what is involved in the action phase, Short (2009, p.24) asks “So what?...what difference does this study make in the broader context of the inquirer and the world?” She states that learners reflect on the difference that their inquiry makes, and consider if future inquiry needs to be conducted. This explanation is problematic for two reasons. Firstly, it does not imply taking meaningful action. To me, it implies reflection, similar to the valuation phase. Secondly then, what constitutes taking action? As Short (2009) continues to elaborate on this phase, she does not identify the types of engagements that might characterise it.

I would propose that taking meaningful action involves a change in behaviour. To me, moving beyond the classroom walls to transfer and apply new understandings- on a local and/or global scale- implies taking meaningful action. In the case of an environmental inquiry, it would seem that engaging in activities that actually aim to tackle the issues of interest constitutes taking action. As outlined in the Introduction, it involves problem-solving and informed decision-making, on issues that are underpinned by conceptual understanding. Perhaps this could involve campaigning, protesting or engaging with relevant authorities and organisations to alleviate the issue. Clarity is needed in the literature as regards what taking meaningful action looks like. I intend to fill this gap in the literature through the current research.

As regards the link between taking meaningful action and empowerment, if learners are taking inquiry-led action as outlined above, this would indicate that they see themselves as an informed, assertive citizens with socio-political ability, that they are empowered (McClelland, 1975). Inquiry-led action is a crucial aspect of EE and empowerment. As Austin (2019) notes, IBL promotes “deep, critical thinking; the deconstruction of currently-held assumptions and preconceptions and formulation of new understandings” (p. 126). Development of these skills, she reasons, is what stirs learners to action and “empowers them to explore the affective and moral dimensions of social justice” (p.134). The fact that learners can be moved to action, having engaged in a unit of inquiry, implies that they are more equipped to engage with societal issues and exercise social stewardship. This would indicate that learning through inquiry could have an impact on children’s empowerment to take meaningful action. The purpose of this study is to clarify the types of engagement that stimulate meaningful action.

Environmental Education

Environmental education (EE) is a pedagogy that involves students in an investigation about the environment to “encourage behaviour change and action” (Thomas, 2005, p.107). Riordan and Klein (2010, p.120), influenced by Robottom(1987) conceptualise EE as a set of pedagogical methods that incorporate “interdisciplinary planning, active investigation of local issues, and robust participation—with students—in activities around environmental improvement” (p.120). They postulate that EE requires teachers and students to collaborate together in seeking solutions to environmental issues. As outlined in the literature on inquiry, participation, collaboration, problem-solving, behaviour change and action are all central to IBL. With this in mind, environmental education is a fitting context for conducting an inquiry.

Lucas (1979) proposed that EE concerns education in, about and for the environment. Fien and Gough (1996) conceptualise these terms. Education *in* the environment seeks to enhance the learner’s awareness of the environment by engaging directly and cultivating a relationship with it. Education *about* the environment relates to building knowledge about environmental process, which informs learners and equips them for participating in debate. Education *for* the environment seeks to encourage a readiness in learners to use environmental resources sensibly. It encourages conservational and sustainable behaviours. Moreover, it facilitates learners in resolving environmental questions, issues, and problems. Education for the environment promotes the “practice of just, participatory and collaborative decision-making” (Fien & Gough, 1996, p.214).

The statement above encapsulates the ideas and concepts of IBL. Furthermore, it resembles the notion of participatory pedagogies which will be explored later in this chapter. Finn and Gough (1996) also note that education for the environment addresses issues related to power relations in society. Again, this point will be further discussed in the context of citizenship and power relations in research.

Direct Experience

The pedagogical value of learning *in* the environment through direct experience has been widely explored in the EE literature. Direct experience (DE) is a concrete, place-based multi-sensory encounter with the environment, in which learners can engage with environmental issues on a physical, intellectual, spiritual and aesthetic level (Higgins, 2001). Through this multi-level engagement with their surroundings, learners develop an understanding of relationships, connections, consequences and interdependence among various environmental phenomena. In the spirit of constructivism, Higgins (2001) argues that “the more ways of knowing an event, the better chance that it will be understood” (p.100). Environmental issues are often complex, systematic and interconnected. Perhaps the nature of, and solutions to, these issues can only be unpacked when learners have this multi-faceted understanding of the environment.

DE in the local environment is an important part of learning through inquiry. Catling (2005) argues that children show an awareness of the quality of their local surroundings and can offer clear opinions on what improvements the locality would benefit from. Tapping into this knowledge and understanding will likely give children a point of reference for conducting an inquiry. Alternatively, it could spark an interest for

conducting the inquiry in the first place, similar to the connection phase of TAC (Short & Harste, 1996). As Short (2009, p.18) highlights, inquirers “learn *in* experience, not just *from* experience”. By exploring and caring for environments that are relevant to their lives, learners can then connect these local areas to a broader context, and relate to other people elsewhere caring for their surroundings too (Noddings, 2002). Barlow (2013) also emphasises the value of DE in IBL, stating that it offers learners an opportunity to connect with their natural and built surroundings, and creates an impetus for further investigation, or a “need to know” (p.121).

Engaging with the local enables children to foster a sense of ownership and belonging to the locality (Catling, 2005). Moreover, it serves as an immediate, accessible example of environmental issues. It provides the children with a holistic approach to learning, as advocated by the literature on inquiry above. In light of this, I would argue that without direct experience of the local, environmental issues would likely appear abstract and disconnected from the child’s life, and thus children would be less likely to take action. Based on these findings, I aim to begin the inquiry in the local environment and to observe if this has value in developing the inquiry.

According to Hoban and Romero-Severson (2011) a constant challenge in EE is to cultivate learner engagement with the environment, or, in Lucas’ (1979) terms, learning *in* the environment. They propose that this challenge can be addressed by making connections between classroom material and the environment. When connections are established and environmental issues contextualised, more comprehensive, “high quality learning” (Hoban and Romero-Severson, 2011,p.39) occurs. Hope (2009) concurs with this and echoes Short’s (2009) theory on tension, stating that when previous and current learning are connected, students can then

challenge preconceptions and gain clarity in their thinking. Hope (2009) regards DE as an important mode of interdisciplinary learning, which fosters transferable skills.

Other than enabling students to make connections between theory and practice, Hope (2009) also proposes that DE can emotionally appeal to learners, causing them to be more invested in, and sympathetic towards their environment, therefore willing to defend it and act on its behalf. Though he endorses DE in promoting empowerment, his findings on the effectiveness of DE are mixed. He draws attention to the issue of individual difference, stating that DE may not be successful in empowering everyone. Indeed, Nairn (2005) disputes the value of fieldwork with children in the context of critical environmental issues. She reasons that the issues addressed are often bigger and more powerful than the learner and ultimately out of their locus of control. Although not explicitly stated, it is implied here that fieldwork could have the counter effect of disempowering children. Summers, Corney and Childs (2003) refer to this notion as “learned helplessness” (p.336). Nairn’s (2005) concerns are very relevant to this research, given the probability that complex environmental issues will be explored with the community of inquirers. I will address managing these challenges later in this paper.

In this study, I intend to observe the value of direct experience in the inquiry process. Furthermore, I will explore if it is a necessary prerequisite to taking action on environmental issues. Finally, I will establish if children see DE as a valuable part of learning about environmental issues.

Affective learning

Hope (2009) highlighted that learners will be more likely to defend their environment when they are emotionally engaged with it. Here, he alludes to the role of affective learning in inspiring meaningful action on environmental issues. Affective learning is the emotional response to tasks (Ampuero, Miranda, Delgado, Goyen, & Weaver, 2015), developed through intimacy and connection with nature (Selby, 2017). It concerns the values and attitudes that are developed through learning.

In exploring children's affective engagement with the environment, Selby (2017) coined the term "vernacular learning" (p.9) He describes this as "place-based learning rooted in close intimacy and connection with the natural world, with nature perceived as being intrinsically valuable." (p. 9). He highlights the need for nurturing emotional kinship with nature, of fostering a sense of joy and wonder in the learner for cultivating an ethic of consideration for the environment. It appears that biophilia, what Wilson (2002) describes as "a love of life and lifelike forms" (p.137), could emerge as a result of vernacular learning.

According to Noddings (2016), biophilia and a protectiveness for the environment should emerge when learners identify initially with their local surroundings. When the seeds of biophilia are sown locally, and when an acquaintance with the environment is nurtured by the practitioner, this protectiveness will extend to the wider world. A sense of ethical fellowship and ecological justice should emerge then, where the earth is recognised as everybody's home (Noddings, 2016). Smith (2007) concurs and states that without knowledge of the reciprocal bond between nature and human behaviour, "there is little chance that the forms of care essential to environmental and

social stewardship will emerge” (p.192). Kingsnorth, (2012, para 8), in considering how things would look in the absence of an emotional connection with nature, states that “any campaign to protect the wild world which avoids acknowledging our intuitive, emotional relationship with it” will fail.

Clearly, the EE literature strongly advocates promoting an emotional engagement with the environment, and argues emphatically that in its absence, endeavours to protect the environment will be unsuccessful. It would appear that indicators of emotional engagement will involve a sense of wonder, joy, love, and care for the environment. Empathy is also relevant and this will be further discussed at a later stage.

Though the IBL literature advocates a holistic approach to learning, where children are inquiring about issues relevant to their lives, it does not explicitly refer to the role of affective learning in taking meaningful action. In this study, I will elucidate how affective learning might be manifested through the inquiry process, and if it facilitates or enhances the inquiry.

Cognitive learning

Cognitive learning concerns knowledge and development of mental skills (Ampuero et al., 2015). It is characterised by critical thinking, which is “a commitment to reasoned rationality” (Roberts, 2015, p. 56). In the case of an environmental inquiry, cognitive learning materialises in asking questions, wondering, problem-solving, contemplating possibilities and challenging preconceptions. These skills are heavily endorsed in the IBL literature, and are particularly relevant to the tension and

re-vision phases of TAC (Short & Harste, 1996). Again, I will be watchful for evidence of these skills throughout the inquiry process.

Ampuero et al.(2015) conducted research to identify how the cognitive and affective domains were utilised when children were addressing local environmental issues. In particular, critical thinking and empathy were explicitly taught and then promoted through engagements in the local environment. Subsequent to this intervention, children reported feeling a greater capacity to solve environmental problems. In light of this, the authors suggested that by activating the affective and cognitive domains, a citizenry that is more informed and empowered to tackle complicated environmental problems could be fostered.

It appears from the literature above, that stimulation of both the cognitive and affective domains is beneficial for taking meaningful action on environmental issues. In this research I aim to promote engagements and initiate discussions that will activate both domains. It would seem that the synthesis of both domains, a fusion of cognitive and affective learning, would be an ideal way of approaching this study. As Krapfel (1999, p.57) notes, without acknowledgement of this interconnectedness “we will miss the opportunity to practice both experiencing and teaching the two components as one fused entity.”

Environmental Education, inquiry and empowerment

Wee, Fast, and Shepardson (2004) strongly advocate adopting an IBL approach to EE, stating that it stretches learners beyond practical experiences so that they are facilitated in exploring new phenomena, contemplating various possibilities, and synthesising what they have discovered to formulate new learning in science. They

describe IBL as an exciting and innovative pedagogy for EE. This is a strong argument for adopting an IBL approach to EE.

Catling (2014) offers practitioners four suggestions for empowering children through EE. Though not explicitly stated, he advocates an IBL approach. Firstly, Catling (2014) emphasises the importance of learning being child-directed, where children lead the investigation with support from the practitioner. Adopting a child-centred approach to learning is one of the hallmarks of IBL. Secondly, he describes children and practitioners as co-learners, who work in partnership. This resembles the idea of participatory pedagogy, which will be discussed at a later stage. Thirdly, Catling (2014) highlights the need for EE to extend beyond the classroom into the community, where children can engage with their families, local authorities and activists to gain a more comprehensive insight into the issue of interest. This is advocated by Hope (2009) and in the IBL literature (Barlow, 2013). Finally, he emphasises the need for children around the world to share environmental experiences with each other.

Sharing of experiences in this way would have many benefits. It could serve to promote empathy and to widen the audience reach in relation to environmental issues that the child sees in her locality. Finally, it could also broaden understanding of environmental issues in other places. In the context of this inquiry, and given technological age in which we live, sharing experiences would be achievable and beneficial.

The Geographical Association (2009) draws clear parallels between geography education and empowerment. Geography, it reasons, allows children to “make sense

of their world, and to face the challenges that will shape our societies and environments at the local, national and global scales” (p.13). Catling (2014, p.353) concurs, stating that “Geography is not, and cannot be, value-free, as the range of views on exploitation of and care for the world amply indicate, whether for self-interest or altruism.” Similarly, Austin (2019) reasons that geographical learning can empower children and young people, making possible their agency, participation and action.

The above sections have explored the themes of IBL and EE. Inquiry has been identified as a child-centred, participatory, democratic approach to learning. Environmental education, through its endorsement of DE, cognitive learning and affective learning, has been identified as a suitable context through which inquiry can take place. Can the combination of this approach and context empower children to take action on environmental issues? The section below addresses this question. Empowerment will be defined and indicators of empowerment will be examined. Equipped with this information, I will be well positioned to identify if empowerment to take meaningful action emerges in this study.

Empowerment

Empowerment is an interactive process between the individual and environment, during which the perception of oneself as powerless develops into the recognition of oneself as an assertive, informed citizen with socio-political ability. Empowerment fosters a capability to participate with others, to cope with frustrations and to act for influence over the environment (Keiffer, 1984). McClelland (1975) posits that empowerment is a collaborative process, during which individuals work with others for

change. The focus on participation, collaboration and coping with frustration in these definitions resembles an IBL approach.

The concept of empowerment has historical roots in the work of Patrick Geddes, a social evolutionist who regarded education as the vehicle of social change. Geddes believed education prompts the active process of citizenship, which should ultimately initiate social change (Sutherland, 2009). In describing citizenship as an active process, Geddes appeared to have a premature understanding of both inquiry and empowerment.

Citizenship

Neale (2004) defines citizenship for children as “an entitlement to recognition, respect and participation” (p. 13), which can be fostered in all children. The theoretical underpinnings of inquiry are patent in his assertion that citizenship prospers through social interactions and experiences. Citizenship involves taking action on one’s own and others’ behalf, to play a role in resolving significant societal issues (Pufall & Unsworth, 2004). A focus on taking meaningful action is highlighted in EE and IBL literature, as outlined above. When children identify areas of interest, they exercise autonomy and agency in their learning, which can inspire them to take meaningful action. Environmental education, therefore, is a favourable context through which children can enact citizenship.

According to Heater (2004), citizenship encompasses a sense of community and connection, as well as a sharing of interests. Interestingly, this resembles Short’s (2009) and Garrison and Akyol’s (2013) conceptualisation of a community of inquiry.

Similarly, Catling (2014) also emphasised the importance of engaging with community for empowering children in EE.

Smith (2010) posits that citizenship in childhood has four fundamental components, namely membership, rights, responsibilities and equality of status, respect and recognition (Figure 2.2)

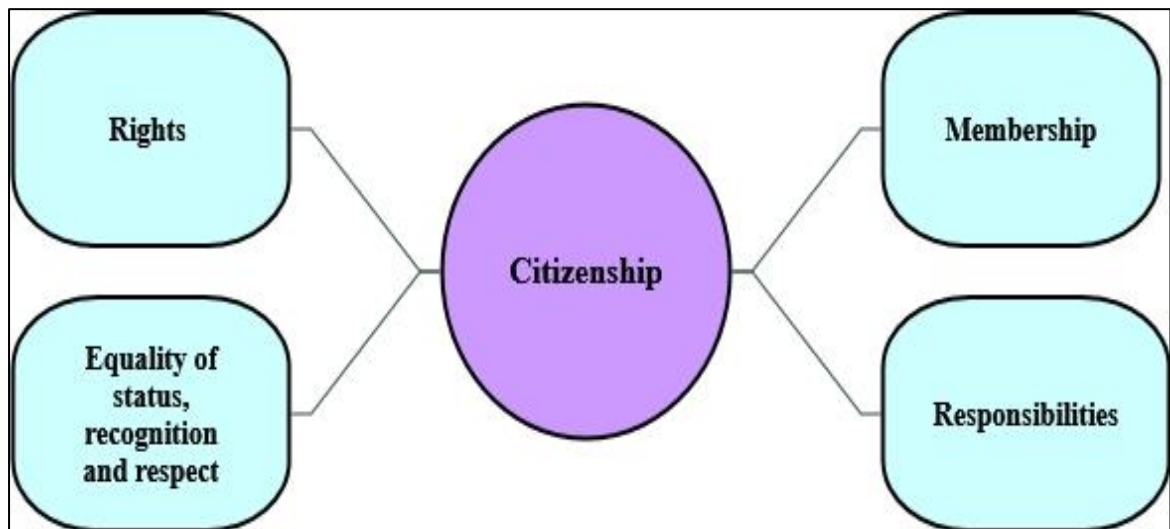


Figure 2.2 Smith's (2010) components of citizenship

- **Membership:** This concerns a child's sense of belonging, which is developed by reciprocal relationships, respect and acceptance. Acknowledgement of children as members of the community develops their political identity and sense of democratic duty.
- **Rights:** Rights, particularly participation rights, facilitate children in being democratically active and in exercising their civic duty (Theis, 2009).
- **Responsibility:** This includes both responsibility to obey the law, and one's responsibility to family, school, or work. Roche, (1999) and Smith (2010) caution, however, that children's responsibilities do not necessarily equate to those of adults.

- **Equality of Status, Recognition and Respect:** This final component identifies significant aspects of citizenship. They state that some children do not accomplish these components of citizenship, particularly if they are members of minority groups.

As outlined in the Introduction, Waldron & Oberman (2016) draw attention to the over-emphasis on children's responsibilities as opposed to rights in the Irish educational context. They note that this over-emphasis is evident in the SPHE curriculum but also in other initiatives such as the Green Schools programme. This programme, they caution, endorses child participation solely for the purposes of environmental conservation and not for the purposes of their empowerment or citizenship.

Waldron & Oberman (2016) conclude their study by noting that citizenship education in Ireland is characterised by a "distancing of rights issues from classroom contexts; a focus on child welfare over participation; and a prioritisation of child duty over entitlement" (p.755). This implies that neither critical thinking nor participation are promoted in citizenship education in Ireland, that children are not encouraged to ask questions about their rights, but more to accept their responsibilities. In this study, I will bear in mind that for real and authentic citizenship to be promoted, and thus for empowerment to prevail, we will need to strike a balance in exploring rights and responsibilities. Similarly, in light of the research above, and the underpinnings of inquiry, participation and critical thinking will be promoted in this study.

Waldron and Oberman (2016) also question if society views children as current or future citizens. Catling (2014) notes that those who view children as future citizens believe that "children are not really proper people; they have to 'grow up'" (p.351).

Furthermore, Smith(2007) cautions that children are seldom considered capable, mature or responsible citizens who have the capacity to partake in societal decision-making. Alternatively, they are regarded as future citizens, who are being developed and moulded for their prospective role in society. It is interesting that adult's citizenship, however irresponsible or immature it may be, is rarely under scrutiny (Theis, 2009).

How can teachers overcome these issues, and communicate to children that their opinions and their membership of society is valuable? Shier (2009) proposes that more consistent, long-term, daily dialogue with children will foster a sense of partnership and collaboration between adults and children, and thus a stronger sense of citizenship. Both Shier (2009) and Davis (2007) criticise the one-off, tokenistic gestures that often characterise adult-child consultations. Also condemned by Theis (2009) and Neale (2004), are the lack of resources for long-term partnership, and the overall lack of respect for children's opinions in such consultations.

In light of the points made in the literature above, I would theorise that both adult and child culture require a transformation in its conceptualisation of citizenship. Perhaps this transformation can begin through promoting active citizenship in our classrooms so that it can ultimately permeate into society. A learning environment which promotes the characteristics of inquiry, through collaboration, mutual respect, participation and decision-making can drive this transformation. This will surely build a stronger, interdependent and egalitarian citizenry. Membership of such a community would surely empower children to take meaningful action on environmental issues.

Participation

Children's participation in decision-making is defined by the Department of Children and Youth Affairs (2015), as "the process by which children and young people have active involvement and real influence in decision-making on matters affecting their lives, both directly and indirectly" (p. 20). The report also states that participation in decision-making bears a host of benefits for the individual and for society. It enhances children's protection, self-confidence and communication skills and develops higher-order skills such as networking, negotiation and making judgements. Again, these skills are fundamental to IBL. In terms of societal benefits, and consistent with the literature on citizenship, children's participation in decision-making promotes active citizenship, social inclusion and empowerment.

Participatory Pedagogy: The idea of mutual participation in teaching and learning has been coined "participatory pedagogy" (Simpson, 2018, p. 7). Participatory Pedagogy is a continuous process of co-learning where a sense of equality, democracy, co-agency, and a collective responsibility for learning is promoted. In a mutual endeavour to learn more, children and teachers shape the inquiry. Collectively, they identify what they want to inquire about, design engagements, select resources, choose how to share their findings and take action (Simpson, 2018). These engagements, which are collaborative and interactive, enable children to take ownership over their learning. As outlined above, participation is a key element of learning through inquiry and empowerment.

Hart's Ladder of Participation (1992): When participatory pedagogy is initiated, children evolve from passive dependents to active agents in their learning. Hart's

Ladder of Participation (1992) illustrates the evolution from non-participation to child-directed participation. As illustrated in Figure 2.3, the bottom steps represent tokenism and manipulation, followed by the middle steps which indicate that children are consulted and informed. The highest steps are characterised by participatory pedagogy, where learner-initiated engagements and decision-making in partnership with adults occur (Bahou, 2012). Relatively speaking, learners will experience the highest levels of empowerment at this level. This level is also characteristic of an IBL setting, given that child-centred learning is occurring, through which learners are experimenting, defending positions, collecting data, synthesising information and taking action.

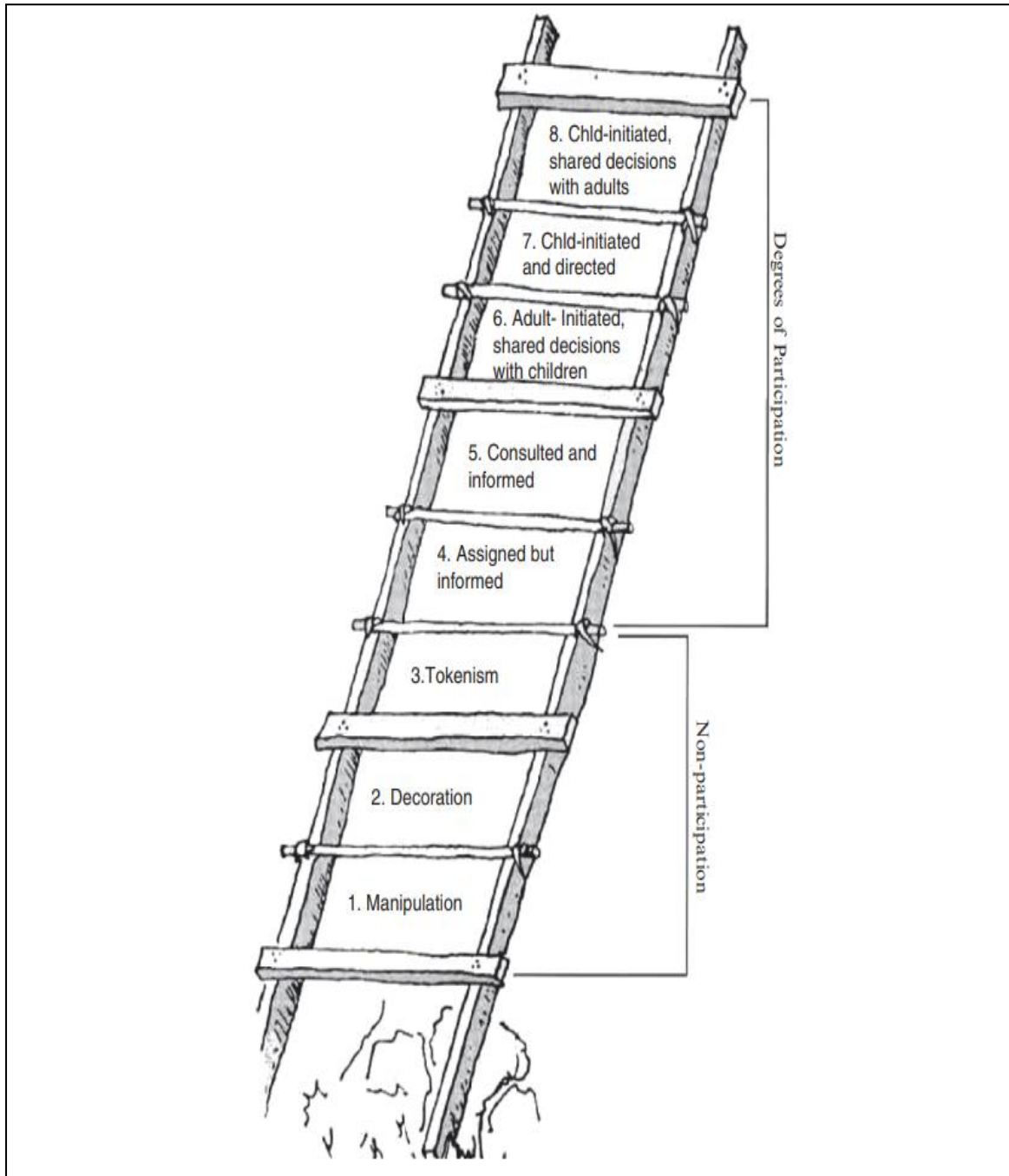


Figure 2.3 Hart's Ladder of Participation (1992). Adapted from "Children's Participation: From Tokenism to Citizenship." UNICEF Innocenti Essays, No. 4, Florence, Italy: International Child Development Centre of UNICEF.

Intrinsic motivation is surely required when learning at the higher levels of the ladder. I would argue that this is not necessarily the case with every child in a

community of inquiry. Moreover, I would imagine that levels of intrinsic motivation may vary in one unit of inquiry versus another and one age group versus another. Perhaps it is idealistic to assume that the entire community can continuously learn at the higher levels of the ladder. Furthermore, Hart's (1992) model does not address how children can move from one rung of the ladder to the next. In the case of this inquiry, I will carefully examine the factors that are influencing movement around the rungs of Hart's Ladder in the community of inquirers.

Overall, a limited amount of research has been conducted on the effectiveness of participatory pedagogy. However, Simpson (2018) investigated its integration into the primary classroom and established that when children had more involvement in decision-making, they were more motivated, engaged and invested in their learning. Teachers reported that learners were generally performing at the same level academically also. Therefore, offering children more autonomy and choice did not appear to have any negative effects.

The concept of participatory pedagogy has impacted on the design of this study. An extensive body of literature, which condemns research *on* instead of *with* children, has emerged in recent years. Barker and Weller (2003) urge researchers to promote more authentic and genuine participation of children as opposed to having a more tokenistic approach, where children play a decorative role. Undoubtedly, a more collaborative, co-operative, participatory model will produce truer, more authentic results and enhance a child's sense of empowerment. This will be further discussed in the Methodology chapter.

Challenges to empowerment

Considering issues that could challenge the emergence of empowerment was an important aspect of the research prior to conducting this inquiry. By investigating the literature to identify how these challenges could be addressed, I felt I would be better positioned to manage them, should they arise.

Jensen and Shnack (2006) caution approaching environmental issues with an individualistic mindset. They argue that, by having this approach where individual actions are endorsed (e.g. turning off the lights), children will fail to grasp the importance of having a more wide-scale, communal, co-operative approach to these issues. The authors also highlight that this approach does not teach the reality and gravity of environmental issues. The importance of social action is encapsulated here. Moreover, challenges to empowerment could also emerge if learners have encountered negative feedback from other citizens in previous environmental endeavours. This could impede action competence, which is the ability to act in response to societal issues (Jensen & Schnack, 2006).

It is also conceivable that learners could be overwhelmed by the scale of environmental issues, given that solutions are often complex and out of their remit. Perhaps bombarding students with the scope and gravity of these issues could inhibit empowerment (Nairn, 2006). Conversely, however, Grunsell (2007) argues that children have the fundamental right to know that their quality of life, and indeed their fate, is governed by decisions made by themselves and others in the world. Their future is wholly interconnected with the actions of others and an understanding of this inextricable link is vital (Grunsell, 2007). He reasons that children will be empowered

when they are given a full and comprehensive insight into the issues, when they are treated as citizens, just like adults. Grunsell's (2007) ideas link closely to the aforementioned theory on citizenship, particularly in relation to children's rights.

Similarly, Higgins (2001, p.99) states that "most human interactions (with others, as well as the natural and modified environment) are complex. Understanding this world, and living and working within it, requires awareness of relationships, connections and consequences" (Higgins, 2001, p. 99). In light of this, I would argue that there is significant pedagogical value and life-learning in managing this complexity, instead of ignoring it.

Clearly, the literature is quite inconsistent in its advice to educators for managing threats to empowerment. Could the process of inquiry assist the community of inquirers in managing these challenges? As aforementioned, tension is a characteristic of inquiry. Learners collaborate, discuss, question, problem-solve, take risks and reflect in order to surmount these challenges. This process allows them to arrive at a deeper, more involved and comprehensive understanding of a concept. Perhaps the inquiry process itself can equip children to address and alleviate challenges that may arise.

Given the lack of clear direction on how to manage threats to empowerment, I have concluded that framing these challenges as a part of the process that can be overcome is the best way of proceeding. However, in this research, I aim to clarify how threats to empowerment can be managed so that children will be in a position to take meaningful action.

Conclusion

This review of literature explored the themes of inquiry, EE and empowerment. The IBL literature advocates a child-centred, participatory, collaborative and problem-solving approach to learning. It promotes agency and active citizenship, which would imply that it is a suitable approach for empowering children to take meaningful action. EE, given its endorsement of direct experience, cognitive learning and affective learning, has been identified as a suitable context for an inquiry to take place. The concept of empowerment has been examined and paralleled with IBL and EE literature. Given that this concept has been considered with an IBL approach and an EE context in mind, I am now equipped to identify empowerment, should it emerge in this study. Potential threats to empowerment have been flagged, so that they can be managed effectively, should they arise.

The themes have been discussed in parallel where appropriate, to give a clear indication of the approach, context and aims of this study. Reviewing the literature has ensured that I am well positioned to conduct this research and ultimately fulfil the aim of this study. This is to identify how inquiry might empower children to take meaningful action on environmental issues.

Chapter 3 Research Methodology

In this chapter, I will outline the research design of this study, present the rationale for a qualitative research approach and evaluate the methodologies used.

Additionally, I will reflect on the methodological considerations, ethical considerations and limitations of the research design.

Rationale for study design

Using a qualitative approach

At its centre, research is rooted in methodical, organised, impartial inquiry (Lucas, Fleming, & Bhosale, 2018). According to Grove and Overton (2013), qualitative research investigates the experiences of a small number of individuals, without predicting an outcome. In order to answer an open-ended question, it examines a situation in-depth, so as to enhance understandings and insights of people's experiences.

As opposed to quantitative methods, qualitative methods are more effective for enabling children to communicate in their own terms (Barker & Weller, 2006). Moreover, adopting a child-centred approach to qualitative research allows children to communicate more freely and to express their views and opinions in a way that is comfortable for them. Given the themes of my research questions (IBL, empowerment and EE), and my intention to adopt a child-centred approach to the inquiry, it appears that a qualitative approach would be most appropriate for this study.

In light of the theoretical, philosophical and methodological underpinnings of its approach, as outlined below, I have chosen to conduct a case study for the purposes of this research.

Theoretical underpinnings of case studies

According to Baxter and Jack (1990), a case study examines a phenomenon in context, using a variety of data collection methods. Yin (2009) classifies case studies as explanatory, exploratory or descriptive. Lucas et al. (2018) distinguish between these categories of case studies as follows: An explanatory case study aims to determine causal links that are too complicated for experimental strategies; a descriptive case seeks to explain the phenomenon within the context it took place; an exploratory case study examines contexts in which the case in question (i.e. the inquiry) does not have an obvious or single set of outcomes. I would classify this study as exploratory because in having a broad and child-led approach to the inquiry, through which issues of interest will organically emerge, having an obvious or single set of outcomes would be incongruous with both the aims of this study and the nature of inquiry.

Yin (2009) reasons that case studies provide a rich, holistic insight into the cause and effect of a phenomenon. Cause and effect are observed in context, abound with the “real life, complex, dynamic and unfolding interaction of events, human relationships and other factors in a unique instance” (p.289). A case study provides the researcher with a more comprehensive insight into why and how things happen. Moreover, case study research facilitates describing, explaining and exploring phenomena in context (Yin, 2009).

Thus, I chose to use this approach, in order to best identify not just what was happening in the community of inquiry but how and why it was happening too. Given the scope of the themes, examining the relationship between cause and effect allowed me to consider what engagements in the inquiry were causing learners to take action.

Philosophical underpinnings of case studies

Case study research is philosophically rooted in the constructivist paradigm. Knowledge is constructed in the context of social experience, where understanding and meaning are developed (Merriam, 1998). Adopting this stance, the objective of the qualitative researcher is to gain an insight into the meanings and understandings that are constructed by people. In the case of this inquiry, I was interested in ascertaining how the learner's experiences contributed to their construction of knowledge and understanding of environmental issues and empowerment.

Methodological underpinnings of case studies

As Lucas et al. (2018) point out, a case study provides the researcher with the opportunity to examine a phenomenon through a "variety of lenses" (p.216), which facilitate inductive and iterative reasoning. It facilitates the researcher in exploring and dissecting complicated human experiences and situations which are unlikely to have a precise or singular result. Therefore, flexibility in choosing the optimum methods for answering the research question is necessary. Given the broad and child-centred nature of inquiry, the age of the sample, the scope of the themes of this research, and the various preferences of the sample regarding how learning would be presented, this flexibility was paramount.

Methodologies used

Setting

Scoil na Mara is a mainstream, all-girls school. The school is located in Seaview, Dublin. The school is located close to Summerville Beach and beside Pinewood Park. Names of locations, community activists and children have been anonymised to protect the identity of those involved in the research.

Sample

This research sample was comprised of 25 students in 6th class, aged between 11 and 12 years. 17 participants live in Seaview. 8 children live in nearby suburbs. The sample was chosen by purposive sampling. I chose to work solely with my class because of ease of access to this sample and because of my relationship with the children. This relationship will be further discussed later in this chapter. I considered expanding the sample, but felt that this would not enrich the data, given my limited knowledge of dynamics, interests, difficulties and personalities of children in other classes. Moreover, given my role as class teacher of the sample chosen, and the fact that I have studied IBL, I felt it would be a risk to validity and reliability of the data if another class were to be included.

Research Instruments and Protocols

TAC (Short & Harste, 1996): I used this cycle as a planning tool because it is logical, comprehensive and accessible. The children used the cycle as a guidance system as it can be accessed, discussed and evaluated in a child-friendly manner. Using this guide, I envisaged that they would observe how their inquiry was evolving

and progressing through the phases of the cycle. Figure 3.1 illustrates a child-friendly version of the cycle, which was disseminated to the community of inquiry.



Figure 3.1 A child-friendly version of The Authoring Cycle (Camire, 2012)<https://www.scribd.com/doc/240964700/inquiry-cycle-kathy-short-by-alison>

Qualitative observations: “The immediate thoughts, questions and feelings of the observer as well as what he or she observes” (Grove & Overton, 2013, p.24), were documented throughout this inquiry. As Morrison, Cohen and Manion (2011) note,

observations allow researchers to discern continuous behaviour as it occurs and make fitting notes about its perceived significance. While I was aware that this could potentially be distracting, I felt this was outweighed by the benefits of recording non-verbal communication such as hand gestures, facial expressions, body language and interactions between participants. Qualitative observations were recorded in a reflective journal and daily field notes. The reflective journal provided clarity on my thinking and facilitated me in linking theory to practice. Field notes allowed me to identify areas which warranted further investigation and to recognise when guidance was required by the participants. Figure 3.2 shows an example of the format and detail of field notes.

Date	Context	What's important?	Descriptive	Reflective	Code
7.10	- Media coverage on whale washed ashore on [redacted] beach after storm - Visited beach to observe	Level of empathy/disappointment expressed by children-interesting Enthusiasm to go to the beach- also noteworthy IWDG-eager to do further collaboration; eager for story to be shared Child-led- rubbish observed by children and discussion initiated by children	Talk and discussion- disappointment re death of whale, what might have happened that it couldn't get out of shallow waters, interest in it being so close EE-contacted IDWG and Interpretive Centre asking if it was possible to visit the site where whale was washed up. Visited the beach before whale was buried. Presentation- IWDG gave a short presentation on fin whale, spoke about age and size of whale and reasons for it swimming into shallow waters (breathing difficulties), discussed how the blubber would be tested for various materials Interview- Irish Whale and Dolphin Group (IWDG) and representative from DCC re marine life in Ireland, effects of pollution on animals Walk- on the way back to school and in classroom, a group of children commented on the volume of plastic rubbish on the beach and the lack of bins for disposing it in. Class theorised that there was probably more than usual given the storm two days before. My observations	IBL/EMP- wondering and questioning re abnormal behaviour of whale EE- a lot of interest re biology/injuries/structure/adaptations of whale EMP-CIT- communicating with others in the wider community; learning more about role of IDWG and DCC in caring for marine life EE/EMP- observations made re pollution, discussion regarding how this has occurred; variety of waste etc. Discussion re the effect on <u>env</u> and marine life and what can be done to address the issue	IBL/EMP EE EMP/CIT EE/EMP

Figure 3.2 Field notes from initial visit to the beach

Work samples: Given that the inquiry was child-led, the children chose how to present their work. Therefore, work samples were produced across a spectrum of

media in a variety of curricular areas. Work samples were created individually and collaboratively in the field, in the classroom and at home.

Photographs: Photographs were captured of the children “in action” at various stages of the inquiry, which allowed for authentic learning to be captured. Also interactions between the children, facial expressions and body language could be examined using this data.

Class discussions: A total of 23 discussions were conducted during this inquiry, 21 of which were recorded. Each group was given a locked phone which allowed them to record their interactions. Details of these discussions are outlined in Figure 3.1.

Table 3.1

Class discussions involved in this study

Date	Length	Context	Location ²	Present ³
3.10	15:00 ⁴	Article about whale		
7.10	1:00 ⁴	Visit to beach to see	Beach	Colleague, IWDG
13.2	06:33	Seaview trail	Village	Colleague
19.2	12:40	Trip to City Farm	Park	Bob, Mary, Gerry
25.2	02:33	Discussion before trip to		
25.2	07:05	Introduction to TAC		
25.2	20:00	Presentation at IC	IC	Colleague, Tom

² Locations other than the classroom

³ Additional personnel present during discussions. The children and I were present for all engagements

⁴ Approximate times given for unrecorded discussions

26.2	10:00	Reflection after IC
27.2	10:00	Inquiry and JEP
27.2	10:00	Planning and
1.3	19:54	Forming groups
2.3	23:12	BG
2.3	21.49	MAG
2.3	12.27	BCG
2.3	21.25	EOG
2.3	14.06	MG
4.3	32:19	Reflection on
4.3	03:31	BG update to class
5.3.	03:29	Beach clean and Beach Colleague
6.3	37:15	Reflection on inquiry thus
9.3	24:54	Brainstorm for moving
10.3	33:47	Value of inquiry
11.3	29:40	Update and reflection on

Rationale: Discussions are an integral part of every subject on the curriculum, so for this reason, children were well acquainted and comfortable with this process and its conventions. Throughout the academic year, I had observed that a dynamic that was conducive to open, uninhibited and frank discussion abounded among these children. For this reason, class discussions were chosen as a means of collecting data, instead of a contrived situation (e.g. focus groups or interviews). This allowed for issues of interest to the inquirers to emerge organically.

The objective of the discussions was to gain a deeper, more comprehensive insight into the learner's views on the themes of the research questions (i.e. empowerment, inquiry and environmental issues). I believed that the content of the discussion would provide clarity on thought processes, interactions and engagements that occurred throughout the unit of inquiry.

Format: Class discussions were recorded in the classroom and in the field. Instead of a traditional “question and answer” interview format, where the researcher's agenda could predominate, a series of prompts and questions, in the form of a semi-structured interview schedule, were listed prior to each discussion. The schedule was informed by previous qualitative observations. In light of Grove and Overton's (2013) advice that overly-exact, specific questions can result in a laboured, stilted discussion, questions drafted were flexible and broad, so that the discussion could take an authentic path.

Considerations: Morrison et al. (2011) note that discussions often provide insights that may not have been accessible in a standard one-to-one interview. Breen (2006) also reasons that discussions are more suitable than interviews if the aim is to produce new ideas within a social context, which it was in this case. Conversely, however, interviews delve into the participant's personal experience, prompting self-reflection on topics that could be otherwise modified if social pressure were to influence the participant in a group (Breen, 2006). This issue of social desirability is important point to note, particularly given the age profile of the sample. I considered that participants could answer questions with what they felt was the “right answer” or perhaps express opinions that over inflate their pro-activity or even their interest in environmental issues. To combat this problem, I reinforced that there were no “right

answers” and that, as the researcher, I was interested in gaining an insight into their genuine feelings on the topics explored.

In facilitating the discussion, my relationship with the children, and thus my knowledge of the dynamics and personalities in the group was advantageous. Contrarily, a disadvantage was their possible awareness of my personal views on some of the matters being discussed. Though I had considered inviting another practitioner to facilitate the discussion in order to mitigate this issue, I felt the benefit of doing this was outweighed by my relationship with the children.

Research sites

The unit of inquiry took place in the field and in the classroom. The research sites in the field are outlined in Table 3.2.

Table 3.2

Research sites for data collection

Date	Context	Location
7.10	Visit whale on Summerville	Summerville
13.2	Seaview Trail	Seaview
19.2	City Farm and Horticulture Centre	Pinewood
25.2	Presentation at IC	IC
25.2	Beach visit	Summerville
5.3	Beach clean and investigation	Summerville

Data Handling: Discussions were transcribed and imported using NVivo 12 plus, qualitative data analysis software. Thematic analysis was conducted, through which data were coded and categorised. NVivo housed audio files, transcripts and documents associated with this study.

Data analysis: Work samples, photographs, discussion transcripts and qualitative observations were analysed using the constant comparative method. This consisted of seven phases: organising the data, immersion in the data, identifying categories and themes, coding the data, developing interpretations through analytic memos, considering alternative understandings and finally, writing the report (Marshall & Rossman, 2010). Dominant and recurrent themes were established and combined to comprise categories of meaning, and then re-assessed. Findings were presented corresponding to themes identified in the literature review.

Methodological considerations

Transparency: Data were clearly and methodically coded using NVivo 12 Plus. Transparency was ensured also in the way that all data was contained in one file on this data analysis software. Access to this would ensure the study, including its data coding, could be repeated (Grove & Overton, 2013).

Triangulation of data: Triangulation refers to the examination of patterns of convergent views (Grove & Overton, 2013). Examining the various data sources such as work samples, discussion transcripts, photographs and qualitative observations ensured that data were triangulated.

Reflexivity: Reflexivity relates to how the researcher's background, values, beliefs and relationships will impact on data obtained (Grove & Overton, 2013). Though it is impossible to entirely remove subjectivity from any qualitative research, a continuous process of reflexivity assisted me in managing this issue. I consistently reflected on data obtained and considered how it could be influenced by my views, expectations and relationship with the children. I was also cautious about expressing my personal opinions throughout the inquiry.

Respondent Validation: Grove and Overton (2013) describe respondent validation as clarification with participants regarding what was meant by their statements if they were unclear. Participants were invited to elaborate or explain statements that were made, when this issue arose.

Ethical considerations

A proposal for this research was approved by Marino Ethics in Research Committee (MERC) and subsequently conducted in accordance with its guidelines. A number of ethical issues were considered in proposing, planning and conducting this study, as outlined below.

Freedom from harm: Grove and Overton (2013) who cite “freedom from harm” as the most important ethical consideration when undertaking qualitative research, state that:

A good researcher will bear in mind that discomfort, offence, confusion and even boredom can count as harm, and will be careful to avoid anything remotely crass or insensitive, or even just disordered and careless in the enquiry that they are designing (p.40).

In light of this, discussions regarding empowerment and the gravity of environmental issues, which could potentially evoke despair or helplessness, were approached with care and sensitivity. By conducting the inquiry in a participatory, collaborative manner, where children were guided and supported where necessary, this issue was minimised.

As regards freedom from physical harm, children were reminded of road and water safety. Additionally, they were reminded not to pet wild animals or wander from the larger group. In order to minimise the risk of physical danger, at least two adults were present during fieldwork engagements.

Consent: Permission was sought from the BOM of Scoil na Mara (Appendix A). When the research was approved, letters of parental and child consent were

disseminated (Appendix B, Appendix C). Anonymity, freedom to withdraw from the process, and adherences to GDPR, data storage and child protection regulations was assured in this correspondence. Children were invited to choose pseudonyms to maintain anonymity. Data were stored on a password-locked computer and work samples were stored in a locked filing cabinet away from the school. Finally, letters of consent assured that data would be destroyed eighteen months after receipt of results.

Power relations: Without doubt, power relations between adults and children impacts on how empowered a child may feel throughout the research process. Adults, due to their increased life experience, societal status and institutional standing, have greater power over children (Morrow & Richards, 1996; Valentine, 1999). This power disparity can be exacerbated when research is conducted *on* instead of *with* children, where children are the subjects instead of objects of investigation (Barker & Weller, 2003). This exacerbation is compounded then, if research is conducted in a space where children are subjects of a power imbalance on a continuous basis (i.e. at school) (Barker & Weller, 2003).

To minimise the power imbalance, I took a number of precautions. I invited children to choose their own pseudonym for work samples, which had the dual purpose of maintaining anonymity giving them more autonomy and ownership over their work. Additionally, having a child-centred approach to the research allowed the children to communicate more freely and to express their views in a comfortable, uninhibited manner. Finally, the very nature of the research themes (i.e. empowerment, citizenship, environmental issues) was a constant indication of the power imbalances

that children can potentially experience. This was an explicit reminder to monitor and manage any existing power disparity.

Limitations of the research design

Limited generalisability

Well documented in the literature is the issue of limited generalisability in case study research. A case study is a unique snapshot in time, with a specific set of circumstances, relationships and contexts (Morrison et al., 2011). Therefore, the findings are not consequentially transferable or applicable to other contexts. However, as Thomas (2011) notes, “generalisation in social science is an illusory goal: it is not possible in any kind of social inquiry” (p.33). All educational or social research runs the risk of generalisation, not just case study research. Yin (2009), in concurrence with this point, reasons that case studies contribute, or generalise only to a broader theory. The theory can then be evaluated in one or more empirical cases, and then can refute opposing theories.

Insider Knowledge

Case studies are often characterised by insider knowledge (Lucas et al., 2018), which has advantages and disadvantages. The case study researcher needs to be “an effective questioner, listener, prober and able to make informed inferences and be adaptable to changing and emerging situations” (Yin, 2009, p.70). Given my position as class teacher, my awareness of social dynamics and my knowledge of the children’s personalities and interests, I was well positioned to discern when to prompt and probe, or alternatively, allow children time to digest or apply their learning.

However, in this study, insider knowledge could have amplified the potential for researcher bias. It was possible that bias could emerge in relation to the research themes, the research question, or my expectations of, and relationship with, the children. My personal feelings about the themes could also have generated bias. I feel strongly about child empowerment and child citizenship. I am also very interested in how environmental issues can be effectively explored with children.

Notwithstanding the positives that this poses in conducting research, a constant cycle of reflexivity, where I reflected and interrogated my practice as researcher was enforced to mitigate bias. Insider knowledge presented the inevitable tension between the role of researcher and role of teacher. Reflexivity was a means of alleviating this tension.

This study is small-scale and thus did not include a quantitative element. However, the themes that emerged in this study could be employed to survey Irish primary schools more broadly, informed by the findings from this qualitative research.

Chapter 4 Results of This Study

The aim of this study was to identify how learning through inquiry might empower children to take meaningful action on environmental issues. An IBL approach was adopted, in the context of environmental education, to determine this. The results of this study indicate that, having learned through inquiry, children were empowered to take meaningful action on environmental issues.

As outlined in the Introduction, the research questions of this study were:

- What features of inquiry can inspire children to take action on issues they feel strongly about?
- How can practitioners actively approach empowering children to realise their value in society?
- If challenges to empowerment emerge, can learning through inquiry help the children overcome these issues?

In response to the first research question, the features of inquiry which inspired meaningful action were direct experience, cognitive and affective learning, developing and enacting citizenship, and participation among the community of inquiry. In answering the second question, it appears that relinquishing control, engaging in participatory pedagogy and promoting active citizenship are important aspects of empowering children to realise their value in society. Finally, in response to the third research question, it is clear from this study that encouraging perseverance, communicating the power of social action, and framing tension as an inevitable, impermanent part of the inquiry process, all serve to support children in overcoming

challenges to empowerment. This chapter will provide a rationale for my response to the research questions.

Figure 4.1 summarises the results of this study. Development from interest to empowerment, through inquiry is depicted. Through Direct Experience, which activated the cognitive and affective domains, through participation and through developing citizenship, empowerment to take meaningful action emerged.

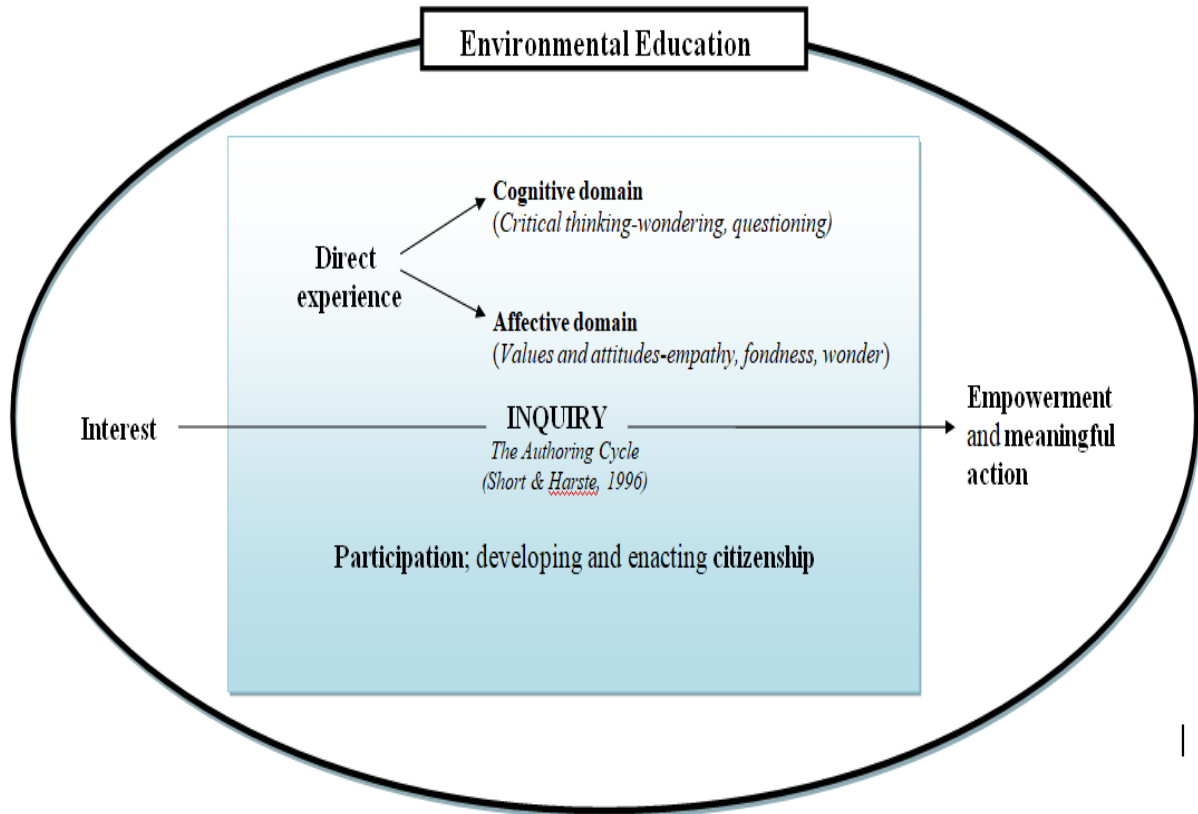


Figure 4.1 The development from interest to empowerment, through inquiry, in the context of environmental education. DE, which activated the cognitive and affective domains, is an important part of this process. So too is participation, developing and enacting citizenship.

The components of Figure 4.1 will structure the bulk of this chapter. The research questions will be addressed in this format. This analysis will begin with a summary of the engagements involved in this inquiry, framed by the phases of TAC (Short & Harste, 1996). Secondly, direct experience, and its role in promoting cognitive and affective learning, will be explored. How this learning inspired meaningful action will then be discussed. Thirdly, the importance of developing citizenship, in the context of promoting empowerment, will be highlighted. Then, the

value of participation in inquiry will be explored. Finally, I will draw attention to issues that challenged this process and how they were managed.

The Authoring Cycle

This inquiry was carried out over a period of 5 weeks and encompassed a series of engagements in the classroom and in the locality. Appendix D displays a timeline of these engagements. Research sites in the locality included Seaview, Pinewood, Summerville and the local Interpretive Centre.

As indicated by Wolk (2008), “Inquiry is a messy process, and at times idiosyncratic” (p.118). This rang true in the present study. The phases did not occur in isolation or sequentially, and children spent more time in some phases than others. Furthermore, it appeared that inquirers were not always situated in the same phase of the cycle, even when they were experiencing the same engagements. For instance, when some children were experiencing tension, others appeared to view the same situation as an investigation. Notwithstanding this, it was possible to loosely chart the current inquiry using the cycle as shown below. Specific engagements that characterised the Investigation, Representation and Action phases are detailed in Table 4.1.

Connection

Connection is the starting point in TAC (Short & Harste, 1996), when children explore their current understandings of the concepts of the inquiry. The children in this study were exposed to a variety of engagements in their locality so that they could contemplate how environmental issues are already relevant in their lives.

Points of connection in this inquiry included discussion of recent media footage of a whale swimming in Dublin Bay and visiting Summerville, where the whale was washed ashore. A volume of plastic pollution was observed at the beach and subsequently, on a trail around Seaview. This was then contrasted with the lack of plastic pollution in Pinewood. Here, the Horticulture Centre and City Farm were visited. The children petted and fed the rescue animals, and became acquainted with local community environmentalists. Then, during a presentation at the Interpretive Centre, the children learned about threats to the marine environment. A short visit to the beach afterwards allowed children to directly observe environmental issues there. These engagements ultimately prompted a larger scale fieldtrip to the beach later in the inquiry cycle.

Invitation

The children gathered into groups to facilitate more concentrated investigation on an area of interest, chosen by them. The Businesses Group (BG) contacted local businesses regarding their approach to sustainability. The Marine Animals Group (MAG) researched marine animal welfare. The Environmental organisation group (EOG) were interested in investigating AT, CC and SBAG. The Beach Clean Group (BCG) was interested in planning a class beach clean. Finally, the Microplastics Group (MG) chose to research the impact of microplastics on marine and human life.

Tension

Tension arose regularly throughout the inquiry, when learners experienced challenges, questions and problems that required further consideration. For instance, learners were baffled and disgusted by the practice of shark-finning, and wondered

how they could publicly express their disapproval of it. They were also “off balance” (Short, 2009, p.4) when they experienced the scarcity and type of bins on the beach, along with lack of appropriate signage and the lack of a recycling facility. This led to further tension, when their suggestions to local environmentalists and politicians for alleviating this issue were met, by some, with discouragement.

Investigation

The focus was narrowed during this phase and investigations were carried out at a class and group level. At the class level, a child-led investigation was conducted at the beach, details of which are outlined in Table 4.1. At the group level, the children began to investigate their area of interest. This phase was characterised by collaboration, participation and a sharing of responsibilities.

Investigation was directed by the children, with my guidance if required. This encouraged me to step back, to relinquish control and allow the investigation to unfold naturally. While I had envisaged that this would be a challenge for me, I was reassured by the enthusiasm, energy, engagement and interest of the children in conducting their investigations. Through this experience, the tension between the role of researcher and role of teacher was clear to me. As researcher, I was aware that relinquishing control was conducive to an inquiry setting. This perhaps was not something I was as accustomed to as a teacher. This point of the study presented part of the answer to my second research question. Practitioners actively approach empowering children by relinquishing control and encouraging them to have autonomy and agency in their inquiry.

Table 4.1

Engagements in Investigation, Representation and Action phases

Group	Investigation	Representation	Action
Class	Fieldwork at the beach Tally completed of the types of rubbish observed Rubbish collection: explored the beach and collected rubbish, returned to personal square in “grid” and placed rubbish there for presentation/discussion Engagements conducted <i>Observation of organisms:</i> Pooters used to examine minibeasts. Crabs examined in the sand and fish in the water sample. Shells of crabs examined for microplastics Remains of a mouse and owl examined. Kestrel observed “hovering” for prey. <i>Shell collection and observation:</i> examined and patterns on the shells. Captured photographs for identification.	Planned parent and assembly presentations	Correspondence <i>Young activists:</i> emails sent to Greta Thunberg and Flossie Donnelly to show solidarity and encouragement <i>Politicians:</i> Contact made regarding lack of bins on the beach and possibility of campaigning for same; Emails sent to Lord Mayor of Dublin and Taoiseach, outlining the inquiry thus far. Link provided to website. Highlighted concerns in relation to the future of marine environment. Articles Written on inquiry thus far. Inquired about publishing in: Village newsletter ClassMate Wix.com

Group	Investigation	Representation	Action
BG	Investigated environmental policies of local businesses; devised specific proposals: <i>Supermarket:</i> Bag depot to which customers could donate bags for reuse by other customers; Keep-cups only policy. <i>Café/Restaurants:</i> Rewarded use of keep cups; use of tea leaves instead of tea bags. <i>Takeaway:</i> Use of own lunchbox - filled at a discounted rate; Abolishing use of plastic containers for sauce Class email account set up, emails drafted	Emails presented to the class. Advice sought for improving emails.	Emails sent in response to disappointing messages from businesses. Content included a redirection to unacknowledged proposals.
MAG	Chose a marine animal each, investigated how animals were affected by marine pollution	Mini-projects <i>Shark-finning</i> <i>Coral:</i> focus on impact of human behaviour on coral life (i.e. touching coral will kill the colony) <i>Turtle:</i> focus on the lodging of waste (e.g. straws) in respiratory tracts <i>Harbour seals-</i> focus on inability to migrate and decrease in life expectancy due to plastic pollution	Petition created to ban shark-finning on a global scale. Shared with politicians, family and friends

Group	Investigation	Representation	Action
EOG	Researched AT, BIAG, CC; considered how they could be of support in inquiry	Poster presentation: information displayed and presented on AT	Contact made with SBAG, CC and AT; invited to school to speak about their work; inquired about “professional” beach cleans Posters indicating dates/times/ locations of community beach clean decorated and displayed around school and community
BCG	Investigated materials used by organisations for beach cleans Created tally chart for rubbish categorisation Researched experiments that could be conducted in the marine environment	Presentation of results from beach clean Tally results collated Bar chart created and designed	Bar chart displayed in school hall
MG	Researched microplastics online (e.g. videos, PowerPoints, websites etc.) and investigated impact on marine/ human life	Poster presentation: Information on types and prevalence of microplastics Tips for reducing microplastic consumption	Rap: performing the rap for others in school to communicate dangers of microplastics

Group	Investigation	Representation	Action
WG	Group formed later in inquiry	Website created to document and share work done in the inquiry, raise awareness around threats to the marine environment, inspire environmental action among the community Digital tools: <i>Mentimeter:</i> Survey to establish percentage of “keep-cup” users; “word cloud” to display words which best described the inquiry process <i>Kahoot:</i> Quiz on microplastics for all classes in school <i>Podcast:</i> “news report” on main engagements each week. <i>Puppet show:</i> Performed using marine animals created from recycled plastic <i>Petitions:</i> issues of bin scarcity on local beach and shark-finning <i>Interesting videos:</i> motivational speeches about environment, information on microplastics and sustainability schemes	Uploading new material and development of digital tools used

Group	Investigation	Representation	Action
EPG	Group formed later in inquiry		“Action events” were proposed and planning began on organising: Information morning, Assembly presentation, Bake sale: SBAG fundraiser.

Demonstration

In the demonstration phase, learners considered what materials and resources were required for developing their inquiry. Examples of this included the creation of a class email address for correspondence with organisations, businesses and politicians. Similarly, the beach clean group needed to research what materials and understandings were necessary for collating the information from the rubbish tallies and presenting it as a bar chart. Short (2009) noted that this phase is typically characterised by the learners using research strategies to further develop their understanding, an accurate description of the demonstration phase in this study.

Re-Vision

The re-vision phase, where children were reflecting on the inquiry thus far and considering how it could have been approached differently, was almost continuous in the case of this study. Email responses from businesses and organisations often involved re-visioning. For instance, an email from Joe, who worked at a café on the beach, alluded to the perseverance that is required for campaigning. This presented an opportunity to reconsider previous thinking and develop more awareness around the challenges involved in campaigning. This will be further discussed at a later stage.

Moreover, the rapid growth of the Covid-19 global pandemic, and thus the likelihood of school closures being enforced, meant re-visioning around plans and expectations was necessary.

Representation

In the representation phase, students shared their learning publicly. Going public with research allowed the children to garner an audience and gain momentum to further drive the inquiry. In the case of this inquiry, representation occurred predominantly at the group level (Table 4.1). Children shared their findings through a medium which was comfortable for them. Some information was presented digitally, and others through art, drama, maths, and literacy. Integration of curricular areas occurred naturally here.

Some work samples were created over a shorter period of time than others. For instance, the creation of posters advertising the local beach clean and group projects took a relatively short amount of time. Long-term, sustained engagements which demanded a lot of investment and interest from the children included drafting emails, writing articles and creating a website. The link to the website is provided in Appendix E.

Interesting to note in the case of the website, was that when a group of children proposed creating it to share their work, my initial response was that this task could be too taxing and onerous. Nevertheless, the children chose to direct their own learning and create an impressive website on which their work was displayed. This point of the inquiry prompted reflexivity on my part. I was reminded of the creative and innovative learning that can take place in an uncontrived context, when control is relinquished. It also encouraged me to appreciate what it means for inquiry to be authentically child-

led. It seemed when learning was child-directed, that the children were intrinsically motivated and had more ownership over their work. This encouraged me to consider the role of the teacher versus the role of the researcher. My initial response to the children was teacher-oriented, in that I was considering class management and time constraints. Adopting a reflexive approach encouraged me to rebalance this and to consider how the inquiry and the children would benefit from this engagement. Again, this point of the study provided clarity on the second research question. Relinquishing control, on the part of the practitioner can empower the children to take meaningful action.

Valuation

In this phase, learners explored how their learning from the unit of inquiry was of value to themselves and to their view of the wider world. Given the scope of the themes explored in this inquiry (i.e. environmental issues, empowerment, citizenship, inquiry), it was quite difficult for the children to accurately identify or quantify the value of learning that took place. A broad spectrum of skills and concepts were developed, along with content in the areas of science, geography, IT, literacy, visual arts, maths, drama and music. Also, as expected, different levels of engagement and investment were observed among the inquirers. This compounds the challenge of identifying how learning was of value to the community of inquiry.

Nevertheless, the community engaged in a discussion towards the end of the inquiry, where they identified the content and skills that were developed throughout the inquiry. In relation to content, they cited developing their knowledge about microplastics, marine animals and environmental care and awareness. In terms of

skills developed, they mentioned group work, IT, writing and email etiquette. It would be extremely challenging for children to identify concepts that they have developed. However, from my observation, the conceptual understandings of community, citizenship, empowerment and sustainability were developed. The impact of the inquiry on their values and attitudes in relation these themes was also noted. So too was the development of their critical thinking skills. Furthermore, their view of tension appeared to evolve as the inquiry progressed, in that they were beginning to recognise it as an expected part of the inquiry process, and not an insurmountable feat.

Action

The action phase of this inquiry was very significant, in that there was an extensive amount of evidence of children taking meaningful action on environmental issues (Table 4.1). In their development of two online petitions, in their planning of “action days” and in their ongoing correspondence with politicians and environmental organisations, it was clear that the children were taking action. The sheer enjoyment of this phase was clear in the energetic, spirited, buzzing atmosphere that pervaded the classroom as this phase progressed. Some children were even keen to forgo lunch breaks to keep working on their area of the inquiry. Their utter disappointment, regarding the unlikely prospect of their action days taking place as a result of school closures, was a testament to how driven and determined the children were to take action.

The children were realising that they could positively change themselves and their environment. They were beginning to raise their civic voice and exercise their

citizenship in their bid to improve environmental issues in their locality. Action was empowering the children. It demonstrated to the children that they could make a difference.

The Value of Direct Experience

Direct Experience (DE) is a concrete, place-based multi-sensory encounter with the environment, in which learners can engage with environmental issues on a physical, intellectual, spiritual and aesthetic level. As aforementioned, Higgins (2001) highlights that “the more ways of knowing an event, the better chance that it will be understood” (p.100). One, in turn could propose that the more ways a learner understands an environmental issue, the more chance that meaningful and sustainable action will be taken to alleviate it. This was undoubtedly the case in this inquiry.

DE of the local was the driving force of the inquiry, due to its invigoration of the cognitive and affective domains (Figure 4.1). This ultimately led the children to taking meaningful action on issues that they felt strongly about (Figure 4.2). This is consistent with Hope’s (2009) assertion, that with the activation of these domains, learners are more likely to take action on environmental issues.

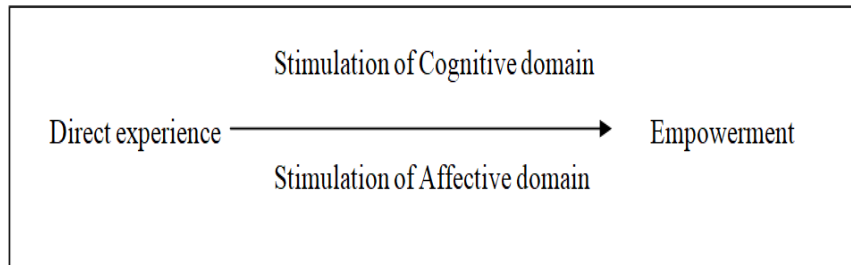


Figure 4.2 DE stimulating empowerment

This inquiry was borne out of a variety of local fieldwork experiences, through which areas of interest organically emerged. Below, I will explore how the activation of the affective and cognitive domains presented itself through these engagements, and ultimately, how it led the children taking meaningful action on the tensions they encountered.

Affective learning

Affective learning is developed through intimacy and connection with nature (Selby, 2017). As they emotionally engage with the natural world, children express emotions such as empathy, love, joy and wonder.

In the case of this study, affective learning was clear from the initial engagements of the connection phase. For example, at the City Farm, the children enjoyed petting and feeding the animals, an engagement which created awareness of the reciprocal bonds between nature and human behaviour (Figure 4.3A; Figure 4.3B). Their wonder and empathy was clear when they encountered a sheep, with underdeveloped legs, who had just received a wheelchair to move around the farm. They reported feeling happy that this “sheep could live like the other sheep” (Val).

Similarly, at the Horticulture Centre, the children planted marigolds (Figure 4.3C) and were each given a plant to take home and nurture. The thought and time that the children spent considering how best to care for this plant, and their subsequent joy in seeing its growth was a clear indication of affective learning. Clearly, they were developing their conceptualisation of the earth as everybody's home (Noddings, 2016).

Later in the inquiry, the children relished the freedom of exploring the beach. Having conducted observations on the wildlife (e.g. crabs, fish and insects), Val said: "I really liked exploring the beach, like when we found those three crabs...and looking at them with the magnifying glass ...and the designs on their shells." (Figure 4.3D; Figure 4.3E). The children also enjoyed collecting shells, identifying patterns on them and categorising them. It was clear the affective domain was activated here through the emerging features of biophilia, such as their fondness, care, wonder and interest in the wildlife. DE provided a medium through which they could develop a love, and ultimately cultivate protectiveness of marine life.

As Ampuero et. al (2015) note, affective learning is clear in the empathy and compassion that children show for nature. In the case of this study, empathy was clear in the children's consideration of the damage that could be inflicted on the marine life by the litter they had observed (Figure 4.3F). Daniella commented on how the plastics she found on the beach could potentially suffocate the fish: "When we went off to count how much plastic, I saw a plastic bottle. It was like cardboard, but harder. That could have easily gone in the water and damaged the fish." She also commented on the issue of compostable bags being disposed of incorrectly: "Even if they are compostable bags, if they are not recycled properly they will still end up in the sea suffocating the fish." Later, the children empathised with the marine life,

having found a large volume of plastic straws. Based on their research, they knew that straws can damage the respiratory tracts of the animals.

As outlined in Chapter 2, the literature on IBL does not explicitly identify affective learning as an impetus to taking meaningful action. Affective learning, in the form of love, care, empathy and wonder, inspired protectiveness in the children for nature, and ultimately empowered them to take meaningful action. This will be further discussed at a later stage.



Figure 4.3 Affectively engaging with plants and animals. Petting the animals (A), feeding the animals (B), planting seeds at the City Farm (C), examining the shells of crabs for

microplastics using a magnifying glass (D); holding a crab and examining the features on its shell (E); the items children identified as threatening for marine life (F).

Cognitive learning

Cognitive learning, through DE, presented itself in the form of critical thinking in this inquiry (Figure 4.1). Critical thinking involves analytical and systematic thinking, where children can become creative and critical users of inquiry, methods and skills (Australian Curriculum Assessment and Reporting Authority, 2012). In the case of this inquiry, critical thinking materialised as children wondering, asking questions, making connections, contemplating possibilities and challenging preconceptions.

When the children visited the local beach to visit the scene where a whale had been washed ashore, their cognitive learning was clear. They asked Tom and the IWDG personnel about the fin whale, and wondered if the whale had been impacted by plastic pollution (Figure 4.4A, Figure 4.4B). They made connections between current and previous learning in their discussion about plastic pollution observed at the beach, an issue which had been previously brought to light by members of the Green School's committee. In their linking of theory and practice here, the cognitive domain was activated.

Cognitive learning involves analytical and critical thinking (Roberts, 2015). Though the issue of plastic pollution was apparent on the Seaview fieldtrip, it was virtually non-existent in Pinewood. Observing this difference presented tension, in that they were encouraged to challenge preconceptions and analyse why one place had been treated differently to another in their locality. It encouraged them to ask questions about who was caring for these features and how this care could permeate into the wider community.

At the City Farm and Horticulture Centre, the application of critical thinking and problem solving in finding sustainable solutions was modelled to the children. From the team at the centre, learners observed a fervent ethos that endorsed sustainability, environmental innovation and a pragmatic approach to cultivating an environmentally-friendly area. For example, the sheds for rescue animals were constructed of recycled plastic. Similarly, old election posters were reused up to eight times as a base for planting seeds (Figure 4.4C). The modelling of this approach would ultimately inspire the children to adopt a similar stance when taking meaningful action later in the inquiry.

During the fieldwork at the beach, several “I wonder” and “maybe” statements were articulated, which indicated that the children were engaged in cognitive learning. Through wondering, they were contemplating various possibilities and striving to synthesise what they had discovered to formulate new learning. For example, when the children found a large amount of similar straws (Figure 4.4D), they wondered where they had come from: “They’re thin white straws...maybe they’re from Capri suns or juice..... so maybe somebody bought a big package of them and brought them to the beach?” The semantics are worth noting here. “Maybe”, showed the non-commitment to one idea and a sense of pondering aloud. Similarly, Val wondered about marine animals being washed ashore, far from their natural habitats. Through wondering, she was attempting to apply previous learning to other contexts:

I was, wondering, wondering...well...you know how unexpected animals get stranded there? Like if it's the temperature of the water or not or like...if that whale had of died of plastic-if there's more plastic around there...like in Dublin out where it was swimming. Like in the ocean.

The articulation and phrasing of this statement is interesting in the context of cognitive learning. The breaks in speech and her revision of the direction the sentence was taking depict the wondering process, where ideas are not fully formulated, where the learner is off balance, reaching and striving for connection.

Though wondering perhaps did not directly induce action, it was an important stepping stone to taking meaningful action later in the inquiry. It allowed the children to refine what the exact issues were, to clarify their thinking before taking action. It enabled them to formulate questions and sometimes it allowed them to answer those questions too.

At the beach, the children commented that bins were scarce, unclearly signed, difficult to find and that they did not look like bins. They also observed that there was no facility for recycling. In considering how to solve these problems, the children made connections to other areas in the locality. In their earlier fieldwork experiences, they observed alternative, more durable, resilient bins. They wondered if these bins could be installed on the beach. The critical and creative use of geographical inquiry (Roberts, 2015), and the skill of asking questions are encapsulated in Daniella's statement:

You know the bin where you pull it down? That way it can't be blown or anything and even if the tide came in, it wouldn't destroy the bin and it wouldn't get blown away in the wind... They have them all around [redacted] now.... And why aren't there signs to say the nearest bin? It would be a good idea if you think about it.

Similarly, another child suggested decorating the bins, based on what she had observed in other communities, so that they could be made more visible and aesthetically appealing. The children were engaged in the reaching stance here,

where they were seeking solutions to the tensions that they, and other citizens, had encountered.

Again, the creative use of geographical inquiry was observed when the children observed a large volume of cigarette butts, which they knew contained microplastics based on their previous research. They decided to trawl through the sand, creatively adapting the scientific equipment (e.g. magnifying glasses and pickers) to detect microplastics (Figure 4.4E). Other children ran sea water through a funnel to identify if any smaller plastics could be identified (Figure 4.4F). In their innovative use of the equipment, and their development of experiments to answer their questions, critical thinking was clear.

In Chapter 2, I stated it was difficult to imagine how a “creative use of geographical inquiry” (Roberts, 2015) would manifest itself in this study. The above examples clearly encompassed the meaning of this statement to me. Contemplating these issues and seeking creative and innovative solutions provided them with a vision for moving forward with the inquiry and ultimately taking action.



Figure 4.4 Cognitive learning in the environment. Examining the features of the whale during a presentation with the IWDG (A); asking Tom questions about plastic pollution and its impact on marine life (B); reused election posters for planting (C); items which

were identified as containing high amounts of microplastics (D); digging a hole in the sand and using magnifying glasses to detect smaller plastics beneath the surface(E); examining the sand for microplastics (F)

The interconnectedness of the cognitive and affective domains in environmental learning was very apparent in this inquiry. Krapfel's (1999, p. 57) endorsement of "experiencing and teaching the two components as one fused entity" certainly rang true. When learners had an emotional connection with the local environment, and when they were engaged in critical thinking to solve its problems, they took meaningful action on its behalf (Figure 2.1). The action taken will be outlined in the following section.

Meaningful action

Based on the volume of plastic pollution they had observed on the beach, and their knowledge of its impact on marine life, the children decided to contact politicians and environmental organisations in relation to this issue. In their correspondence, they chose to attach images that they had captured of local marine pollution to depict the proximity and gravity of this issue (Figure 4.5A). Sally reasoned:

I think the pictures are very important.... if we show them real life examples they can think- 'these people saw this'. But if it's off the internet it might be like, 'well that mightn't be in Ireland so why should we worry'. If we show them, it might make it seem more real to them.

The children were trying to inspire empathy in others. Though not explicitly stated, or perhaps even consciously realised, they saw empathy as a tool to invoke change in environmental behaviour and inspire collective action. Interestingly, the very premise of this work was to encourage empathy in the learners to see if this would

cause them to act for the environment. Paradoxically, the children saw this as a persuasive tool for inspiring environmental action in adults.

Due to their concern about the volume of microplastic-containing items found during their fieldwork, the inquirers decided to raise awareness about the threats they pose to marine life. They composed a rap about the dangers of microplastics, performed it for others in the school community and displayed it on their website (Figure 4.5B). Furthermore, they wrote to AT asking if they could observe a “professional” beach clean, in which machinery that detects microplastics is used. Finally, they created a “Kahoot!” quiz on microplastics for the younger children in the school community so that they could raise awareness about this issue.

In relation to their concern about bins, children suggested speaking to local politicians in the constituency, in particular members of the Green Party. Kate pondered: “Maybe we could ask the businesses near the bins...like how do we go about getting them?” Amy agreed and showed her understanding of the power of social action:

Maybe we could talk to them about how we can get more bins on the beach, better bins...and contact politicians or people that can make a big change and show them, tell them how all of these people want the same thing

Amy knew that communicating a collective request for more appropriate bins was likely to persuade politicians to act. In light of this, the children agreed to sign all 25 names on correspondence to convey their collectiveness.

The community of inquiry also decided to create an online petition about this issue. In their petition, the children shared their fieldwork experiences with the wider

community and called for action on having more appropriate bins installed at the local beach. A link to the petition was displayed on their website, so that it could reach as wide an audience as possible (Figure 4.5C).



A

SAVE THE MARINE

Home Petitions Polls Learning about Nature Microplastic survey Art Fair Business Marine Animals Microplastics

Microplastic rap

Girls in our class wrote a rap about microplastics. Hope you enjoy.

We need to start a revolution, to stop all pollution and find a solution.

Don't be a villain you brilliant villain, your litter the world with your selfish opinion.

People are litter, that's why they litter they need a solution to spill all the litter.

You breathe it, you eat it, you drink it, you love it. We need to think to stop alive and survive the micro (plastics).

So million microplastics in our oceans, some are even in our bottles.

We need to help microplastics die so our planet can be revived.

B

SAVE THE MARINE

Home Petitions Polls Learning about Nature Microplastic survey Art Fair Business Marine Animals Microplastics

Bins on Summerville Beach

Last week our class went down to Seaview Beach to observe and collect some of the litter there. We were shocked at the fact that there were no bins on Seaview Beach and at the amount of pollution. One of the main reasons the beach is so polluted is that the rubbish is flying out of the bins into the sea and beach. We as a class decided to make a petition for new, visible and secure bins here's the link.

Thank you!

<http://chng.it/4NzpfQ9u4d>

C

Figure 4.5 Taking action. The picture of the AT trailer post-clean up was attached to correspondence with local businesses and organisations (A); the webpage which shows the micoplastics rap (B); webpage outlining issue of bin scarcity on Summerville with link to petition (C)

In a discussion towards the end of the inquiry, the value of fieldwork in prompting meaningful action on environmental issues was explicitly discussed. Phil focused on the importance of “seeing it for yourself”, not “learning it from a book.” This quote resonated with me, given that Hope (2009, p.169), in his promotion of DE, highlighted that “when students ‘see it for themselves’ their enjoyment and understanding is enhanced.” Sally agreed with Phil: “It’s not like we’re sitting at home looking at the news, hearing them talk about it like maybe we can actually do something about it.”

Kathleen compared learning about environmental issues from a book and from fieldwork. She highlighted that DE inspired action:

It’s much more interesting because you’re taking action. We are actually taking action. We went to the beach, we did a beach clean, we’re sending emails to businesses, another group is emailing AT, another group is doing a survey, and seeing the rubbish that we have used. It’s not from a book. For example 77.2% of people litter. If you read it from a book that’s great and all- you are aware of what’s happening but you’re not actually doing anything to help it.

DE played an absolutely vital role in this inquiry. It was the vehicle that transported the children through the inquiry cycle. It did so by igniting the cognitive and affective domains. With the activation of these domains, children were enabled to connect with community, identify environmental issues in the locality, pursue solutions to these tensions and take civic action. Their sense of ecological justice and social stewardship emerged as a result of cognitive and affective learning in the field. In the absence of DE, it is unlikely that this level of engagement and empowerment to take meaningful action would have prevailed.

Participation

The inquiry was framed by participation, where a continuous process of equality, democracy, co-agency, and a collective responsibility for learning was promoted. Through participatory pedagogy, the learners identified what they wanted to inquire about, designed engagements, selected resources, collected data, synthesised their findings, chose how to share them and took meaningful action. Their participation in decision-making, as part of inquiry, promoted active citizenship, social inclusion and empowerment. In light of this, the children were undoubtedly moving between the higher rungs of Hart's Ladder of Participation (1992).

My role as the practitioner was to guide and facilitate their inquiry. This involved relinquishing control and a deviation from the more traditional style of teaching, which would be more characteristic of the lower rungs of Hart's Ladder (1992). Participatory pedagogy also clarified the role of the researcher, in that research was done *with* instead of *on* children. The second research question asked how the practitioner might support the children in realising their value in society. Establishing a culture of participation, through inquiry was central to this.

Through inquiry and participatory pedagogy, in the context of environmental education, children developed their concept of citizenship. They then enacted their citizenship when they saw that meaningful action needed to be taken.

Citizenship

As outlined in Figure 4.1, development of citizenship was another important conduit in empowering the children to take action. Smiths's (2010) components of citizenship,

which were outlined in Chapter 2, strongly emerged during this process. Moreover, the idea of exercising citizenship in a mature and ethical manner arose also.

Responsibility

The children felt a civic responsibility to share the information with other fellow citizens and a responsibility to the environment. They took action on the basis of these responsibilities.

The children's eagerness to share information was seen in their creation of a website, surveys, podcasts, petitions and poster/project presentations. They were also keen to have a community information morning, where they would deliver a presentation on marine pollution and empower citizens to tackle these issues. Additionally, they created posters displaying the dates of community beach cleans which were to be displayed around the community. The children's sense of responsibility to the environment was clear in the way that they addressed environmental issues in their correspondence with politicians and environmental organisations, and in their carrying out of a beach clean.

It was interesting that the children felt a responsibility to communicate to others that they too had a responsibility to the environment. Daniella encapsulated this point and highlighted the importance of co-operation, collaboration and global citizenship. She reasoned that without this, citizens and the environment will suffer:

By showing people it's at this stage now where everyone has to do their part and not in 10 years. Like the earth is going to get really, really hot. Everyone is going to suffer, that it's time for everyone to pay their part.

Rights

As envisaged at an earlier stage, children's awareness around responsibility as opposed to rights was far more prevalent throughout the inquiry. Though rights were rarely discussed in the explicit sense, the children's awareness of their rights was seen in how their sense of citizenship developed. By creating two petitions and contacting politicians, they understood that young citizens had a right to raise their civic voices and take meaningful action. Furthermore, in face of the disappointing email responses that they received from some local businesses and politicians, they knew that they had the right to persevere in their quest for answers.

Membership

The children developed their concept of membership to society as the inquiry progressed. This was done in the context of building relationships, developing a sense of community, collaboration and encouragement. This links with Catling's (2014) suggestion that EE needs to be extended beyond the classroom into the community, where children can engage with their families, local authorities and activists to gain a more comprehensive insight into issues of interest. The connections established with local community activists early in the inquiry allowed them to reach out to them later in the inquiry, to ask questions, seek clarification, ask for advice and to share what they had learned. For instance, in an email Tom (IC) and Joe, the manager of a café on the beach, the children sought advice on campaigning for additional bins to be installed on the beach.

The children's sense of community was palpable not only in the connections that they developed but also in their drive to engage with the wider community about local

environmental issues. Their plan to host their own community beach clean was evidence of this. Laoise proposed her idea to the inquirers:

You could do like a big annual or “semi-annual” event , so I’d say, like every six months to a year you got to get like a thousand or 2000 people do a cleanup. I mean a really big event

The children were excited by this idea. Sally knew that their membership of local clubs/ societies would be helpful in garnering support and taking co-operative, communal and equal action. She thought it was important to communicate that “We are all equal and there is a sense of community. Like, it’s not just our plan.”

Taking meaningful action on environmental issues requires collaboration among society’s membership. The concept of collaboration strongly emerged through the discovery of a young Irish environmental activist, Flossie Donnelly. The children were interested in collaborating with her on her projects and invited her to join their beach clean (Appendix F). Flossie replied (Appendix G), and although she couldn’t attend this, she offered to visit the inquirers to talk about her work, which they said was encouraging. The children then began to follow her on social media to show their solidarity and support for her work. This fostering of a reciprocal and collaborative relationship is an important part of societal membership and taking meaningful action. This reciprocity of support is encapsulated in Sally’s statement: “Cos when it’s coming from somebody your own age, she might feel like “well these girls are in sixth class too and they want to help. And I can help them too.” Within the community of inquiry itself, the entire inquiry was characterised by collaboration. By their membership of various groups, their sharing of responsibilities, their delegation, discussion and debate, collaboration was abundantly clear.

Equality of status, respect and recognition

The children were eager to contact others, to voice their opinions and to invite participation in community activities. It would seem that they generally saw their status as being equal to others. This understanding of their status was a prerequisite to taking meaningful action.

During the beach clean, a group of children had an incidental encounter with an elderly citizen who was also cleaning the beach. This individual asked the children about their beach investigation and spoke to the group about the importance of every citizen, young and old, engaging with issues surrounding marine pollution. This encounter served as a reminder to the children that they were equal to other citizens in taking environmental action. This encounter also provided further motivation for widening the invitation to their community beach clean.

Receiving recognition and respect from other citizens is an integral part of developing citizenship and empowering children (Waldron and Oberman, 2016). An email received from a local café (Appendix H), which displayed sincerity, honesty, recognition and respect had a positive, powerful impact on the children. The representative acknowledged the important subject matter of the inquiry. She explicitly addressed each suggestion that was made by the children also. Finally, and perhaps most interestingly, she provided a logical, reasonable explanation as to why none of the suggestions could be implemented.

The following discussion among the community of inquirers indicated that they felt recognised and respected. They appreciated the honesty of the email, the time taken to write it and that they were being treated as equal citizens. They felt she was

engaging in a two-way conversation, that she was listening to what they were saying and responding in a way that was not dismissive or defensive, as they had experienced previously.

“At least she’s being honest..... It’s refreshing to see because it’s personal and they have took the time to read the email” (Sally)

“They answered our questions. They were polite about it...they were more polite about it than [REDACTED] were. And it’s a long email. I’d say it took a lot of time” (Val)

“And they recognised that we put an effort into the email...that it wasn’t copied and pasted from our side either. Like we didn’t send the same email to all the businesses” (Sally)

Receiving such a positive email was settling for the children and empowered them to take meaningful action. They decided to re-vision and consider alternative options for this local café and they extended their contact to more businesses in the local area. The children felt heard, and as it transpired, feeling heard was what was important to them and what ultimately empowered them. Interestingly, empowerment did not require the uptake of their suggestions. It required being respected, recognised and listened to. “Better Outcomes, Brighter Futures”, the national policy framework for children and young people in Ireland acknowledges the importance of this in stating that “promoting the participation of children and young people in decision-making involves taking their views and opinions seriously and acknowledging and responding to them appropriately”(DCYA, 2014, p.31).

Values and attitudes in relation to citizenship

As the inquiry process unfolded, children expressed strong values and attitudes regarding how citizenship should be enacted. Though this was not anticipated in the early stages of this study, it was a valuable and significant outcome of this research. After a presentation on shark-finning by one of the children in the MAG, a lengthy discussion on the injustices of this practice ensued. The children were keen to raise awareness about shark-finning and publicly express their disapproval of this practice. They instinctively knew that for meaningful action to be taken on this issue, they needed to appeal to the values and attitudes of others.

They created a petition, which described the process of shark-finning and sought signatures to show collective disapproval of this practice. On their website, information on shark-finning was shared, along with a link to their petition (Figure 4.6A). They also created a one-question “Mentimeter” survey, which asked if citizens approved of shark-finning (Figure 4.6B). Links to these digital tools were shared with the school community, family, friends and politicians.

The children’s values and attitudes regarding this practice were patent, not only in their creation of the petition and survey, but also in their reservations about displaying images of finned sharks on their website. Affective learning was clear here. Though they were keen to appeal to their audience, they still felt it would be inappropriate for viewers to be subjected to such graphic imagery. They settled on presenting a diagram of a shark, depicting the fins that are removed as a result of this practice (Figure 4.6C). As Doris said, “You need to see it instead of just hearing about it from other people, like you have to see it, to see that it’s actually true”. The children’s sense of ecological

justice and ethical fellowship was clear here. The children had strong values and attitudes regarding how citizenship should be enacted. These values and attitudes stirred them to action.

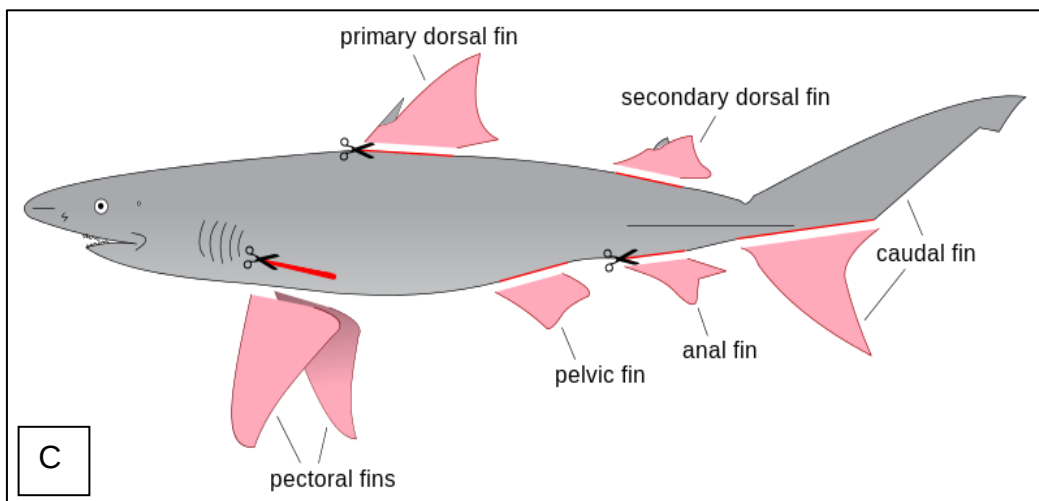
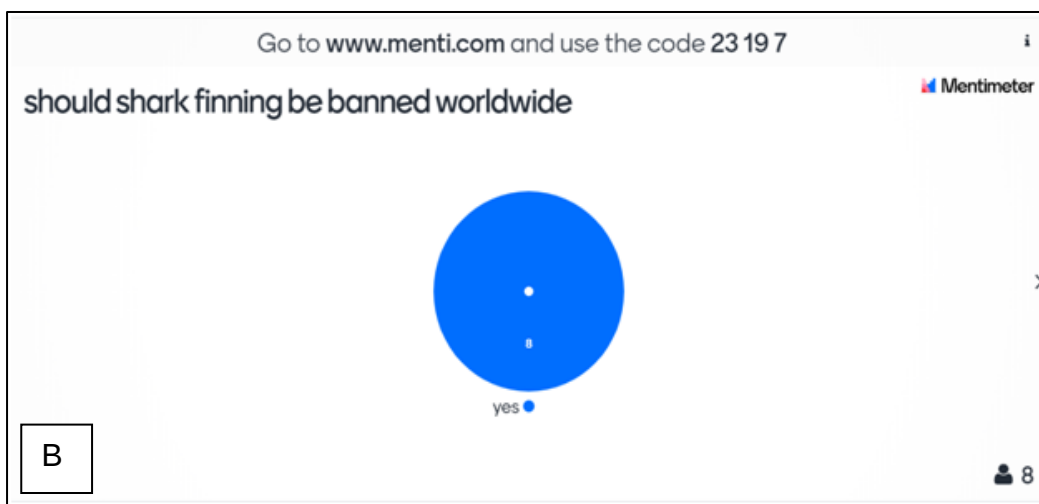
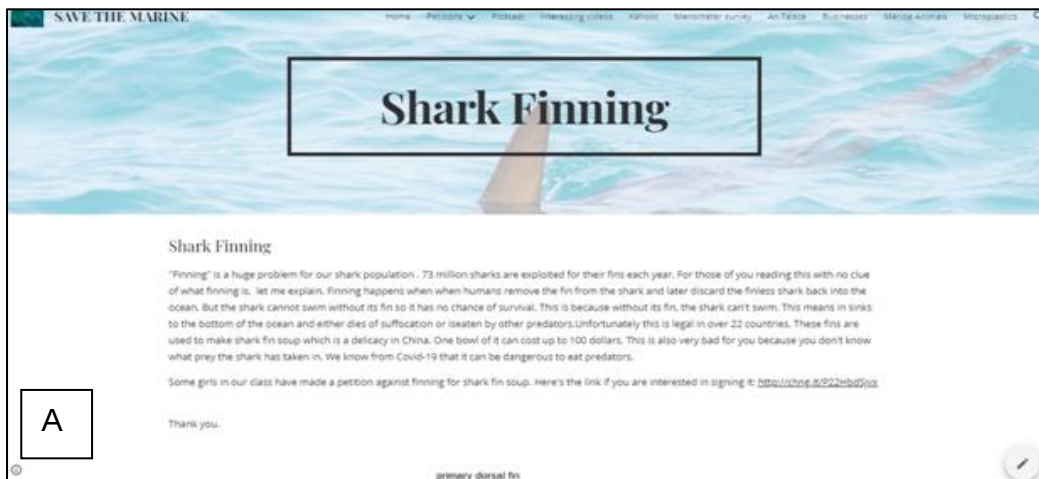


Figure 4.6 Values and attitudes in relation to citizenship. Screenshot of the shark-finning webpage which provides a link to the petition (A); Mentimeter survey asking if finning should be banned worldwide (B); Image of fins that are removed from sharks as part of the finning process (C).

In this study, the children were empowered to take meaningful action by enacting their citizenship. The evidence above clearly indicates that children developed their understanding of rights, responsibilities and membership to society. Furthermore, they clearly saw equality of status, respect and recognition as important components of citizenship also. Finally, their values and attitudes around exercising an ethical citizenship were indicative of empowerment. Specific indicators of empowerment included collaboration with others in the community, correspondence with politicians, development of petitions, and planning of action days and community beach cleans.

Having learned through inquiry, empowerment to take meaningful action was palpable. This occurred through the enactment of citizenship. Within this process, however, there were challenges. These challenges are further discussed below.

Managing challenges to empowerment

The third research question asked if learning through inquiry could support children in overcoming challenges to empowerment. This question will be addressed below.

While it was originally envisaged that challenges could emerge based on the vastness of environmental issues, it transpired that they were far more prevalent in the treatment from others in society, namely businesses, organisations and politicians. Had these challenges not been managed, children may have been inhibited from taking meaningful action.

Tension: previous negative experiences

The impact of previous negative experiences was exemplified early in the inquiry when the children were contemplating writing to DCC. Georgie cautioned the other inquirers: “I sent a letter to DCC about the foxes going around looking for food..... It was last month and I still haven’t got a letter back. I’m really angry at them.” Many of the inquirers had similar stories. Due to the lack of communication from DCC on numerous previous occasions, the children believed taking action by contacting DCC was futile. In the absence of help from DCC, the children felt helpless. This concept of “learned helplessness” (Summers et al., 2003, p.366) resonated with me here.

Empowerment: social action

Later in the inquiry, when DCC responded to an email, Val pondered “It’s really strange how girls in our class emailed Dublin City Council and they haven’t responded in months and then they responded to us the next day.” The children were beginning to appreciate the power of their unified approach. They knew that this needed to be communicated in order to influence businesses, organisations and politicians. This called to mind Quinn, Elliott, Taylor, & Littledyke’s (2015) assertion that social action can serve as a shield against the anxiety and helplessness learners could otherwise feel in response to these tensions. When challenges such as this emerge, the practitioner should communicate the power of social action to the learners, and show the difference that a collective voice can make.

Tension: frustration

The first email response from a local supermarket (Appendix I) did not acknowledge specific suggestions that the children had proposed for operating a more environmentally-friendly business. Instead, it included a series of quotes from the franchise's environmental policy and appeared as though it had been hastily written. The class discussion that followed was imbued with disappointment and frustration. Observations of this discussion were documented in my reflective journal:

Dead silence after email was read to class. Felt personal sense of disappointment for children-mainly because suggestions weren't addressed- 'copy and paste' feel to email. Very rich discussion...heavy focus on discouragement but definitely a need to hear out how children were feeling and allow them space to voice it. Surprised re level of deflation/disheartenment. Important to talk out and navigate way to finding solutions/moving forward. Important to discuss how realistic all ideas were/priorities of businesses etc. Hoping if this situation arises again, we will have tools to manage it better and move forward. Maybe 'talking out' and rationalising of disappointment can actually empower them?

When the children were asked if they felt heard, Sally responded "No, not really.... They didn't really have any reaction to our suggestions". Daniella described the tone of the email as "This is what we're doing for now. We're not concerned about your ideas. We're busy enough." When the inquirers were asked how they would describe their feelings about the email, their response was grim. The words used were frustrated, disappointed, angry, offended, furious, inferior, downhearted, patronised and sad. Perhaps one of the starkest expressions of disappointment was from Sally who said:

It's knocked us down a bit...thinking 'Oh well maybe we're not so important. Maybe people won't listen to us because we're only 11 and 12.' We've tried our best to make the email good and come up with our best ideas. But it just kind of feels a bit wasted then.

The above discussion echoes Morrow's (1999) findings, that children feel their voices are seldom heard in society, that their opinions are inevitably disregarded. They reported feeling absent when it comes to decision-making in society, even in relation to trivial, mundane issues.

Empowerment: discussion, managing expectations, perseverance

The children's disappointment was tangible and warranted. I encouraged them to air their frustration and disappointment, through class discussion. Talking the issues out appeared to be cathartic for the children. Having expressed their feelings, they seemed more equipped to map out a way of moving forward. As it happened, moving forward in this case meant re-visioning and developing awareness around the roles, economic objectives and time constraints of businesses and organisations, in order to cultivate more realistic expectations going forward. In this case, encouraging the children to talk about how the issues that were threatening their empowerment, actually allowed them to move forward with the inquiry. This also links to the theory on citizenship, where the importance of recognising and respecting children's opinions is endorsed.

Another email, from a business local to the beach, encouraged the children to regroup in relation to the email from this local supermarket. The semantics of the email convey that perseverance was a vital part of taking meaningful action⁵: "We had a *big campaign* last summer. Along with the *BIAG and a few other locals*, we *managed* to get two compressible bins along the walkway"

⁵ Parts of this quote are italicised to emphasise how the semantics indicated a need for perseverance in campaigning

Upon reflection on this email, Kathleen stated that “It’s going to be hard” and one email is “not going to change everything.” Laoise contextualised the ideas of perseverance, patience and resilience with reference to a young environmental activist: “Greta Thunberg stood outside the UN for ages before she was recognised” followed by the crucial statement “So you can’t just snap your fingers and fix everything.”

Based on this realisation, the children were inspired to persevere and send a further email to the supermarket. Though not explicitly stated, they were building resilience to issues which challenged their empowerment. Based on the results of this study, teachers should communicate that perseverance is often required when taking meaningful action.

Tension: inequality of status

At times, it appeared the children believed that, relative to adults, they had an unequal societal status. For instance, when drafting emails to politicians, Laoise asked “Are they going to, you know, listen to primary school kids?.....we're all under 18”. A unanimous “no” was offered in response to my question “Do you think RB (local politician) or politicians like to hear from children or adolescents?” Damiere elaborated: “Well most of them think that we are naïve....and we can’t vote so there’s no point in negotiating with us.” A sense of inferiority is encompassed in this statement, where Damiere argues that politicians will view speaking to her as futile, given that she is unable to vote. Sally agreed, saying “If they do something nice for you, they might be like ‘tell your Mam and Dad to vote for me’...so they're taking

advantage of you." Sally has expressed a feeling of being exploited here for the purposes of a political agenda.

Empowerment: bargaining

The children knew that politicians would be "eager to please" given the risk of a second General Election this year. They reasoned that there could be some reciprocity in their dealings with a local politician, which would mutually benefit their environmental agenda and his political profile. If bins were installed on Summerville Beach, they would advertise him, and the likelihood of their parents voting for him would increase. This idea of bargaining is encapsulated in their discussion:

You can give them something that they can use...in return for bins they can say that they did it- RB⁶ will be thinking 'if I do something for them, they'll do something for me, I'll get votes and I'll come back again (Daniella)

He will tell everyone that he put two bins on [REDACTED] for the 6th class students in [REDACTED] and we will say "Yeah FG⁶ are great!" (*laughs*) (Amy)

The children saw an opportunity to manage this situation and play the politicians "at their own game" so to speak. They turned disempowerment around here, regained control and empowerment to take meaningful action prevailed. This was their way of coping with the societal inequality that they felt, particularly in relation to politics.

When challenges to empowerment emerged such as the one above, the affective domain was heavily activated relative to the cognitive domain. This was clear in the children's disappointment, frustration and deflation. Perhaps, in observing this

⁶ Initials given to anonymise politician

imbalance between the cognitive and affective domains, the practitioner could guide the children in regaining equilibrium by promoting cognitive learning. In the above example the children were encouraged to consider reciprocity in their relationship with politicians, and incentives that would inspire politicians to take meaningful action in relation to environmental issues.

It was only through cognitive learning that the children were able to navigate their way through tension in this study. They analysed, discussed, rationalised and reasoned in order to identify a way of moving forward and taking collaborative, positive action. Inquiry and cognitive learning in particular, was a process through which they could overcome challenges. By engaging cognitively with these tensions, and appreciating the inevitability of challenges arising, the children became more empowered.

In the above examples, it is clear the children were climbing Hart's Ladder of Participation (1992). Earlier in this paper, a question was posed regarding how children can move upwards from one rung of the ladder to the next. Based on the results of this study, it is through inquiry, and more specifically cognitive learning, that this climbing occurred. In observing the emergence of challenges to empowerment, it would seem that the practitioner should encourage cognitive learning to overcome them.

In summary

The first research question asked what features of inquiry might inspire children to take meaningful action on environmental issues. As outlined in Figure 4.1, direct

experience, which promoted cognitive and affective learning, inspired meaningful action. Developing the concept of and enacting citizenship played an important role in this process too. Learning in participation was also valuable in empowering children to take meaningful action.

When the practitioner promotes and models collaboration, cognitive and affective learning, meaningful action can emerge. Furthermore, it is vital for the practitioner to relinquish control and engage in participatory pedagogy to further enhance this process. These actions are characteristic of inquiry.

Finally, in managing challenges to empowerment, the practitioner should communicate the value of social action, encourage perseverance and frame tension as an inevitable, impermanent phase of the inquiry process. Again, all of these actions resemble an IBL approach.

Chapter 5 Conclusion, Limitations and Future Research

Key findings

It is apparent from this study that learning through inquiry empowered children to take meaningful action on environmental issues (Figure 4.1). Direct experience, which activated the cognitive and affective domains, was a key conduit of this process. Clearly “seeing it for themselves” (Hope, 2009, p.169) was important for inspiring meaningful action. Additionally, developing the concept of citizenship and enacting it was instrumental in empowering children to take meaningful action. Empowerment through citizenship was observed in correspondence with local businesses and politicians, in the creation of petitions, in the development of a website to raise awareness about environmental issues and in the planning of “action days” and community beach cleans.

Teaching and learning through participation gave children the autonomy to take meaningful action in a way that they saw fit. Relinquishing control, promoting collaboration and modelling cognitive and affective learning was central to this. As regards how the practitioner should manage challenges to empowerment, it is evident that by “talking out” their concerns, communicating the power of social action and promoting perseverance is vital. A balancing of cognitive and affective learning is also important also, when managing challenges.

Limitations and future research

Although the use of TAC (Short & Harste, 1996) as a planning tool was helpful, as a guidance system it proved to be ineffective. Throughout the inquiry, it was seldom consulted for support or guidance. A discussion towards the end of the inquiry, in which I asked about our journey through the phases of the cycle, lacked engagement. The inquirers were far more interested in taking action, instead of talking about taking action, which, upon reflection, is an obvious and logical preference.

Met with this understandable disengagement, I asked the children to type three words that describe inquiry on their devices, which would contribute to a Mentimeter word cloud (Figure 5.1). Popular words chosen were thinking, teamwork, sharing information, passion, regroup, good laugh, researching, questions, conclusion, disagree, beach, emails and calming. Though I was keen to explore the choice of words in more depth, the scope of this research, and the late stage of the inquiry at which this engagement occurred, did not facilitate this. This exercise was thought-provoking for me, and indicated opportunities for further investigation, outside of this research. Future research could explore what inquiry means to children, in order to identify what it is about inquiry that empowers inquirers to take meaningful action.

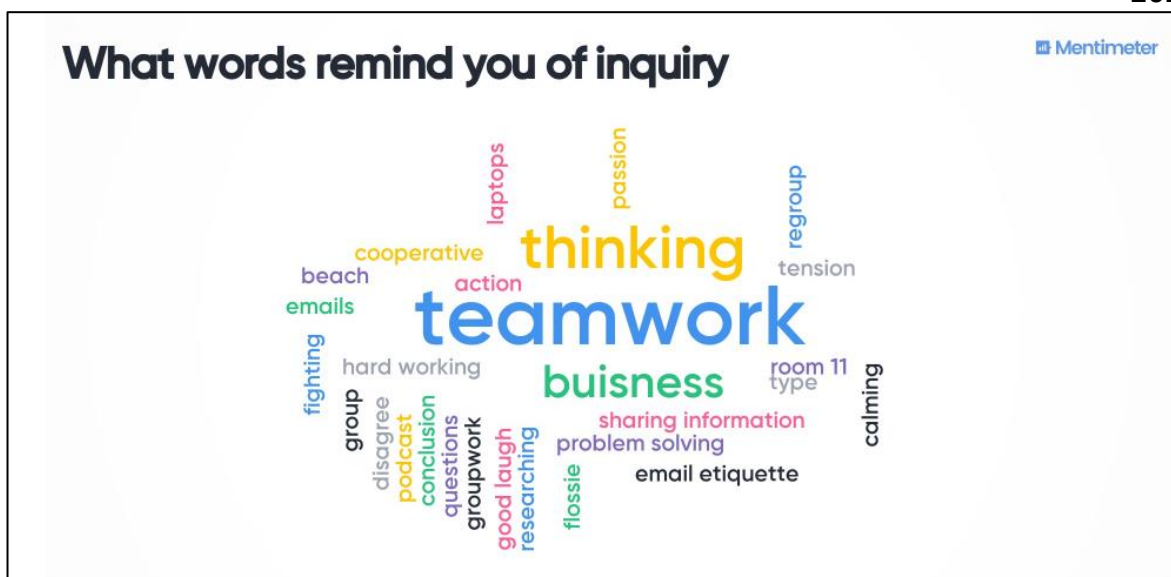


Figure 5.1 Words chosen by children to describe inquiry

Based on the endeavours of the Green School committee to acquire the “Global Citizenship and Marine Environment” flag, the children had a high level of awareness about marine pollution prior to engaging in the inquiry. Perhaps their starting point for this inquiry was slightly more advanced than it would have been ordinarily. Having said this, it provided them with a springboard for building upon their previous knowledge and further developing their inquiry.

Secondly, the children in this class have always been exceptionally interested in issues surrounding social justice, politics and the environment. Therefore, they were intrinsically motivated to take action on environmental issues. While I understand that an aim of inquiry and participatory pedagogy is to explore areas of interest to the children, I would question if an inquiry such as this would be as active in another sample of children of the same age. Perhaps going forward in my teaching career, I can explore this further.

Finally, how participatory pedagogy would materialise in a younger sample warrants further research. In a younger class, where interests and focus may differ from older children, perhaps it would be more challenging for children to work at the higher level of Hart's Ladder of Participation (1992).

Reflection

It would be remiss of me to finish this paper without making brief reference to the sheer excitement in teaching and learning that took place throughout this inquiry. It was clear from the energetic atmosphere the affective domain was invigorated by inquiry. As a teacher, I felt fulfilled and energised in my work. From the buzzing classroom atmosphere, the excitement regarding correspondence and prospective "action events", and then the children's resistance to curtailing the inquiry when school closures were announced, it was clear that they felt the same.

I now feel that my role as an educator is to adopt an IBL approach to teaching and learning, where direct experience, cognitive learning and affective learning are integrated into the children's learning experiences. By having a participatory approach to learning in this study, I could see the value and importance of children having agency and ownership over their learning. I felt that deeper, more holistic and comprehensive learning was occurring when this approach, which is central to inquiry, was adopted. Moreover, as a result of adopting an IBL approach to this study, my values around children's child citizenship and empowerment are stronger. For this reason, promoting empowerment and citizenship through inquiry will be an integral part of my practice going forward.

Inquiry, in one form or another answered the research questions that were formulated when this study began. Based on the results of this study, I would propose that an IBL approach will communicate to our children that they are valued in society, that their voices are significant and that their actions are important. It will communicate to them that they are seen and they are heard. By adopting this approach, we can empower children to take meaningful action.

REFERENCES

- Ampuero, D., Miranda, C. E., Delgado, L. E., Goyen, S., & Weaver, S. (2015). Empathy and critical thinking: primary students solving local environmental problems through outdoor learning. *Journal of Adventure Education & Outdoor Learning*, 15(1), 64–78. <https://doi.org/10.1080/14729679.2013.848817>
- Austin, S. (2019). Translating critical thinking into meaningful action. (1st ed.). In B. O'Toole, E. Joseph, & D. Nyaluke (Eds.), *Challenging perceptions of Africa in schools; critical approaches to global justice education*. (1st ed.). Oxford: Routledge.
- Australian Curriculum Assessment and Reporting Authority. (2012). Shape of the Australian Curriculum: Geography. *Geography Australian Curriculum and Assessment Reporting Authority*. Retrieved from https://docs.acara.edu.au/resources/Shape_of_the_Australian_Curriculum_Geography.pdf
- Bahou, L. (2012). Cultivating student agency and teachers as learners in one Lebanese school. *Educational Action Research*, 20(2), 233–250. Retrieved from <https://doi-org.mielibrary.idm.oclc.org/10.1080/09650792.2012.676288ire>
- Barker, J., & Weller, S. (2006). “Is it Fun?” Developing Children Centred Research Methods. *International Journal of Sociology and Social Policy*, 53(4), 194–200. <https://doi.org/10.1179/str.2006.53.4.005>
- Barlow, A. (2013). No Title. In S. Scoffman (Ed.), *Teaching Geography Creatively* (pp. 118–130). New York: Routledge.
- Baxter P., & Jack, S. (1990). Qualitative case study methodology: study design and

implementation for novice researchers. *The Qualitative Report*, 13(4), 544–559.

Retrieved from <https://nsuworks.nova.edu/tqr/vol13/iss4/2>

Breen, R. L. (2006). A Practical Guide to Focus-Group Research. *Journal of Geography in Higher Education*, 30(3), 463–475.

<https://doi.org/10.1080/03098260600927575>

Camire, A. (2012). No Title. Retrieved May 17, 2020, from

<https://www.scribd.com/doc/240964700/inquiry-cycle-kathy-short-by-alison>

Catling, S. (2005). Children's personal geographies and the english primary school geography curriculum. *Children's Geographies*, 3(3), 325–344.

<https://doi.org/10.1080/14733280500353019>

Catling, S. (2014). Giving younger children voice in primary geography: Empowering pedagogy - A personal perspective. *International Research in Geographical and Environmental Education*, 23(4), 350–372.

<https://doi.org/10.1080/10382046.2014.946321>

Cohen, L., Manion, L., & Morrison, K. (2007). *Research Methods in Education*.

Retrieved from

<http://search.ebscohost.com/login.aspx?direct=true&db=cat05145a&AN=mie.15714&site=eds-live>

Davis, J. M. (2007). Analysing participation and social exclusion with children and young people. Lessons from practice. *International Journal of Children's Rights*, 15(1), 121–146. <https://doi.org/10.1163/092755607X181702>

Department of Children and Youth Affairs. (2014). *Better Outcomes, Brighter Futures: The National Policy Framework for Children and Young People, 2014-2020*.

Dublin: Government Publications.

Department of Children and Youth Affairs. (2015). *National Strategy on Children and Young People's Participation in Decision-making, 2015-2020*. Retrieved from Government Publications website:
<https://assets.gov.ie/24462/48a6f98a921446ad85829585389e57de.pdf>

Dewey, J. (1933). *How We Think (rev. ed.)*. Boston: D.C. Heath.

Ferrier, S., Ninan, K. N., Leadley, P., Alkemade, R., Acosta, L. A., Akçakaya, H. R., ... Wintle, B. (2019). Summary for policymakers of the methodological assessment of scenarios and models of biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. *Secretariat of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*, (May 2019), 39.
<https://doi.org/10.1590/1676-0611201600010001>

Fien, J., & Gough, A. (1996). Environmental education. In R. Gilbert (Ed.), *Studying society and the environment: A handbook for teachers* (pp. 200–216). Melbourne: Cengage Learning Australia.

Garrison, D., & Akyol, Z. (2013). The Community of Inquiry Theoretical Framework. *Handbook of Distance Education*, 104–119.

Geographical Association. (2009). *A different view: A manifesto from the Geographical Association*. Sheffield, England: Geographical Association.

Geographical Association. (2019). No Title. Retrieved from
<https://www.geography.org.uk/Curriculum-making>

- Grove, M., Overton, T., & Boyes, L. C. (2013). *Getting Started in Pedagogic Research within the STEM Disciplines*. Retrieved from http://www.heacademy.ac.uk/assets/documents/resources/publications/STEM-pdfs/Pedagogic_Research_Guide_Final_Version.pdf
- Grunsell, A. (2007). Social Justice. In C. Holden & D. Hicks (Eds.), *Teaching the global dimension: Key principles and effective practice (1st ed.,)* (pp. 82–91). London: Routledge.
- Guccione, L. M. (2011). In a World of Mandates, Making Space for Inquiry. *The Reading Teacher*, 64(7), 515. Retrieved from <https://www.jstor.org/stable/41203442>
- Harste, J., & Leland, C. H. (1998). No quick fix: education as inquiry. *Reading Research & Instruction*, 37(3), 191–205. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=eue&AN=507637647&site=eds-live>
- Hart, R. (1992). *Children's Participation: from Tokenism to Citizenship. Innocenti Essays, No. 4*. Florence, Italy: International Child Development Centre of UNICEF.
- Heater, D. (2004). *A History of Education for Citizenship*. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=cat05145a&AN=mie.25919&site=eds-live>
- Heffernan, B., O' Doherty, C., & Dillon, F. (2019). Extinction Rebellion begins week of action with march through Dublin. *The Irish Independent*. Retrieved from

<https://www.independent.ie/irish-news/extinction-rebellion-begins-week-of-action-with-march-through-dublin-38569739.html>

- Higgins, P. (2001). *Learning outdoors: Encounters with complexity. Paper presented at the European Institute for Outdoor Adventure Education and Experimental Learning, Other Ways of Learning. Fourth European Congress for Outdoor Adventure Education and Experimental Learning*. 99–106. Rimforsa (Suecia): EOE.
- Hoban, S., & Romero-Severson, J. (2011). Challenging a “Why Should I Care” Attitude by Incorporating Societal Issues in the Classroom. *The American Biology Teacher*, 73(1), 39–41. <https://doi.org/10.1525/abt.2011.73.1.8>
- Hope, M. (2009). The importance of direct experience: A philosophical defence of fieldwork in human geography. *Journal of Geography in Higher Education*, 33(2), 169–182. <https://doi.org/10.1080/03098260802276698>
- Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. (2019). *United Nations Global Assessment on Biodiversity and Ecosystem Services*. Paris.
- Jensen, B. B., & Schnack, K. (2006). The action competence approach in environmental education. *Environmental Education Research*, 12(3/4), 471–486. <https://doi.org/10.1080/13504620600943053>
- Keiffer, C. (1984). Citizen empowerment: A developmental perspective. *Prevention in Human Services*, 3(16), 9-35.
- Kim, B. S., & Darling, L. F. (2012). Shades of Pink. *YC: Young Children*, 67(2), 44–50. Retrieved from

<http://search.ebscohost.com/login.aspx?direct=true&db=eue&AN=85368458&site=eds-live>

Kingsnorth, P. (2012). The new environmentalism: Where men must act “as gods” to save the planet. Retrieved May 7, 2020, from The Guardian website:
<https://www.theguardian.com/commentisfree/2012/aug/01/neogreens-science-business-save-planet>

Kolb, D. A. (1984). , 8(4), 359–360. hEKolb, D. a. (1984). Experiential learning: Experience as the source of learning and development. *Journal of Organizational Behavior*
<https://doi.org/10.1002/job.4030080408>
 as the source of learning and devel. *Journal of Organizational Behavior*.
<https://doi.org/10.1002/job.4030080408>

Krapfel, P. (1999). Deepening children’s participation through local ecological investigations. In G. Smith & D. Williams (Eds.), *Ecological education in action* (pp. 47–64). New York: SUNY Press.

Lave, J., & Wenger, E. (1991). *Situated learning*. London: Cambridge University Press.

Lindfors, J. W. (1999). *Children’s inquiry. Using language to make sense of the world*. New York: Teachers College Press.

Lucas, A. M. (1979). *Environment and environmental education: Conceptual issues and curriculum implications*. Melbourne: Australian International Press and Publications.

Lucas, P., Fleming, J., & Bhosale, J. (2018). The utility of case study as a methodology for work-integrated learning research. *International Journal of*

Work-Integrated Learning, 19(3), 215–222. Retrieved from

<http://search.ebscohost.com/login.aspx?direct=true&db=eue&AN=141521849&site=eds-live>

MacArthur, E., Waughray, D., & Stuchtey, M. (2016). Rethinking Plastics, starting with packaging. *World Economic Forum*, 1–206.

<https://doi.org/10.4324/9780203965450>

Marshall, C., & Rossman, G. B. (2010). *Designing qualitative research* (5th ed.). Thousand Oaks: Sage Publications.

McClelland, D. C. (1975). *Power: The inner experience*. New York: Irvington Press.

Merriam, S. B. (1998). *Qualitative research and case study applications in education* (2nd ed.). San Francisco: Jossey-Bass Publishers.

Morrison, K., Cohen, L., & Manion, L. (2011). *Research Methods in Education*. New York: Routledge.

Morrow, V. (1999). “We are people too”: Children’s and young people’s perspectives on children’s rights and decision-making in England. *International Journal of Children’s Rights*, 7, 149–170.

Morrow, V., & Richards, M. (1996). The Ethics of Social Research with Children: An Overview. *Children and Society*, 10, 90–105.

Murdoch, K. (2015). *The power of inquiry: Teaching and learning with curiosity, creativity and purpose in the contemporary classroom*. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=cat05145a&AN=mie.25616&site=eds-live>

- Nairn, K. (2005). The problems of utilizing 'direct experience' in geography education,. *Journal of Geography in Higher Education*, 29(2), 293 –309.
- Neale, B. (2004). *Young children's citizenship: Ideas into practice*. York, UK: Joseph Rowntree Foundation.
- Noddings, N. (2016). Loving Our Earth, Our Home. In K. Winograd (Ed.), *Education in Times of Environmental Crises; Teaching Children to be Agents of Change*. (pp. 14–22). Oxford: Routledge.
- Plummer, A., & Van Dis, J. (2019). Investigating Marine Plastic Pollution: Student-Driven Citizen Science. *Science Scope*, 43(3), 65–74. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=eue&AN=138787985&site=eds-live>
- Pufall, P. B., & Unsworth, R. B. (2004). *Rethinking Childhood*. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=eue&AN=39650705&site=eds-live>
- Quinn, F., Elliott, S., Taylor, N., & Littledyke, M. (2015). Educating for sustainability in primary science education. ,. In C. Eames, N. Taylor, & F. Quinn (Eds.), *Educating for sustainability in primary schools: Teaching for the future* (pp. 91–119). Rotterdam: Sense Publishers.
- Riordan, M., & Klein, E. J. (2010). Environmental Education in Action: How Expeditionary Learning Schools Support Classroom Teachers in Tackling Issues of Sustainability. *Teacher Education Quarterly*, 37(4), 119–137. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=eue&AN=508189596&site=eds-live>

- Roberts, M. (2015). Critical thinking and global learning. *Teaching Geography*, 40(Summer), 55–59. Retrieved from <http://geography.org.uk/Journals/Journals.asp?issueID=103>
- Robottom, I. (1987). Towards enquiry-based professional development in environmental education. In *Environmental education: Practice and possibility* (pp. 83–119). Victoria, Australia: Deakin University Press.
- Roche, J. (1999). Children: Rights, participation and citizenship. *Childhood*, 6, 475–493.
- Selby, D. (2017). Education for sustainable development, nature and vernacular learning. *CEPS Journal*, 7(1), 9–27.
- Shier, H. (2009). Pathways to participation revisited Learning from Nicaragua ' s child coffee workers. In B. Percy-Smith & N. Thomas (Eds.), *A handbook of children and young people's participation* (pp. 215–227). London: Taylor & Francis Ltd.
- Short, K. G. (2009). Inquiry as a stance on curriculum. In S. Davidson & S. Carber (Eds.), *Taking the PYP forward: The future of the iB Primary Years Programme* (pp. 11–26). Retrieved from http://books.google.com/books?hl=en&lr=&id=hv9urTgYQpgC&oi=fnd&pg=PA11&dq=%22Inquiry+as+a+stance+on+curriculum%22&ots=UkxuuNsXBU&sig=DvSOn4_4gPi3zEOHmDomV65uuV4
- Short, K. G., & Harste, J. (1996). Creating classrooms for authors and inquirers.(2nd ed.). In *Creating classrooms for authors and inquirers.(2nd ed.)*. Portsmouth, NH: Heinemann.
- Simpson, J. (2018). *Participatory Pedagogy in Practice : Using effective participatory*

pedagogy in classroom practice to enhance pupil voice and educational engagement. London.

Smith, A. B. (2010). Children as Citizens and Partners in Strengthening Communities. *American Journal of Orthopsychiatry*, 80(1), 103–108.
<https://doi.org/10.1111/j.1939-0025.2010.01012.x>

Smith, G. (2007). Place-based education: Breaking through the constraining regularities of public school. *Environmental Education Research*, 13(2), 189–207.

Summers, M., Corney, G., & Childs, A. (2003). *Teaching Sustainable Development in issues for teachers*. 9(3), 37–41. <https://doi.org/10.1080/1350462032000093174>

Sutherland, D. (2009). Education as an agent of social evolution: the educational projects of Patrick Geddes in late-Victorian Scotland. *History of Education*, 38(3), 349–365. <https://doi.org/10.1080/00467600902838120>

Theis, J. (2009). Children as active citizens: An agenda for children's civil rights and civic engagement. In N. & B.-S. P. Thomas (Ed.), *A handbook of children and young people's participation: Perspectives from theory and practice* (pp. 343–355). London: Routledge.

Thomas, G. (2005). Facilitation in Education for the Environment. *Australian Journal of Environmental Education*, 21(3), 107–116.
<https://doi.org/10.1017/S0814062600000999>

Thomas, G. (2011). The case: generalisation, theory and phronesis in case study. *Oxford Review of Education*, 37(1), 21.
<https://doi.org/10.1080/03054985.2010.521622>

- UN General Assembly. (1989). Convention on the Rights of the Child. *United Nations, Treaty Series*, 1577, 3. Retrieved from <https://www.refworld.org/docid/3ae6b38f0.html>
- Valentine, G. (1999). Being Seen and Heard? The Ethical Complexities of Working with Children and Young People at Home and at School. *Place and Environment*, 2(2), 141–155.
- Vygotsky, L. (1978). *Mind in society*. Harvard University Press.: Cambridge, MA.
- Waldron, F., & Oberman, R. (2016). Responsible citizens? How children are conceptualised as rights holders in Irish primary schools. *International Journal of Human Rights*, 20(6), 744–760. <https://doi.org/10.1080/13642987.2016.1147434>
- Watts, J. (2019, March 11). Greta Thunberg, schoolgirl climate change warrior: ‘Some people can let things go. I can’t.’ *The Guardian*. Retrieved from <https://www.theguardian.com/world/2019/mar/11/greta-thunberg-schoolgirl-climate-change-warrior-some-people-can-let-things-go-i-cant>
- Wee, B., Fast, J., & Shepardson, D. (2004). Students’ Perceptions of Environmental-Based Inquiry Experiences. *School Science & Mathematics*, 104(3), 112–118. <https://doi.org/10.1111/j.1949-8594.2004.tb17991.x>
- Wilson, E. O. (2002). *The future of life*. New York: Alfred A. Knopf.
- Wolk, S. (2008). School as Inquiry. *The Phi Delta Kappan*, 90(2), 115–122. Retrieved from <https://www.jstor.org/stable/20493570>
- Yin, R. K. (2009). *Case Study Research : Design and Methods*. Thousand Oaks, CA: Sage Publications.

Youngquist, J., & Pataray-Ching, J. (2004). Revisiting "Play": Analyzing and

Articulating Acts of Inquiry. *Early Childhood Education Journal*, 31(3), 171–178.

<https://doi.org/10.1023/B:ECEJ.0000012135.73710.0c>

APPENDICES

Appendix A: Letter to Board of Management

Dear [REDACTED]

Re: Research project

I am currently completing Year 2 of a Masters in Education Studies (Inquiry Based Learning) at the Marino Institute of Education [MIE]. As part of my course, I am required to do a small scale research project. I am hoping to work with the children in my class for the purposes of this research.

I am planning for the class to visit the marine environment and investigate the issues that it faces (e.g. litter on the beach, plastic pollution and the impact of pollution on marine/human life). In the weeks following our visits to the marine environment, the children will conduct research, participate in investigations and engage in activities which consolidate their learning. During this time, I am hoping to take photographs and collect work samples of the children's work. Additionally, I am planning to conduct focus groups, in which we will discuss empowerment about environmental issues. This will be done before and after engaging in the intervention.

To analyse the children's views, it will be necessary to take an audio recording of the focus group discussion. Pseudonyms will be used for any work samples, photograph captions or quotes from the focus groups. Children will be invited to choose these names. Therefore, they will be unidentifiable at all times, in accordance with GDPR.

Data collected will be used for examination purposes only. College regulations require that data is stored for 18 months after examination. After this time, all recordings and samples will

be destroyed. Parental consent and child assent will be sought for the above activities. The children can choose to withdraw from the process at any time.

If you have any questions or seek clarification please do not hesitate to contact me at the school phone number.

Thanking you for your support,

Ailbhe Nolan

Appendix B: Letter of Parental Consent

Dear Parents and Guardians,

I am currently completing Year 2 of a Masters in Education Studies (Inquiry Based Learning) at the Marino Institute of Education [MIE]. As part of my course, I am required to do a small scale research project. I am hoping to work with the children for the purposes of this research.

We will conduct an inquiry about critical issues in the marine environment (e.g. litter on the beach, plastic pollution and the impact of pollution on marine/human life.). Following this, I am hoping to look at children's sense of empowerment as regards tackling these issues.

Throughout the inquiry, I am hoping to take photographs and collect work samples of the children's learning. Additionally, I am planning to conduct focus groups, in which we will discuss empowerment about environmental issues. This will be done before and after engaging in the inquiry.

To analyse the children's views, it will be necessary to take an audio recording of the focus group discussion. Pseudonyms will be used for any work samples, photograph captions or quotes from the focus groups. Children will be invited to choose these names. Therefore, they will be unidentifiable at all times, in line with GDPR. Data collected will be used for examination purposes only. College regulations require that data is stored for 18 months after examination. After this time, all recordings and samples will be destroyed. You may remove your child from the process at any time. The child can choose to withdraw involvement at any time also.

If you have any questions or seek clarification please do not hesitate to contact me at the school phone number.

Thanking you for your support,

Ailbhe Nolan

Child's name (please print): _____

Please tick:

- ☐ I consent to my child participating in this project.
- ☐ I do not consent to my child participating in this project.

Parent / guardian signature _____ Date: _____



Appendix C: Child Assent Form

Information

Dear Room 11,

Together, we will be investigating in the marine environment. We will visit the beach a few times to examine these problems in more detail.

I am hoping to take photographs as we work on this project together. Also, I will collect some of your work which shows how much you have learned. We will be having some group discussions too. During these discussions, we will talk about how you feel about environmental issues. I will record these discussions so that I can listen back to them and be reminded about what was said.

You will be invited to choose a fake name (pseudonym) for labelling any of your work. I will use this fake name if I quote anything that we discuss during our group sessions too. This means that nobody will be able to identify you by looking at the work in my project. I need

to keep your work samples, recordings and photographs for 18 months after I finish my project. After this time, they will be destroyed.

You can choose to remove yourself from the project at any time.

If you have any questions, just ask me!

Ms Nolan

- I am happy to take part in this project
- I would prefer not to take part in this project

Participant's signature_____ Date:_____

Appendix D: Timeline of Engagements

Date	Setting	Description
3.10	Location: school Context: Incidental discussion in classroom Involved: class, me	Connection- Media coverage of whale swimming in Dublin Bay surfaced and together, we read an online article about it in the classroom. We looked at footage of the whale swimming in the local bay which is close to the school. Familiar landmarks were pointed out in the footage. The children queried why the whale was out of its natural habitat. They wondered if there were predators or pollution in its habitat.
7.10	Location: local Beach Context: - Media coverage on whale washed ashore on local beach after storm - Visit to beach to observe Involved: Class, me, SNA. IDWG representatives, "Tom" (Interpretive Centre)	Connection- the children visited the local beach and visited the scene where the whale was washed ashore. Irish Whale and Dolphin Group (IWDG) gave a short presentation on fin whale, spoke about age and size of whale and reasons for it swimming into shallow waters (breathing difficulties). They explained how the blubber would be tested for various materials Tension: As the children were walking on the beach on their return to school, they commented on the volume of plastic rubbish on the beach. Class theorised that there was probably more than usual given the storm two days before.
13.2	Location- local village Context- historic trail around village Involved: class, me, SNA	Connection- Children continued to engage in fieldwork around the local environment. The community gathered into groups and chose landmarks in the local village to investigate and present to the class. During the excursion, the community discussed how use of services and resources has evolved, the importance of churches, how schooling has changed the advantages and disadvantages for wealthy and poor. Tension: A large volume of plastic rubbish in the local river was observed. The children wondered if the river in the local park displayed similar levels of plastic pollution.
17.2	Location- local park Context: trail/treasure hunt to explore facilities Involved: class, me, SNA	Connection- Naturally, the following engagement occurred at the local park. The children are well acquainted with the sports, leisure and environmental facilities in the local park.

		Tension- The inquirers observed that the issue of plastic pollution was virtually non-existent in the local park. They wondered why this might be.
19.2	Location: city farm and allotments at local park Context: Tour with “Bob” and “Jane”- (local environmentalists) around city farm, horticulture area and allotments Involved: class, me, Bob, Jane	Connection: The following week, the inquirers visited the city farm and horticulture area in the local park. Most of the children had not yet visited the City Farm. They were guided around the area by two local members of the community. The children learned about local and national organisations that care for the park, with a focus on sustainability. The children visited and petted the animals. Moreover, they were each given a plant to take home and take care of. Observed citizens having a positive and innovative approach to sustainability.
25.2	Location: Interpretive Centre Context: Presentation and interview with Tom- manager of centre Involved: class, me, Tom, SNA	Connection: At the Interpretive Centre, the children enjoyed a presentation about the local marine environment. They explored the concepts of predators, prey and food chains. Again, they developed a relationship with another local environmentalist. They were beginning to become acquainted with members of the community who were working towards a more sustainable environment. They learned about organisations who were supporting the maintenance of the beach such as An Taisce (AT) and the BIAG and Clean Coasts (CC) Following the interview, the children visited the beach and observed AT trailer which had just been filled subsequent to a beach clean Invitation: the children were interested in further investigating these organisations
2.3	Location: classroom Context: Gathering in groups based on interests Involved: class, me	Invitation: Based on the visits to areas in the local environment, the children identified areas that they were interested in further investigating. They gathered into 5 groups to allow them to conduct more concentrated investigation on this area of interest: <u>Business group</u> Investigation: This group chose to investigate the environmental policies of local businesses. This included coffee shops, restaurants, takeaways, the supermarket and butchers. Based on their experience of visiting these companies, along with some research online, they discussed the businesses’ current approach to environmental sustainability. Often mentioned was the use of disposable containers, cups, packets etc. The

		children brainstormed and devised some ideas for proposing to these businesses for developing a more sustainable company. These ideas included developing a scheme where customers received a discount if they purchased a drink using their own cup, use of tea leaves instead of tea bags, or takeaways abolishing containers for using dispensers instead of selling plastic bottles. Another idea was for takeaway customers to bring their own lunchbox to the Chinese takeaway and have it filled there at a discounted rate. For the local supermarket, the children suggested having a “bag depot” to which customers could donate some reusable bags. If a customer forgot their bag, they could borrow from the bag depot instead of buying a new bag. Another suggestion proposed to the supermarket was to entirely abolish paper cups for coffee and for customers to use their own cups for purchasing coffee. Finally, they suggested offering wooden cutlery at the deli as opposed to plastic cutlery. The children devised a set of suggestions for ten local businesses, and fact checked the businesses’ current approach to sustainability. They set up a class email account, delegated to each other, and sent emails with their ideas to local businesses. Prior to sending the emails, they shared their draft with the community of inquiry for further suggestions.
3.3	Location: classroom Context: “marine animals group” brainstorm Involved: “marine animals group”, me	<u>Marine animals group</u> Invitation: The marine animals group identified as people who were interested in animal rights. They were interested in investigating charities and sanctuaries that focus on marine animal’s welfare. Furthermore, they were keen to investigate if many of these organisations existed in Ireland. Investigation: They researched these organisations online together. Additionally, they each chose a marine animal that they were interested in further investigating and conducted some research online and at the local library. They chose sharks, turtles, harbour seals, dolphins and coral. They presented a “mini-project” on their marine animal to the community of inquirers
3.3	Location: classroom Context: “marine animals group” presentation	Investigation: One of the children chose to investigate sharks. In researching shark welfare, she discovered the practice of “shark finning.” She was disgusted by this tradition and chose to share her views with the class in her mini project.

	Involved: “marine animals group”, me, class	Representation: This child explained the tradition of shark finning to the community of inquirers. She explained that fins are cut off sharks for the creation of the Chinese delicacy “shark fin soup.” This child was appalled that the sharks were discarded back in the ocean, still alive but unable to swim. Tension: Her disgust was shared by the community of inquirers. They wondered how this practice could be terminated. They agreed that public protest or campaigning would be a way of addressing this problem. Action: They chose to voice their disapproval of this practice by creating an online petition to have it stopped.
2.3	Location: classroom Context: “environmental organisations group” brainstorm and presentation Involved: “environmental organisations group”, me, class	<u>Environmental organisation group</u> Invitation: This group was interested in further exploring local and national organisations that work towards environmental goals. They identified “An Taisce”(AT) “Clean Coasts” (CC) and the “BIAG” as groups they were interested in finding out more about. Investigation: They began following these organisations on social media and researching their work on their websites. Representation: They did a group “poster project” on AT so that they could explain their work in a presentation to the class. Action: They made contact with all three groups to invite them to the school and speak about their work. Furthermore, they asked BIAG if it would be possible to get involved in one of their monthly beach cleans. Having investigated the dates for the beach clean, they decorated posters that could be displayed around the community, indicating date, time and location of the beach cleans. They were eager for the posters to be displayed in as many places as possible (e.g. GAA club, supermarket, soccer club) so that they could reach their audience and have a large community presence at these beach cleans.
2.3-5.3	Location: classroom + beach Context: • “beach clean group” brainstorm • Fieldwork- 2 hours on beach	<u>Beach clean group</u> Invitation: This group were interested in organising a class beach clean. Demonstration: a significant part of the work in this group was planning the beach clean. The children had to consider all the materials and resourced that were necessary to conduct a class beach clean. They devised a list of these

	Involved: “beach clean group”, me, class, extra practitioner	resources and displayed it on the whiteboard under the title “beach clean package.” They sourced these materials in the school and organised “stations” in the classroom where these resources could be collected by each group. The beach clean package contained pooters, magnifying glasses, rubbish bags, sports gloves (collected from sports players in the class), hand sanitizers, bottles, phone (for photographing and recording purposes), clipboards, tally charts, pickers and high-vis jackets. Representation: Upon arrival at the beach, the children dispersed and freely explored the beach for 5 minutes. Subsequent to this, but prior to the beach clean, they conducted a series of short experiments and observations, which were explained by the “beach clean group.” The engagements were as follows: • <i>Engagement 1- Water testing:</i> collection of water samples for pH testing back at school • <i>Engagement 2-Observation:</i> observing organisms on the beach. Pooters were used to examine minibeasts. Magnifying glasses were used to examine crabs in the sand and fish in the water sample. Shells of crabs were examined for microplastics. The remains of a mouse and bird were found in sand dunes and examined from a distance. This prompted an incidental discussion about the food chain. A Kestrel was observed “hovering” for prey. • <i>Engagement 3- Building sand castles –</i> The children were required to find the area on the beach that was best for making sand castles. They explored the reason for this subsequently. • <i>Engagement 4- Shell collection and observation-</i> the children examined and various patterns on the shells. They captured photographs so that they could be identified back at school Investigation: Following this, the children had 5 minutes to run around the beach and complete a tally of the various types of rubbish observed. These tallies were later collated and represented on a bar chart for display in the classroom. They then created a grid with 25 boxes in it. They explored the beach and collected as much rubbish as possible and arrived back at their square within two minutes.
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		Representation: Each child categorised presented her rubbish to the community of inquirers. A large volume of plastic straws were observed. The marine animals group linked this to their research and explained that straws commonly get caught in respiratory tracts of the marine life. A prevalence of smaller plastics was noted also. These plastics, the children reasoned were not small enough to be microplastics (<5mm), but were likely to be overlooked on a beach clean. Some items that are known to contain thousands of microplastics (e.g. cigarette butts) were observed also. The topic of microplastics was discussed and the “microplastics group” answered some questions based on their investigation so far. Tension: When it was time to dispose of the rubbish, the children encountered an issue. There was a distinct scarcity of bins. Those that were on the beach resembled old rusty barrels and did not have lids. There were no signs for the bins and no facility to recycle the rubbish. The children wondered who they could contact to voice their concerns regarding this Action: The following day the children arranged to contact the environmental organisations that had been previously researched about the lack of bins on the beach. They were eager to establish if anything was already being done this issue. They also felt it was important to contact local politicians and DCC to voice their concerns.
5.3	Location: classroom Context:“Microplastics group brainstorm and presentation Involved: “microplastics group”, me, class”	Microplastics group Invitation: The children were interested in finding out more about microplastics, having listened to Tom’s presentation and visited the beach. Tension: Some questions they wanted to answer were: What objects are in our households that have microplastics and if there are any national or international plans to ban microplastic-containing items Investigation: The children did extensive research online on microplastics. And their impact on marine and human life. Representation: They presented the information in a poster to the community of inquirers. They outlined the different types of microplastics and listed many household items that contain them. They offered some tips and advice as regards reducing their microplastic consumption. For instance, they advised avoiding canned food,

		vacuuming regularly, filtering water and using bar versions of shampoo and conditioner. Following this, they chose to share their information through the medium of music by composing a rap on the threat of microplastics to human and marine life. Action: The community of inquirers suggested widening the audience of the rap so that more people would be informed of their threat to the environment. They suggested sharing it on social media, on the RY Facebook page, and setting up an Instagram account to share information about microplastics. This evolved into a broader discussion about all groups sharing their part in the inquiry with a wider audience. One child suggested inviting parents in to the school for an “information morning” about the inquiry where all groups would do a short presentation on their part in the inquiry. Another suggestion was to deliver a presentation at assembly for the entire school. A very popular suggestion was the creation of a website, where all information could be shared and updated on an ongoing basis.
6.3	Location: classroom Context: Correspondence from local businesses and organisations Involved: me, class	Tension: SV: The children, having proposed a series of suggestions to the local supermarket via email, were disappointed with the response received. The response consisted of a series of quotes from the environmental policies of the franchise, and outlined the strategies already in use for reducing waste. The suggestions proposed remained unacknowledged. This generated grave disappointment among the community of inquirers. Re-vision: “Joe”, HO: The children received a lengthy and encouraging response from the manager of a café close to the beach. “Joe” outlined the businesses’ creative and innovative approach to sustainability. This email also outlined the lengthy campaign occurred the previous summer, to have two more bins installed on the island two compressible bins along the walkway. This indicated that campaigning for bins would require perseverance. The children were eager to investigate more about what action would be required to launch a campaign such as this. Joe commended the children on their efforts and encouraged them to keep working towards environmental goals. Tension: “Tom” IC: The children wrote an extensive email, asking the Tom’s opinion on shark

		finning and inquiring if there was a possibility of having more appropriate bins installed on the beach. Moreover, they inquired about the possibility of decorating the bins or making signs to indicate the location of the bins to visitors. The response was relatively short. Tom stated that extra bins are provided during the summer months and that the workers do their best to clean up the plastic on the beach. He said if the children wanted to make posters to ensure that it was clear from the posters that the message was coming from them. Re-Vision: “Lindsay”, BP: The manager from a café in the local village responded to the children promptly. The email addressed each proposal that the children made and outlined why it was not immediately possible to implement these suggestions. She did however outline the environmental goals that this business was working towards, and she reassured the children that their suggestions would be considered in the future. The manager was encouraging and she commended the children on their efforts. The children were pleased that their suggestions were acknowledged and addressed. They felt encouraged by Lindsay’s support also. Tension: “Tara”, DCC: The children wrote to DCC to inquire about having more bins installed on the beach. They described their experience of the beach clean and highlighted that the bins were scarce, lacked lids and that there was no appropriate signage to indicate their location. The response from Tara at DCC was short. Tara cited the cost of solar and recycling bins and stated that it would be unfeasible to have bins of these kind installed. Tara also responded to a message from a local politician who had forwarded the children’s concerns to DCC. Again the email was brief and Tara indicated that she had never received complaints about the type of bins used previously. The children were disappointed with this response. Re-vision/Tension (waiting) Politicians: The politicians commended the children on their work and reassured them that the matter would be brought to the following Council meeting.
6.3	Location: classroom Context: • Phone call with “Dermot”, representative from	Demonstration: After the children’s correspondence with Dermot, representative from BIAG, I had a phone call with him to further discuss the logistics of the situation. Four main issues were discussed

	BIAG regarding possible beach clean on 21.3 Relaying of information to class Involved: Dermot, me, class	- Dermot informed me (and I relayed to the children) that old plastic packaging from the 80s and 90s (e.g. crisp packets and old shampoo and conditioner bottles) had leaked into the local bay and that it was suspected that rubbish was discharging from an old landfill site. - We discussed the logistics of the children joining the community beach clean from the point of view of health and safety and child protection. - We discussed the possibility of the beach clean being suspended. The Covid-19 pandemic was escalating and the likelihood of mass gatherings being cancelled was increasing. - Dermot highlighted the need for funding for beach clean equipment Representation: The children were fascinated by the idea of rubbish that was 35years old being washed up at the local beach. It conveyed the long life of plastic to them. Action (intended): They were extremely excited at the prospect of getting involved in a community beach clean with local activists. Again they were keen to advertise this beach clean as widely as possible to ensure a decent community presence. They were concerned that the pandemic would impact on the event but they were eager to plan attending the beach clean nonetheless. Separately, when the children heard of the financial requirements of BIAG, within seconds they unanimously agreed that their proceeds from the cake sale (which usually occurs at the end of the academic year) would be donated to BIAG.
11.3	Location: classroom Context: discussion of value/importance of inquiry Involved: me, class	Valuation Towards the end of the inquiry, the children reflected on what they had learned from the process. This included development of skills, content and concepts. They mentioned: Skills Group work: children organised themselves into groups. Groups were fluid- opportunity to move in and out of groups. Skills developed included: - negotiation - collaboration - sharing of responsibilities - turn-taking

		○ discussion ○ debate (particularly prevalent and well exercised) • IT skills: ○ <i>Laptops</i>: used regularly for emailing, researching, typing articles and creating the website. ○ <i>Digital tools</i>: used for recording podcasts on “Anchor”; creating and participating in the “Mentimeter” surveys, the “Kahoot!” quiz ○ <i>Website development</i>: identifying how to upload pictures and videos, embedding links and experimenting with visual presentation ○ <i>Phones</i>: used for capturing photographs, videos and recording segments for podcasts • Critical thinking: these skills were exercised in the form of ○ asking questions ○ contemplating various possibilities ○ debating ○ wondering ○ problem solving ○ creative and innovative use of geographical inquiry • Email etiquette: Many children sent their first email during this process. The conventions of email writing, along with use of formal tone were explored during the inquiry. <u>Content</u> • Scientific knowledge ○ <i>Marine animals</i> ▪ <i>Biology and habitats</i>: exploration of predators, prey and food chains ▪ <i>Environmental impact on animals</i>: marine pollution and its impact on marine animals ▪ <i>Harmful practices</i>: exploitation of marine animals (e.g. shark finning) ○ <i>Microplastics</i>- types, prevalence, ways to reduce consumption and impact on marine environment ○ <i>Environmental care and awareness</i>- Children developed awareness around plastic pollution and its prevalence. They discovered new ways of approaching sustainability
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		<u>Concepts</u> • Social action ○ <i>Local community activists:</i> The children became acquainted with local activists in their community (e.g. Bob, Tom, Dermot, Joe etc.). Reminded them that they were not alone in their concerns, or in taking environmentally positive action. Value and need for perseverance was established. Beneficial to connect with these local activists, should they continue to take further environmental action in their community ○ <i>Community of inquiry:</i> The children became increasingly aware of their collective power versus individual power. This was communicated to them through responses from politicians and DCC. • Community ○ <i>Sharing of information:</i> children eager to inform the local community about the environmental issues that the local area was facing. Keen to inspire action also. A channel of empowering the public was through sharing information through the website, posters, information mornings, assembly presentations, recording podcasts, writing articles etc. ○ <i>Collaboration:</i> Explored ways of collaborating with the community to work towards environmental goals (e.g. community beach clean) • Citizenship ○ <i>Civic voice:</i> This was an integral part of the inquiry. Children did this by creating petitions, emailing politicians, businesses and DCC outlining concerns. They learned what forums engage with to voice concern. ○ <i>Civic action:</i> discovered ways of participating in civic action also (e.g. campaign) • Expectations ○ <i>Managing expectations:</i> Children were optimistic as regards environmental goals and the efficiency at which they would be achieved. Responses received from businesses, politicians and organisations caused them to moderate their expectations
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		and to recognise the logistics of achieving such ambitious goals- an important and steep learning curve. • Tension ○ <i>Coping</i>: Recognising tension as an expected and inevitable part of the inquiry process, and not an insurmountable feat- huge pedagogical (and broader) value
9.3-12.3	Location: classroom Context: • development of website • expansion of audience reach, • correspondence with young activists and politicians • school closure Involved: me, class	Representation: During the final week of the inquiry, the children decided to create a website. This had three purposes-; Firstly, to document and share all of the work done in the inquiry until that point. Secondly they were determined to raise awareness around threats to the marine environment and they knew that a website would be an effective channel to a large audience. Finally, and perhaps most importantly, they wanted to and to inspire environmental action among the community. The children employed a variety of digital tools on their website including: <i>Mentimeter</i>: Using Mentimeter served two purposes. Firstly the children wanted to conduct a survey on the proportion of visitors to their site that regularly used a “keep cup.” They felt this would give an approximate indication of the viewers approach to sustainability. Secondly the Mentimeter “word cloud” feature was used. Children had the opportunity to choose three words which they felt described the inquiry for them <i>Kahoot</i>: A Kahoot quiz based on microplastics was created and included on the website. The children thought that this quiz could be conducted in all classes in the school. They believed that this would raise awareness about the microplastics issue. <i>Podcast</i>: Four children in the class recorded two podcast. These were done at the end of the second and third week of the inquiry. They were presented as a “news report” and provided a summary on the main engagement that occurred in the inquiry that week <i>Puppet show</i>: Using recycled plastic, the children created marine animals. They recorded a puppet show using these creations. This was posted on the website to make it more attractive for younger visitors. Interesting videos

		<i>Interesting videos:</i> Videos was posted on the website included a speech made by Greta Thunberg to the UN, and one made by Pope Francis encouraging people to care for the earth. The children thought that using videos showing prominent public figures would influence viewers to be more environmentally aware. Additionally, they posted a video which explained microplastics. They also posted a video aimed at younger children, about environmental care and awareness. Finally, a segment from RTE's "Nationwide", which documented the approach to sustainability in Clonakilty, Cork was posted. The children hoped that their village would be as environmentally progressive one day. <i>Petitions:</i> The children created a page on the website which explained the issues of bin scarcity on the local beach and shark finning. They provided links to their petitions for viewers to sign them if they wished. Action: <i>Correspondance:</i> In the face of disempowerment, the children identified encouragement from others as an important factor in driving them forward. They considered others who. They reflected that Greta Thunberg and Flossie Donnelly (local activist) may benefit from such encouragement. Two children decided to write to Greta and Flossie to show solidarity with them and to support them in their environmental endeavours. Flossie replied and commended her peers on their work. Furthermore, she offered to visit the school and speak to the children about the action she had taken. <i>Articles:</i> The children were constantly thinking of ways to expand their audience reach. In the final days of the inquiry, they wrote to the local Parish Centre and inquired if it would be possible to write an article for the village newsletter. Furthermore, they wrote to "ClassMate" and to a children's blogging site to ask if there articles could be included there also. Finally, they wrote to Taoiseach, Leo Varadkar to outline what they had done in the inquiry thus far. They provided him with a link to their website to further illustrate this. They also highlighted their concerns in relation to the future of the marine environment.
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Appendix E: Link to the Children's Website

<https://sites.google.com/view/save-the-marine-keep-it-clean/home>

Appendix F: Email to Flossie Donnelly

Hi Flossie,

We are six class students writing from *Scoil na Mara* in Dublin. We are inspired by your work. We are doing an inquiry on the marine environment in our class. We have investigated about marine life and marine pollution at *Summerville Beach*.

We have made petitions to increase the amount of bins on the beach and we have also written letter to our local politicians about this. The reason we need more bins because the current bins are rusty with no lids. This sometimes means that rubbish is not being put in them because they don't look like bins and even when there is rubbish in them, sometimes flies out into the sea.

We are in the process of making a website too to raise awareness about the issues on *Summerville Beach*. We are hoping to get involved in a beach clean with the *Summerville Beach Action Group* on March 21st too. You are welcome to join us if you're not busy!

We think you're so inspiring to the country and the world, especially because you're the same age as us. We believe us kids need to work together to make our environment better. If we do one small thing at a time we can change the world together.

Yours sincerely,

Room 11

Appendix G: Response from Flossie Donnelly

Hi Room 11!!

Wow you guys are awesome with all the work you are doing, I know how *Summerville Beach* is, especially at the moment. We are connected with *Summerville Beach Action Group* who are incredible Eco-warriors.

Sadly we have an event in that day in the afternoon and we will be working all morning getting it organised. I have attached the poster in case any of you or your Mums want to come after your amazing clean up. I'd love to know what you find on your beach clean and if it's possible I'll come and visit your school to say hi before the end of the year.

Thanks so much for getting in touch and feel free to follow me on social media to see what I am getting up to and when my next clean ups are.



Appendix H: Email from Local Café

Hi [REDACTED],

Thanks for getting in touch with [REDACTED]. It's great to hear that your class and school are interested in environmental issues and sustainability. It is so important that we all play our part and inhabit the Earth in a smarter and greener way. As a business with nine shops and a food production facility, we are committed to reducing our damaging impact in an effort to make our business fully sustainable in the long term. I have outlined some ways in which we are doing this below:

- We sell branded reusable cups made from bamboo (see link below) and encourage use by offering a 20c discount on all hot beverages when a customer uses a reusable cup in store.

<https://ecoffeecup.com/>

- We changed our disposable cups to reCUP which are fully recyclable (see link below). While these cost us more per cup, we feel it is a vital step to try to eliminate coffee cups going to landfill (or the Brookwood river as you saw!).

<https://www.recup.earth/>

- All of our salad bowls are Compostable which means they can be placed in your brown bin at home.

<https://www.sabert.eu/solutions/sustainable/>

- All other packaging for our food items are recyclable where possible. For example, the film on our meals is not recyclable as they are working on developing a product which does not currently exist on the market.

- We don't have plastic bags, only paper and reusable cotton or jute bags for sale.

- We are introducing filtered water taps for customers and will be selling reusable bottles in our new shops/shop refits. While we will loose out on the sales on bottled water, we feel that reducing waste of plastic bottles is more important.

- We are members of Repak Team Green where they encourage everyone to recycle one piece of plastic more a week, it might be good idea for your class to sign up?

<https://repak.ie/teamgreen/>

- In our production kitchen in Bray where we make all of our food, we have invested in a cardboard baler. As the compacted material is collected by a recycling company as opposed to a waste management company the amount of materials going to landfill ceases. The other environmental benefit of having a cardboard baler is high Co2 emitting bin lorries make fewer trips out on our roads, saving the environment from toxic gases.

- We also invested in dual compartment vans which have both refrigerated and ambient sections within. This allows us to transport our chilled items along with ambient in the same run so we have halved our delivery trips.

You might want to read our blog here which outlines some of these initiatives in more detail:

<https://www.██████████.ie/new-take-away-coffee-cups-reduce-reuse-recycle/>

I hope this helps to explain the small ways in which we are making changes. If you have any questions or suggestions, please feel free to reach out!

Kathleen

Appendix I: Email Response from Local Supermarket

Hi [REDACTED],

Thank you for your recent email to [REDACTED]

Please accept my apology with the delay in replying to your email.

It is great to hear that you are learning about the effects of plastic pollution on marine and human life as it is very important and [REDACTED] take this issue very seriously.

[REDACTED] Becomes Ireland's First Grocery Retailer To Introduce Compostable Produce Bags-

Initiative forms part of pledge to make 100% of [REDACTED] Own Brand and Fresh Produce Packaging Recyclable, Reusable or Compostable by 2025.

19 April, 2018 – [REDACTED] has today announced that it is the first retailer in Ireland to introduce fully compostable and biodegradable produce bags for use by customers in initially 70 of its stores. This is part of a broader strategy to reduce packaging and make 100% of its Own Brand and fresh produce packaging become recyclable, reusable or compostable by 2025.

[REDACTED] is committed to minimising the use of plastic by eliminating, reducing and replacing conventional plastics. The approach considers the most sustainable options to reduce plastic, protect the safety and quality of food and to prevent food waste. The retailer is also working in partnership with stores to raise awareness amongst colleagues and consumers of how to shop the store in a more sustainable way. Commenting on the rollout of fully compostable and biodegradable produce bags, [REDACTED] Managing Director of [REDACTED], said, "The introduction of compostable produce bags is an important step for [REDACTED] as part of an overall commitment to reduce the use of plastics across our supply chain and is part of our broader sustainability strategy to leave a positive impact on the communities that we operate in every day. We recognise that this is an important issue for our consumers and for the health of

the planet.”

Kind regards,

[REDACTED]