Chapter 4.14

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**STEM TO STEAM AS AN APPROACH TO HUMAN DEVELOPMENT: THE POTENTIAL OF ARTS PRACTICES FOR SUPPORTING WELLBEING**

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ABSTRACT

The National Science Foundation conceived the term STEM with an emphasis on the links between economic prosperity and knowledge-intensive jobs that are dependent on science and technology. As such, traditionally STEM subject initiatives have aligned with and facilitated a largely economic conceptualisation of human and social development. It seems likely that the wellbeing crisis that we are experiencing in the West is linked to this. This is compounded by the rising influence of technology which has facilitated what is sometimes called the indoorisation of children, and the raised levels of parental concern about safety; from this follows an associated sense of disenfranchisement for children, with consequences for their wellbeing and happiness.

This chapter begins with an overview of the impact of STEM on wellbeing, arguing that a focus on human development after Sen and Nussbaum is a more holistic approach to understanding wellbeing. In this understanding, wellbeing arises from an *entanglement* of threads representing the different elements of an individual’s life, such as their physical health, their social networks, their access to wild, natural and outdoor spaces, and so forth. This chapter focuses specifically on this access to wild, natural and outdoor spaces (using the arts and arts-based research to mediate this access) to consider how the capability approach provides a foundation for a broadly conceived notion of wellbeing that incorporates environmental sustainability, social justice and future economic wellbeing. Nussbaum’s list of capabilities is used as a framework with which to analyse focus group data from artists working with the arts-based charity Cambridge Curiosity and Imagination. The chapter concludes by considering how working with artists as co-researchers and how the co-development of artwork between children and artists might expose a more holistic understanding of the entangled roles of art and wild/natural/outdoor spaces in the wellbeing of young people. In so doing the chapter adds to conceptualisations of childhoodnature which seek to demonstrate that children and nature are inextricably linked through shared characteristics such as freedom and a non-linear view of time.

*Keywords:* access to nature, arts, capabilities, children’s wellbeing, eco-capabilities, Nussbaum, Sen, STEM, wellbeing

INTRODUCTION

The National Science Foundation conceived the term STEM with an emphasis on the links between economic prosperity and knowledge-intensive jobs that are dependent on science and technology (National Academy of Sciences, 2007). As such, traditionally STEM subject initiatives have been developed with a utilitarian approach, aligning with and facilitating a largely economic conceptualisation of human and social development. It seems likely that the wellbeing crisis that we are experiencing in the West is linked to this (WHO, 2016). This is compounded by the rising influence of technology which has facilitated what is sometimes called the indoorisation of children (e.g. Frumkin et al., 2017; Louv, 2008), and the raised levels of parental concern about safety (e.g. Malone, 2007); and from this follows an associated sense of disenfranchisement for children, with consequences for their wellbeing and happiness.

The study of nature has often been seen as a STEM practice, for example through environmental science (e.g. Sümen & Çalışıcı, 2016) and design and technology (Pitt, 2009). Indeed the environment has been touted as a mechanism for maintaining the relevance of STEM (e.g. Bybee, 2010). However, this limits its potential to understand how humans relate to it and its importance to human flourishing. In seeing the study of nature and the human–nature relationship instead as a STEAM practice, we may be able to achieve a much broader and deeper understanding of the significance of the human–nature relationship. The impacts of STEAM practices might be deepened through paying attention to epistemological framings of post-humanism. Post-humanism is increasingly being used as a mode for thinking about environmental and sustainability education research (e.g. Clarke & Mcphie, 2016; Gannon, 2017; Lindgren & Ohman, 2018; Rautio, 2013). It rejects an anthropocentric view of nature, advocating an understanding that nature and humans are intimately entwined (Malone, 2015). Whilst this view is not uncontested (Lee et al., 2018), such a shift could lead to educational practices that facilitate global efforts to overcome the crisis in wellbeing, particularly amongst children and young people that teachers are increasingly under pressure to address. By using arts-based research methods within STEAM practice and focusing on the interdisciplinarity of human–nature relations, we may be able both to understand environmental and sustainability problems *and* to address them.

*STEM and Wellbeing*

STEM literature predominantly refers to wellbeing through a neoliberal lens, such that its value is measured in terms of economic and financial wellbeing; for example, a number of macroeconomic studies have argued the case for a clear link between student achievement on science and maths tests and per capita gross domestic product (GDP) growth, supporting the widely held belief that STEM education is central to the production of economic prosperity and wellbeing (e.g. Hanushek et al., 2008; Osborne, 2000; Roschelle et al., 2011). Marginson et al. (2013: 13) argue that “STEM is a central preoccupation of policy makers across the world”, for example in Europe (e.g. Rocard et al., 2007; House of Commons Committee of Public Accounts, 2018), Australia (e.g. Office of the Chief Scientist, 2013, 2014), and the USA (e.g. Committee on STEM Education, National Science and Technology Council, 2013). Consequently, underpinned by the belief that STEM skills are crucial for a country’s productivity, government investment has focused on promoting STEM subjects, particularly among minority groups (e.g. Byars-Winston, 2014). This utilitarian approach represents an instrumentalist philosophy of education (Carr & Kemmis, 1986; Simonneaux & Simonneaux, 2012), aligning with and facilitating an economic conceptualisation of development and wellbeing.

However, wellbeing is a much more complex term than this economic, neoliberal framing suggests. This complexity is about more than breadth (in terms of what dimensions of human life are included); it is also about how those dimensions are entwined and *entangled* and how they constellate across time too. To be able to understand the breadth of wellbeing, we bring Amartya Sen’s work on capabilities into play, whilst to try and understand how these notions intra-act and *entangle* we use a post-humanist perspective, drawing on the work of Karen Barad (2017) amongst others. We then go on to suggest that a way to both grow and understand wellbeing is through working with artists and arts-based research methods; methods that enable a fuller expression of the entanglement of different dimensions of wellbeing across and through an individual’s experience.

CAPABILITIES AS AN APPROACH TO HUMAN DEVELOPMENT AND WELLBEING

Amartya Sen describes human capabilities as a “a person’s ability to do valuable acts or reach valuable states of being” (1993: 30). Capabilities are a broad range of human *functionings* that go beyond the notion of subjective and economic wellbeing. Capabilities are future oriented, aiming to provide humans with real opportunities to achieve a state of physical, emotional, intellectual and existential wellbeing in life (Delors et al., 1996), whatever an individual considers valuable (Sen, 1980). Sen’s work challenges dominant models that assert that a nation’s quality of life improves when GDP increases. Evidence shows that a simplistic measure based on GDP is problematic because significant inequalities persist within many nations despite economic growth. In other words, the benefits of economic growth are not enjoyed by all citizens – its distribution is disproportional, resulting in an unequal landscape of economic prosperity. Sen proposes that it is more useful to assess a nation’s development by looking at the *capabilities* of its citizens. The capabilities approach looks at each individual not in terms of actual contribution or achievement (for example to economic growth), but rather their potential (Robeyns, 2006). Sen’s theory is the starting point for the human development approach: the idea that the purpose of development is to improve human lives by expanding the range of things that a person can be and do, such as to be healthy and well nourished, to be knowledgeable, and to participate in community life. Thus human development becomes the process of enlarging a person’s capabilities to function, the range of things that a person could do and be in her life, expressed as expanding choices (Sen, 1989).

There is a longstanding debate in the capabilities literature about the necessity of enumerating a list of capabilities; questioning whether there is a universally applicable and identifiable list of capabilities that all individuals have the potential to access, in spite of circumstance. Sen argues for the importance of public participation and dialogue in arriving at valued capabilities for each situation and context (e.g. 1992, 1999, 2002); he leaves his framework deliberately vague, because of the importance to him that communities decide what capabilities count as valuable. Nussbaum (2000), on the other hand, argues the case for a universal, cross-cultural list of central capabilities for human flourishing, even one that is provisional and open to debate. She identifies ten central human capabilities which would need to be present for a fully good human life: bodily health; bodily integrity; senses, imagination and thought; emotions; practical reason; affiliation; other species; play; and control over one’s environment (Nussbaum, 2000: 78–80). Others, such as Biggeri (2007), develop this list further by creating a capabilities index specifically for children, pointing out that a person’s capabilities may be compromised by decisions made on behalf of that person, specifically young children (Underwood et al., 2015). Sen suggests that education ought to enhance freedom, agency and wellbeing by “making one’s life richer with the opportunity of reflective choice” for a life of “genuine choices with serious options” (1992: 41), and enhancing “the ability of people to help themselves and to influence the world” (Sen, 1999: 18). In this way, the process of identifying capabilities entails some form of participatory and inclusive dialogue, however conceptualised (Saito, 2003). Overall, Sen’s capability approach is based on human agency, meaning that a person is responsible for their own life and their own goals that matter to them. This is significant within a context in which agency has widely been acknowledged as being important to wellbeing (e.g. Hojman & Miranda, 2018; Welzel & Inglehart, 2010), particularly the wellbeing of children (Fattore, Mason & Watson, 2007).

The belief that capabilities influence wellbeing has been tested in a number of studies: for example, Van Ootegem and Verhodstadt (2012) found capabilities to be a successful alternative measure for wellbeing (using life satisfaction as an interpretation of wellbeing); Muffels and Headey (2013) suggest that both subjective and objective wellbeing are the outcome of the interaction process between capabilities and choices; and Anand, Hunter and Smith (2005) found a significant relationship between subjective wellbeing and capabilities.

Our forthcoming publication will explore the way in which the aforementioned lists of capabilities map onto sustainability as it emerges from the United Nations’ Sustainable Development Goals. We have been able to show that there is a strong synergy between what the Sustainable Development Goals are trying to achieve and what the capability approach is trying to achieve. It is also important to note here that Sen’s capability approach holds that the natural world is important to human wellbeing (Anand & Sen, 1994); although this is significant, it does attribute instrumental value to nature, considering how it can be of benefit to people-centred development (Watene, 2016), rather than having its own intrinsic value (Sneddon, Howarth & Norgaard, 2006). However, the literature on this is not consistent; for example, Nussbaum’s (2000) central capabilities include respect for other species and nature, whilst Ballet, Koffi and Pelenc (2013) suggest that human wellbeing should be considered equal to the preservation of natural resources.

This latter position is an invitation for thinking with a post-human perspective about the role of wild, natural and outdoor places in the establishment and maintenance of positive subjective wellbeing. If we consider people to be a part of nature (Haraway, 2015; Taylor, 2013, 2017) (as well as being apart from it, as has been argued elsewhere, e.g. Bonnet, 2012; Lee et al., 2018), entangled and implicit in its fate, then we have to accept that a threat to nature (such as climate breakdown) is also a threat to humanity and that this is likely to have a very significant impact on our mental health and wellbeing. From this point of inherence, it becomes necessary for us to think about our wellbeing as entwined with that of the rest of the biosphere, and that our fate is implicit in the fate of the biosphere. However, it also becomes clear that the process of indoorisation and disenfranchisement of childhood that has happened over the past few decades has involved a disjuncture, resulting in a sense of separateness and a heightened awareness of what Bonnet (2012) and others refer to as the exceptionalism of humanity from nature. This sense of disjuncture might serve the purpose of an anthropocentric existence that treats the planet as a resource or a service (language like “resource depletion” and “ecosystem services” are indicators of this kind of thinking), and something we are in control of. However, the sense of wellbeing and happiness that is derived from being a part of something greater than ourselves, of being an inherent but tiny part of a beautiful and awe-inspiring biodiversity, is not at all served by this disjuncture.

At this point it is worth noting that we use the term “place” in a highly relational, entangled manner, as we have written about elsewhere in relation to this research (Lee et al., 2018). So we are not thinking simply about a geographical, physical location, but about a place that is loaded with meaning emerging from the way that a physical location has been experienced through encounters within it. These encounters bring with them memories of previous events and other creatures that have shared those encounters in that place, as well as the inherited memories and stories of the place that are commonly known. Our conceptualisation of place aligns with that of others such as Massey (1994), Basso (1996), Fettes and Judson (2010), and Clarke and Mcphie (2016).

LOOKING TO THE ARTS FOR DEVELOPING CAPABILITIES AND WELLBEING

Now to the other major thread of our research: the potential of the arts for wellbeing. There is evidence that arts education can improve both wellbeing and social inclusion (e.g. Karkou & Glasman, 2004; Kinder & Harland, 2004; Walshe, Lee & Smith, forthcoming), as well as developing children’s capabilities (Zitcer, Hawkins & Vakharia, 2016). Arts-based approaches have been found to support the development of several of the qualities on Nussbaum’s (2000) list of capabilities: for example, arts performance through kinaesthetic forms such as dance and theatre have a demonstrated impact on bodily health and bodily integrity (Stuckey & Nobel, 2010); practice in the visual arts has been shown to increase one’s development of imagination and thought (Burchenal & Grohe, 2007); and a considerable body of research addresses the role of arts participation in developing emotional skills (e.g. McRobie, 2014; Nussbaum, 1995). Despite this compelling evidence, individuals with low socioeconomic status continue to have less access to the arts than their more affluent counterparts (National Endowment for the Arts, 2015) and the arts are increasingly marginalised in school curricula (National Society for Education in Art & Design, 2016; see also Cultural Learning Alliance, n.d. for further evidence of the way that arts provision has been diminished in British curricula).

What emerges from this discussion of the role of arts and access to natural, wild, outdoor places is a narrative of a childhood experience that is increasingly impoverished and segregated, a child as a thread pulled out of a greater entanglement of nature and stretched into the singular, individualised linearity of a STEM-focused education. In other words, if we imagine the living and non-living elements on our planet each as a shifting and moving thread and nature as the entanglement that results from their interactions, and if we accept that each element is dependent on each other element for its wellbeing and continuance and that it exists in a constant state of responsiveness, then we can see that the thread that represents the child, when it is pulled out of this whole to be regularised and socialised into the routines of the adult human world, becomes impoverished and transformed. What is more, what remains as nature is similarly weakened by the removal and transformation of this element of itself. A better experience of childhood might support a child to become increasingly entwined into their dwelling place, using all forms of expression and exploration at their disposal to create the entwinement and entanglement of becoming; encouraged and guided through a much broader, richer set of STEAM-like practices to inhere in the world they share with other similar and different creatures. What we mean by STEAM-like practice (in contrast to a STEM-focused education) is that the learning that a child experiences might involve the child’s imagination and their artistic, adventuring characters in exploring questions about the world using the knowledge and approaches of the scientific method without determining what or how that exploration takes place. Such practices nurture the child’s sense of awe and wonder whilst also enabling them to learn more about the world and about how we have come to know what we know already, including learning about the scientists and the artists who have contributed to this knowledge. In this way, the child will be able to benefit from a knowledge-rich curriculum (in line with current policy in England) without allowing that knowledge to overpower their capacity for creativity and curiosity.

The work of arts-based charity Cambridge Curiosity and Imagination (CCI) aims to address this challenge. By creating opportunities for children’s creative adventures inlocal, familiar, and (if possible) wild outdoor places, CCI seeks to empower young people (and encourage others in their wider community) with the agency to act in relation to the spaces that matter to them. This empowerment, through the growing of capabilities, may potentiate improved wellbeing, particularly in contexts of economic and social deprivation. In the next section we will discuss some empirical work which demonstrates the potential of CCI’s practice to achieve these ends, focusing on extracts from our data that show how this kind of work can develop capabilities that align with the human capabilities approach.

## EXPLORING CAPABILITIES IN THE LIGHT OF STEAM PRACTICE: A CASE STUDY OF CAMBRIDGE CURIOSITY AND IMAGINATION

The empirical work for this chapter was undertaken as part of an ongoing exploratory ethnographic case study of CCI which aimed to produce thickly described data of an ethnographic nature within a constructivist, interpretivist framework (Whitehead, 2004). The data we are going to discuss here focuses specifically on how the STEAM-like practices of CCI, when viewed through the lens of capabilities theory, provide suggestions for the way that capability theory (as a proxy for wellbeing) can more comprehensively include the concept of nature. CCI brings together artists, educators, parents and researchers with a shared passion for how the arts and nature can transform lives, and a belief in the power of democratic forms of community activism (sometimes termed “artivism”). Children are at the heart of CCI’s work. It practises a carefully considered and articulated approach that is committed to deep listening, thoughtful collaboration and artistic co-creation (Lee et al., 2018). Common to all of CCI’s projects is a focus on developing a sense of agency and voice for all through engagement with the arts, often in nature (Denmead, 2011). Artists work as independent consultants with CCI so this work comprises only part of their professional activity. Using purposive sampling, we invited seven CCI artists to be involved in the research; these comprised all the artists currently or recently working on CCI projects and included some founding artists. In addition, the CCI founding and assistant directors were involved in the research and also became part of the writing team for some of the publications emerging from the research. This latter point is identified here as it speaks to the themes of this book section around how *entanglements* of researcher and researched arise until the notion of objectivity in research becomes superfluous and a deeper understanding of subjectivity and intra-activity takes over and concretises a negotiated approach to understanding what is being investigated.

Our study initially comprised a “talk and draw” focus group interview with the CCI artists, with conversation focusing on three elements: nature, children and place. This was followed by individual interviews with the same artists. The two directors of CCI completed a semi-structured questionnaire comprising open questions that was designed after the artist interviews to elaborate on the emerging data. The focus group and interviews were audio recorded and recordings subsequently transcribed. The transcriptions were sent to the artists for verification, some of whom made minor amendments which were duly incorporated. The amended transcriptions were submitted to a process of *a priori* coding using the capabilities list as a coding template (Table 1). Artist drawings were analysed alongside focus group and interview transcriptions using content analysis (Rose, 2005). To support the internal validity of the research and increase the reliability of our conclusions, data analysis was undertaken independently by two researchers and emerging findings discussed with a third colleague who was present during the interviews.

*Table 1 List of capabilities used for a priori coding; these emerge from a combination of Nussbaum (2000), Biggeri (2007), Di Tommaso (2006), Addabbo, Tommaso and Facchinetti (2004) capabilities and Sen’s basic human freedoms (1993). Examples of text assigned to each code is presented for illustration.*

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| --- | --- | --- |
| **Capability** | **Description** | **Example Quotations from Artist** |
| Senses, Imagination and Thought | To be able to use senses, imagination and thought, informed by education and involving freedom of expression. | “I really enjoy that kind of floating off into the imaginative space of unnatural nature” *(focus group)*  “burnt out bit of metal that a young child picked up, and it was in the same quality as picking up a leaf, and she said 'Look, a burnt witches house” *(focus group)* |
| Autonomy | To have ownership or control over aspects of one’s life. | “But what is nice, and this is where this thing was interesting for me, is that the … children have the power - and this is an important word for me” *(focus group)* |
| Affiliation | To be able to live with and toward others, to recognise and show concern for other humans, to engage in social relations, to be treated with respect and dignity. | “I think their sense of their own value is felt often very quickly through the project, and the longer we can work with them the more that is sustained” *(Deb)*  “I think it's important to feel that you are part of a community and like the reality of school life is existing in a wider context and for you to start to see a little bit beyond that” *(Elena)* |
| Emotions | To love and care for those who love and care for us, to grieve at their absence. To not have emotional development harmed by fear and/or anxiety. | “with the playground we want to change it from a place where we set fire to things to a place which we love, and you're going to change the perception of the place” *(Debbie)* |
| Mental Wellbeing | To be mentally healthy. | “A lot of the workshops I've done when I've asked for feedback, a lot of the children have written or said the word 'safe'” *(Susanne)*  “I find that actually little by little those children are able to gain confidence because you've given them the chance to be and to have a place”*(Caroline)* |
| Religion and Identity | To be able to live by a religion or not by a religion and to be able to live according to one’s own identity. | “I think more and more for me I am really concerned that they re-imagine themselves, they have a sense of who they could also be” *(Deb)* |
| Play | To be able to play, laugh and participate in recreational activities. | “I invited them to hide under the cover, to wrap themselves around the cover and it really worked, they love it, they love that” *(Caroline)* |
| Bodily Integrity and Safety | To have protection from violence of any sort. | None identified |
| Bodily Health | To have good health, enough food and sufficient shelter. | “the area in which the school is is described as being the worst place to live in Britain, and it's well-known as having had more heroin use per head than anywhere else” *(Caroline)* |
| Life | To be able to live to the end of a human life of normal length and not having a life so reduced that it is not worth living. | “the area in which the school is is described as being the worst place to live in Britain, and it's well-known as having had more heroin use per head than anywhere else” *(Caroline)* |
| Other Species | To be able to live with concern for and in relation to animals, plants, and the world of nature. | “I wanted that language of perspective and seeing through an animal's eyes” *(Deb)* |

Results of the analysis suggest that artists articulate the capability “senses, imagination and thought” most frequently both within individual and focus group interviews. In particular, many of the artists reflected on using practice that sparks children’s imagination. For example in the focus group Debbie stated: “I would go in and make, like, a dome or something like that out of willow, and then because it’s not a defined thing, the kids can imagine what it is.” Imagination is a key point: Secker et al.(2017) state that play, imagination and learning improve mental wellbeing. In the focus group, Debbie articulated a belief that they (as artists) were key to helping children imagine: “you are creating a container for their imaginations”. When talking about the senses, Caroline commented:

For instance, I did a little lesson on the colour yellow … so I brought in a huge, soft, yellow blanket, and I wanted the children to feel the colour. So I invited them to hide under the cover, to wrap themselves around the cover and it really worked. They love it; they love that.

This highlights the importance of experiential learning and using the senses in order to learn and develop (Nussbaum, 2000). This experiential aspect of wellbeing is common within the literature (e.g. Kolb, 1984; Dewey, 1959) and was reiterated by the other artists.

In addition to developing senses, imagination and thought, the artists discussed how they developed the children’s ability to work with and have concern for other humans. Susanne described how children working with her “gain often different insights into each other, because sometimes [they] work with other children that they didn’t work with before”. Additionally, they described that children have shown concern and empathy for other students, reflecting studies which show that art supports the development of emotional skills (e.g. McRobie, 2014). Susanne illustrated this:

Then one boy cried, I remember, and he had been a bit outside all the groups. You could see there was a main group that hung out together, then this boy, like the “king” of this group, went and actually encouraged him and helped him.

Affiliation through collaborative approaches to practice is another key point of the artists’ work; this was demonstrated by Sally who explained how she prioritises “collaboration and partnership … I aim and intend always to work alongside children, alongside the teachers, alongside any of the participants that I happen to be working with”. Through their discussion a strong sense of artists valuing the children emerged; for example, Susanne suggested that “I think they feel they are heard and that we really value what they say and that we are taking seriously the things they have to say from their imagination”. Deb agreed, with the statement: “I think their sense of their own value is felt often very quickly through the project, and the longer we can work with them the more that is sustained.” This is particularly the case for children who do not usually find school easy: “I will often have really valued something from a child and then discovered that that child is the child that is always in trouble or whose handwriting is terrible or … But you know, that kind of contrast.” These artists’ practices of working together and valuing children are part of developing the affiliation capability; they contribute to showing concern for other humans, engaging in social relations, and being treated with respect and dignity.

Also of particular note through the artist discussions was the capability of autonomy; for example, Debbie emphasised the importance of this in the focus group:

I was talking about the [town] project as well, one of the really crucial things about that was to give the teenagers a bit of ownership of the place that they were seeing … once they’ve got their own involvement in making the space that they want to use, stuff like that, then it becomes more valuable to them … so something that kind of wasn’t theirs became theirs in a real way.

Sally developed this, suggesting that ownership empowers the children: “that acknowledgement and valuing of what they’ve then named something … that’s really empowering isn’t it? That the children then have a sense of ownership, of claiming the space.” Fattore, Mason and Watson (2007) argue that having a sense of autonomy is important for children’s wellbeing; we suggest that the empowerment of children through CCI’s truly child-led, artistic practice in nature may be of further benefit as it develops intrinsic motivation (Douglas & Jaquith, 2009) which, in turn, contributes to growth of further capabilities.

While this is just a brief analysis, we have illustrated how using Nussbaum’s adapted list suggests that environmental and sustainability education practices that incorporate art pedagogies may be a useful way to conceptualise a more holistic approach to wellbeing. We now move on to the final part of the chapter which considers how engaging children in defining a list of their own capabilities and developing these through participatory arts practice in nature might support a more holistic, embodied and relational growing of wellbeing. This growth can be sustained across a lifetime through setting up affecting experiences that can “flash up”, to borrow a term from Barad (2018), when life trajectories present challenges to wellbeing in the future and can form part of a person’s resilience in the face of these.

THE POTENTIAL OF ECO-CAPABILITIES FOR SUPPORTING CHILDREN’S WELLBEING

Along with Barratt Hacking, Barratt and Scott (2007), we see children as significant stakeholders in their local environment with an equitable right to participate in its current and future development. Barratt and Barratt Hacking (2003) have found that children experience high levels of frustration about the state of the local environment. They find it hard to engage with their environment and this lack of agency means that they are subsequently powerless to effect any changes in it (see also Spencer & Woolley, 2000; Barratt Hacking et al., 2006; Barratt & Barratt Hacking, 2003; Irvine et al., 2016). Seeing this as crucial to the current and future wellbeing of people and planet, and inspired by GeoCapabilities, a multimillion pound project funded by the National Science Foundation and the European Union’s Comenius Programme (e.g. Uhlenwinkel et al., 2017; Walkington et al., 2018), we use the term *eco-capabilities* to describe how children define what is important to them, particularly in terms of environmental sustainability, social justice and future economic wellbeing (i.e. the three pillars of sustainability). With a focus on the wellbeing of children living in areas of high deprivation, we suggest there is a potential to contribute to contemporary academic and societal conversations about children’s disconnect from nature, their wellbeing (or lack thereof) and the role of the arts at the intersection between the two. A future project aims to do just this; taking a participatory approach, we will work with primary-aged children through workshops in schools to explore wellbeing and nature, introducing the concept of *eco-*capabilities. We will use this as a platform from which to elicit from children a list of eco-capabilities that would make them happy or give them greater wellbeing, and ask children to assess themselves against their list: to what extent do they feel they will be able to achieve these? We then aim to explore how the children’s perceptions of these eco-capabilities change through working with the CCI artists in nature, based on co-planned interventions or adventures in their local area. This is in line with the view that attachment to place is linked to a child’s identity and wellbeing (Twigger-Ross & Uzzell, 1996; Green & White, 2007). An essential aspect of this project is the collaboration with the teachers of the classes that we engage in the research; drawing on their expert knowledge will enable us to greatly enhance the data that we collect. We also aim for this work to provide these teachers with a means of developing their own creative practice and ideas for enlivening the curriculum through the STEAM-like practices that CCI artists use. To extend these opportunities to teachers external to the project, we will also be developing resources and convening teach-meets to share this practice.

This project has been developed in consultation with CCI over the past two years and during this time there has been much cross-fertilisation of ideas between practitioners in CCI and the researchers. This is evident in the increasingly explicit focus on wellbeing in CCI’s work alongside the deepening intensification of interests of the researchers in arts-based practices and research. Thus a knot of researcher and researched has emerged which has enhanced and heightened our shared knowledge of the potential benefits for wellbeing that this sort of work has, but the intimacy between us also has implications for our capacity to make the familiar strange, thus threatening our ability to notice and thoroughly appreciate the influences of the work that we are about to undertake. However, being aware of this increasing entanglement is important because it may enable us to consciously exclude ourselves from it in an attempt to understand the implications of the work from a more removed perspective. In essence, we might pull the thread of our involvement in the knot of practice between children, artists, teachers, place and researchers away temporarily to see what unravels and is revealed when we do so.

CONCLUSIONS

Within this chapter, we have conceptualised wellbeing through the capability approach and used this as a mechanism for exploring how the interdisciplinary practice of using art in nature might support positive wellbeing. Using this approach, we have been able to reflect on the ways in which artistic practice in nature, particularly that of CCI, might be one mechanism to address the crisis in wellbeing that has been identified by policy makers and practitioners across a range of sectors (e.g. Public Health England, 2018). Whilst a focus solely on STEM, as conceptualised through a neoliberal lens of economic and financial wellbeing, may in fact contribute to the problem of decreased wellbeing and mental health, the insertion of art for STEAM practice presents potential solutions from which both school-based and broader practitioners can learn and develop. As such, we suggest that arts-based practices might be powerful mediators in addressing the neoliberal drivers of STEM, facilitating deeper epistemological and theoretical understanding of what being a part of nature means for human wellbeing. In particular, it is possible that a post-human onto-epistemic framework might deepen the way we conceptualise the holism of wellbeing, helping us to view it as a trans-corporeal entanglement of human and environment (Alaimo, 2016). This may help us, in turn, to overcome some of the problems with a reductionist view of wellbeing that tries to attribute different elements of wellbeing to different elements of lifestyle (e.g. McGillivray, 2007; Scott, 2012). As part of our plans to investigate eco-capabilities further we will, therefore, seek ways to explore how the eco-capabilities that the children identify are *entangled* with each other and with elements of the environments in which they move and act. Further, we will consider the mechanisms through which STEAM practice which engages children with their local places (Massey, 1994), as exemplified by CCI, can develop these eco-capabilities in the children, and what this might mean for teachers seeking to support children to find ways to develop holistic positive mental health and wellbeing throughout their lives.

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