Nature, Nurture and the Space Between: Lessons from Froebel for the Early Years

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Abstract

In this article, we engage with a question that has occupied the professional, policy, and popular discourse on education and socialization: are a child's development potential and outcomes contingent on innate abilities ("nature") or environment ("nurture") (Plomin, DeFries, & Fulker, 1988; Stiles, 2011; Tabery, 2014; Marley-Payne, 2021)? We explore what a Froebelian perspective can add to this question and how it can be translated into an early years context, focusing on its relevance for policy-making, supporting practitioners, and children's rights. There is ample neuroscientific evidence (e.g., Miller and Jones, 2014) that it never was a clear-cut dichotomy; both forces interact, with the role of the adult as a key moderating variable between the two. For educators, the question thus becomes what these insights mean for our role in supporting child wellbeing and development. We consider the question through a Froebelian lens, starting with an analysis of Froebel's own writings and the assemblages of his pedagogy to show the relevance of his approach in supporting practitioners in their role as mediators of the nature/nurture balance. The theoretical discussion is contextualized in contemporary Scottish Early Years policy and practice, highlighting untapped potential in an environment receptive to Froebelian ideals. We offer three propositions for how the engagement with Froebel's vision can guide those working in the Early Years, and how we frame their interaction with children's ecosystem. In conclusion, we argue for a more nuanced engagement with the nature/nurture debate, in particular in Early Years policy: rather than focusing on a false dichotomy of nature versus nurture, the article calls for a Froebelian reframing of our perspective on the Early Years.

Keywords

Froebel, Early Childhood Education, Environmental Influences, Child Development, Scotland, Educational Reform

1. Introduction

We seek to engage with a question that has occupied the professional, policy, and popular discourse on education and socialization, namely whether a child's development potential and outcomes are contingent on innate abilities ("nature") or environment ("nurture") (see, for instance, Plomin, DeFries, & Fulker, 1988; Stiles, 2011; Tabery, 2014; Marley-Payne, 2021). Our contribution will be to explore what a Froebelian perspective can add to this question and its application to the early years context, focusing on the continued relevance of a nuanced treatment of the nature/nurture interaction for policy-makers, practitioners, and children's rights.

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While it has been long disproven that there is a clear-cut and mutually exclusive duality between nature and nurture (for an overview, see Tabery 2014), new scientific advances emerging from the field of epigenetics (e.g., Rutter, 2002; Miller and Jones, 2014) have more recently been offering evidence for the complexity of the interaction between nature and nurture and the difficulty of mediating their effects for both practitioners and policy makers. For educators, the key question thus becomes what these insights mean for their role in supporting child wellbeing and development. We consider the question through a Froebelian lens, starting with an analysis of Froebel's own writings and the work of educators whom he inspired to show the relevance of his pedagogical approach to support practitioners and policy-makers in mediating the nature/nurture balance. This is particularly remarkable since the most substantial scientific advances in the debate – based on pathbreaking neuroscientific and genetic insights – postdate Froebel's death by almost two centuries.

The following section frames the question, contextualizing its relevance and implications for practitioners, while section 3 presents a critical discussion of Froebel's own writings as well as those of later Froebelian scholars. In turn, section 4 links this theoretical discussion with current Scottish Early Years policy and practice, highlighting untapped potential in an environment in principle receptive to Froebelian ideals. From an applied perspective, section 5 presents four propositions for how the engagement with Froebel's vision can guide those working in the Early Years, and whom we count as belonging to this group. Finally, section 6 briefly summarizes the conclusions and calls for a new direction of travel for Early Years policy: rather than narrowly focusing on a false dichotomy of nature versus nurture, the paper calls for a Froebelian reframing of our perspective on the Early Years.

2. The Question: Relevance and Context

2.1 Nature v Nurture – What Matters and Why?

Discussions about what shapes us as individuals, our personality and character, but, importantly, also our so-called "life chances," have been a longstanding feature of human inquiry. Emblematic of many new directions, including Froebelian pedagogy, first references to the nature versus nurture debate date back to the 19th century; thus, Bynum (2002) credits Sir Francis Galton with its inception in 1869. However, human curiosity about the forces that shape who we are goes further back in history: earliest views in Ancient Greece up to the Middle Ages saw internal forces (the so-called humors) as the determinants of human behavior (Grant, 2002) while the philosophers of the Enlightenment, such as Locke and Rosseau, considered environmental factors, in particular education, as shaping an otherwise "pure" human child, thus coining the proverbial "blank slate" view of early childhood development ("tabula rasa"; Duschinsky, 2012).

As with many debates presented in dichotomous terms, the truth lies somewhere in between, and we will chart some of the most recent insights in the following sections. But is the nature/nurture question still relevant to our current thinking around childhood and education? We argue it is, for three reasons:

1) Making Policy Work: It is very clear by now that nature versus nurture is a false dichotomy; there are significant interaction effects. Yet, as Rutter (2002:1) points out, the dichotomy has come with "much misleading scientific evangelism and journalistic hype" leading to "the twin dangers of destructive

cynicism and gullible expectation". Policy-makers are increasingly proclaiming, based on scientific findings on child development, that the early years provide opportunities for early intervention, with the goal of setting a foundation for lifelong wellbeing (see for instance, Secretary of State for Health and Social Care, 2021). However, the concept of early intervention and its translation into policy is not uncontroversial; Gillies, Edwards, and Horsley (2017) highlight the neoliberal ideology underlying this use of the nature versus nurture debate and how early intervention policies have perpetuated inequalities based on race, gender, and class. Similarly, Featherstone, Morris, and White (2014) argue for a shift from early intervention policies to asset-based, wholistic family support approaches. The use and misuse of recent insights around the nature versus nurture debate therefore calls for a deeply child-centered understanding of the factors that influence life outcomes and the levers that can improve them – one that, we argue, Froebelian Early Years practice can provide. With this article, we are therefore aiming to contribute to a more differentiated debate about what findings mean for policy and practice from a Froebelian perspective.

2) Supporting "Practitioners": In a world where ever higher expectations are placed onto educators, an understanding of the contributions of, and interplay between, nature and nurture can not only help to guide practitioners on their journey; it also helps us to look at a child's wellbeing and potential in a holistic way, acknowledging the full range of actors as well as environmental factors, in a child's life that can – and should – offer support. In a way, the question allows us to start an interdisciplinary dialogue across the education, health, and social work professions, including key carers in a child's family and wider care network – a quintessential principle of Froebelian practice (Bruce, 2012).

3) Children's Rights: Probably the most important reason is the intrinsic right of every child to be treated with dignity and respect, and to receive the right support for the best possible start in life. In our analysis, we focus on Scotland, where parliamentarians voted unanimously to incorporate the United Nations Convention on the Rights of the Child (UNCRC) on 16th March 2021. Understanding what makes for the best start to life by children, and how we can meet the needs of each and every child as they are, not how an education system demands they present, is therefore a right our children can, and should, expect from us.

2.2 Contemporary Developmental Science

Development science is a vibrant field of scholarly inquiry, and this section can only provide a very high-level summary of milestones in the nature/nurture debate. For an excellent, comprehensive overview of the debate, Michael Rutter's 2001 Presidential Address to the Society for Research in Child Development (Rutter, 2002) charts historical progress and recent debates on nature/nurture in development science. A marker in the nature/nurture debate from an education perspective is the difference between leading developmentalists Piaget and Vygotsky in the 1930s. Piaget's theory understood cognitive development to occur in stages, through an interplay of innate capacity and environmental stimulus; teachers assume the role of facilitators that are required to "unlock" knowledge according the pre-set stages (Piaget and Inhelder, 1969). Vygotsky sees a more active/initiating role for the teacher, who imparts formulated knowledge; knowledge is formed through social interaction and thus mostly through "nurture" (Shaffer & Kipp,

2013). In contrast to earlier more fatalistic expectations about a child's potential being set at birth, research from the 1950s to the 70s shifted the focus almost exclusively onto environmental factors (Horowitz, 1992), a trend Rutter (2002) refers to as "rampant environmentalism" (Rutter, 2002:9). This is mainly associated with attachment theory as first defined by John Bowlby (1951), who explored the effects of early adverse experiences and their effect for development throughout a child's life.

In terms of the more recent debates around genetics, developments have been driven mainly by quantitative genetics, based on twin studies which seek to understand the variance of certain traits by looking at genetic and non-genetic influences in a (relatively) controlled environment; findings here provide the first neuroscientific evidence pointing to a false dichotomy of the nature versus nurture debate, and rather demonstrate interaction effects between the two (Rutter & Silberg, 2002). Most excitingly, the emerging field of epigenetics is providing the concrete scientific mechanisms that link nature and nurture through the concept of the "exposome" (Wild, 2005), which connects environmental context with our molecular make-up. Miller and Jones (2014) further explored the field, stressing the role of trauma as a powerful environmental determinant, a view that led to the expansion and redefinition of approaches to attachment and the early years (Darling Rasmussen & Storebø, 2020; NSDC, 2020). The neuroscientific conclusion to the debate is thus one of two necessary yet not sufficient factors, with nurture as a potential key to unlocking nature, and care must be taken when transposing neuroscientific findings into an education context (Hall, Curtin and Rutherford, 2013). In the following section, we argue that Froebel seems to have presciently anticipated this conclusion in his practice, without the benefit of modern scientific insights. Froebel's nuanced view on the interplay between a child as an autonomous learner and its environment, encompassed (and arguably exceeded) an ecological model over a century before it was proposed by Bronfenbrenner (1979). Thus, we suggest Froebel was inadvertently calling for a reframing of the nature/nurture question before it was even fully formulated – giving Froebelian practice a decidedly modern feel and relevance.

Critical Discussion of the Nature versus **Nurture Debate in Froebel's Writings and** Assemblages

3.1 Tracing the Debate in Froebel's Time and Life

Born in 1782, Froebel's professionally formative years were steeped in the upheavals and intellectual/social revolutions of early 19th century Germany. While a full analysis of the period is beyond the scope of this paper, it will focus on those aspects of social and scientific change that are likely to have influenced Froebel's thinking on the nature versus nurture question.

Nipperdey (1983) describes Froebel's period as the world of the new *Bürgertum* (bourgeoisie), moving away from dogmatic church doctrines and towards a wider reach, if not exactly democratic access, to education, civil emancipation, and interest in the sciences. Importantly, Nipperdey also credits the era with the creation of the social sciences (*Geisteswissenschaften*, Nipperdey (1983), pp.498-532); applying insights from the natural sciences to explain cognitive and social phenomena was thus a trend of his time rather than an idiosyncratic feature of Froebel's work. In addition to the new widening of education

and knowledge, two further historic factors influenced Froebel's writings: the shifting geopolitical power structures, from the Silesian Wars in the 1740s to the Napoleonic Wars of 1803-1815; and the German Revolutions of 1848/49 (Nipperdey, 1983; Sagarra, 2017).

Froebel's life and learning reflect his time in intensity and range. He suffered the trauma of losing his mother in 1783 as many of his contemporaries would have done (Nipperdey, 1983). In his youth, Froebel received training in the applied natural sciences while working in Bamberg's forestry department in 1802, before tracing natural shapes into man-made structures during his architectural studies in 1804 (Kuntze, 1952). Froebel's teaching career began in 1805, with training by Pestalozzi in Yverdon between 1808 and 1810, before his fateful move to Keilhau and the foundation of the Universal German Educational Institute in 1816/17 (Spranger, 1960). As the subsequent section 2.2 will discuss, a significant proportion of Froebel's body of thought is represented in his magnum opus, *The Education of Man* (1826), as well as the more empirically-inspired *Mothersongs* (1844), based on his experience of running the first *Kindergarten* in 1840. Both works provide testimony to the rapidly changing social norms and views on education, as well as the newly formed social scientific tradition of the rising German bourgeoisie. As Bruce aptly suggests, Froebel truly was "a man of his time and society" (Bruce, 2020, p.92).

3.2 Froebel's Own Writings

Froebel did not address the nature versus nature question directly but it is a red thread that can be found in his work. In *The Education of Man* (1826), Froebel describes education as a creative process, which was revolutionary in the context of the Prussian education system ("When we are being creative we give body to thought: we render visible the invisible.", p.31). In addition to this creative transformation of the inner to the outer, Froebel's educational theory was revolutionary in so far as he understood the child as an individual presenting with their own idiosyncratic characteristics ("What the pupils know is not a shapeless mass, but has form and life. Each one is, as it were, familiar with himself.", p. 156). Most tellingly, Froebel moved beyond the dichotomy of his contemporaries Rousseau and Locke by understanding the complex interplay between learned knowledge and our very being that shapes our behavior and potential ("We possess a great load of extraneous knowledge, which has been imposed on us and which we foolishly strive daily to increase . . . we have very little knowledge of our own that has originated in our own mind and grown with it.", p. 156). In Froebel's view, the Prussian education system did not acknowledge or make room for the development of the latter, striving for betterment appropriate with social standing – a mindset some of Froebel's followers had not shaken off either as section 2.3 will show (Gunn, 1904).

Placing Froebel in a debate that officially began after his death in 1852, and in which he therefore did not choose to be an active participant, is at best a speculative enterprise. Therefore, this paper will move beyond the literal representation of the nature versus nurture debate in Froebel's writings to a critical review of the core elements of Froebel's teaching and their relevance for educational theory (Liebschner, 1992).

3.2.1 Sensory Learning and the Natural Environment

The Froebelian gifts and occupations (Whinnett, 2012) represent an interconnectedness of objects that can be

grasped by the child intuitively, suggesting an innate ability for reasoning and complex cognitive connections (Read, 1992). This is also reflected in Froebel's approach to interacting with the natural environment; thus Herrington (1998) describes the Froebelian garden as a canvass for his wider teaching, a view confirmed by Brehony (2016), who describes Froebel's view of the teacher as a "gardener" with children as growing leaves.

Froebel's educational theory is thus predicated on freedom and agency for the child (Bruce, 2019; McNair & Powell, 2020), with guidance as assistance on an individual learning path (Liebschner, 1992). It represents a "creative tension between our inner and outer selves" (Hargraves et al., 2019, p.144). Thus, it seems that a review of Froebel's educational theory is transcending the Rousseauvian dichotomy of the nature versus nurture debate, forming a complex and revolutionary interconnected theory even before the debate had officially begun. It appears that Froebel was holding up a mirror to his contemporaries as much as to the modern reader, to suggest that the question of nature versus nurture yields interesting answers, but places them in the wrong framework.

4. Locating the Nature/Nurture Debate in Scotland's Early Years Policy and Practice: Hearts, Minds, and Policy

4.1 Overview

To locate these Froebelian insights within a policy context, we are looking at Scotland and its early years policies. Scotland has a vibrant community of Froebelians, who were involved in shaping the current early years system, arguing in favor of an interconnected perspective on early years practice. This is embodied in the Curriculum for Excellence (CfE; Scottish Government, 2004), which was implemented from 2010 in an attempt to move from outputs and exam results to child-centered holistic learning for life (Humes, 2013), largely aligned with Froebelian principles[1]. Similarly, the *Getting it Right for Every Child* (GIRFEC) framework, with its statutory basis in the Children and Young People (Scotland) Act 2014, reiterates the importance of adopting an outcome focus and child-centered practice across agencies involved in the Early Years. Moreover, the *Early Years Collaborative* followed the tenets of the Christie Report (SG, 2011) to shift the focus from intervention to prevention, thereby acknowledging the importance of early childhood and echoing Froebel's views of the potential that high quality and child-centered early learning can unlock (Scottish Government, 2018). Prominent Froebelians were involved in the creation of the Early Years aspects and guidance of the CfE, with a flourishing Froebelian network across Scotland (e.g., Spratt et al., 2019, Whinnett, 2020).

Nonetheless, outcomes for children have remained disappointing across National Performance Indicators, in particular around child poverty (Scottish Government, 2020). Recent reforms to the Early Learning and Childcare (ELC) system also follow an English path of extending funded hours from 600 to 1,140 per child/annum, with access from two for

[1] Humes and Bryce (2008) describe the Scottish education system as having a history that is distinct from the other three UK nations, with the Curriculum for Excellence having its origins in the McCrone report into Scottish education and the *National Debate on Education* in 2002, with the resulting Curriculum Review Group in 2003 that included notable Froebelian scholars and practitioners (Humes, 2013).

vulnerable children, and three universally (Audit Scotland, 2018). While firm data is as of yet unavailable, anecdotal evidence suggests this expansion of formal ELC may have come at the expense of family support services offered by the statutory and voluntary sectors. So while a move towards more universal access to high-quality ELC provisions seems to support Froebel's approach, the spirit and intent of the policy may have the unintended consequence of counteracting the nurturing, child-centered care that Froebel saw emanate from the family unit as well as educational settings (McNair et al., 2021). Questions remain about competing policy motives and their influence on the ELC reform, such as access to the labor market for both parents, aimed particularly at maternal employment (Audit Scotland, 2018).

Furthermore, Palmer's (2020) edited volume on early years practice and experience in Scotland suggests that the Early Years remain the "Cinderella of the education system" (p.3); authors advocate for a *kindergarten* stage that takes formal education to age 6/7, and the elevation of the Early Years workforce in esteem (and pay), which bears parallels to Froebel's original vision as well as the development of his teachings by his mostly female followers. Scotland thus seems to have the right pre-conditions for a Froebelian vision of nurturing every child's nature holistically and across families and learning settings – the devil, as so often, remains in the detail of making this vision a reality.

4.2 Inequality and Its Legacy

Addressing poverty-related inequalities in health, education, and wellbeing, are the key issues of Scottish social policy, and this goal figures prominently in practice guidance for ELC practitioners. Recalling recent findings from epigenetics that early environmental experiences can affect "nature", i.e., our genetic make-up, practitioners need to understand systemic environmental factors that contextualize and set the parameters for what their early years practice can achieve and what the lived experience of the children they work with looks like. This is a key aspect of the social justice dimension of Froebelian principles (Konstantoni and Emejulu, 2017) and allows practitioners to identify potential bias or factors of social exclusion (Kustatscher, 2017), while also calibrating educational strategies to the needs of individual children.

In "Shifting the Curve," a report to the First Minister, Eisenstadt (2016) attempts to connect the dots between the policy narratives of early childhood, early learning and childcare (ELC), and poverty in the context of Scottish Early Years policy. Access to high quality ELC is suggested as a lever that can lift children and families out of intergenerational poverty through a) allowing parents to be economically active and b) addressing the environmental consequences of growing up in poverty. However, this compensatory education approach is not uncontroversial and, as discussed before, may counteract Froebelian principles of child-centeredness.

Despite the intention of the Child Poverty (Scotland) Act 2017 and the Child Poverty Strategy for Scotland (SG, 2014) to eradicate child poverty by 2020 (McKendrick and Sinclair, 2012), the relative child poverty rate[2] has risen from 19% in 2011/12 to 26% in

[2] Following SG definition: "Proportion of children living in households with equivalised incomes below 60% of the median (middle) UK income in the current year"; see https://data.gov.scot/poverty/cpupdate.html

2019/20 against a revised 2023/24 interim target of 18%; Scottish Government projections for 2030/31 are currently at 38%. Further measures arising from recently devolved powers (Dickie, 2020: 98) as well as the newly introduced Scottish Child Payment of an additional £10 per week/child for families on Universal Credit (SG, no date) attempt to alleviate the effects of a decade of austerity. Practitioners need to recognise the lived reality of children growing up in poverty and adapt their practice, carefully reviewing their conception of "the child" and their environment in light of their own position and potential biases (Cronin et al., 2017).

5. Reflections for Early Years Practice

As the previous sections have shown, science and Froebelian practice are pointing in the same direction. To aid the translation from theory to practice, we propose four propositions for practitioners and those working in the Early Years more widely below.

Proposition 1: Understanding Systems

The complex interplay between environmental and genetic factors requires a full understanding of a child's environment, within and outside formal settings. Importantly, this includes families and care networks as much as Early Years practitioners (Tovey, 2017). While policies may have recently focused on formal settings in a drive to expand high-quality early learning and childcare (ELC), the Froebelian analysis emphasizes that it really does take a "village to raise a child," as the saying goes, and insights on the role of adults in a child's development and learning need to be honored irrespective of where the interaction happens. The proverbial "village" extends to the full community: family and friends, carers, statutory services, and the voluntary sector have a role to play. We need to both understand what a child's individual system looks like and how we can engage those playing a part in it in order to meet a child where it is.

Proposition 2: The Child as Individual

Building on the latter point, science and Froebelian analysis point towards the need to make more room for meeting children as and where they are – not where systems for education, health or social care, expect them to be at any one point in time. The interplay of environmental factors and individual predisposition is unique to each and every one of us. We need to shift policy and practice so that the causal connection of approaches, education, and interventions originates from the child to where their potential will take them, not from a pre-formed goal for all pointing back towards all children. To do so, we need to be more aware of systems and their effects, but also strengthen the opportunity and capacity of professionals to connect with each other across different services, as well as to parents, carers, and the child's "village."

Proposition 3: Teachers as Facilitators

Finally, we can see the value of redefining the view of the practitioner in the early years (and beyond) to one of an empathetic facilitator that brings out the best, knowing that the potential for it already resides in each and every child. This requires a shift away from the strong focus on outputs and even outcomes to emphasizing the importance of process in early years practice, supporting professionals to reflect on and develop their personal, child-centered practice. This may be the most radical step as it goes against the grain of many main-stream education arrangements that focus on outputs, such as measures of attainment and

academic performance. But international comparison shows that this is not only possible, but is also a liberating move towards child-centeredness, addressing inequalities, and increasing job satisfaction for teachers and related professions. Such new education approaches are developing with great results, e.g., the New School in London[3], and Agora[4] in the Netherlands. The same spirit is alive in Froebel's early years practice and practitioners should be supported in reflecting on, and developing their practice.

Proposition 4: The importance of holding the space

If the answer to the nature/nurture question is "a bit of both," it is all the more important to "hold the space" for children. This means to recognize environmental, systemic, and innate factors in order to provide a safe and supported environment for the child to develop according to its own agency; this includes the development of a child's understanding of its own connectedness to others and nature, and its sense of responsibility towards both. This may look different for children living in different circumstances, and highlights the social justice dimension of Froebel's teachings. Practitioners thus need to be active agents of social justice by engaging with intersectionality (Konstantoni and Emejulu, 2017) and critically evaluating their own practice in this light.

5. Conclusion – Life with Froebel: Reflections as Practitioners, Parents, and Human Beings

Amazingly, approaching the question of nature versus nurture from a 19th century Froebelian perspective has led to the same conclusion as our 21st century emerging work on epigenetics: the dichotomy is false and more complex than the question could express. This attests to Froebel's prescience as a man well ahead of his time – and possibly even current mainstream polices and practices. What does this mean for us? Distilling the various conclusions from all sections, we are left with three imperatives: First, the duty to honor a child's range of potential and to help "hold the space" between nature and nurture for the interplay that becomes the child's development. Secondly, we need to review our societal systems to address structural factors, such as poverty, that can affect a child's development. Finally, we need a concerted effort to become agents of social justice, following Froebel's example and do better for future generations. These imperatives are paramount – but with almost two-hundred years' lead-time, what excuse do we have not to act?

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