

Encouraging eco-pedagogical awareness through play amongst early childhood development educators: A reflection on the South African context

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Abstract

Amidst South Africa's ecological crisis and the Early Childhood Development (ECD) to the Department of Basic Education (DBE) structural shift, pedagogical approaches for the 0–4 age cohort require re-evaluation. Current practices often prioritise modern formal instruction aspirations over play, which undermines the cognitive development proclivity of children interacting with nature, while leaving educators ill-equipped to foster environmental consciousness in underprivileged contexts. In this study, we explore how play-based pedagogy can serve as a transformative tool for fostering eco-pedagogical awareness and environmental agency among ECD educators and children. The study focuses on resource-constrained South African educational environments in which socio-economic inequality exacerbates a disconnection from nature. Grounded in a critical pedagogical paradigm, the study employed a five-step systematic qualitative review. Thirty core sources from the Global South and Southern African Development Community (SADC) region were synthesised to identify pedagogical possibilities in South African ECD. Findings reveal that eco-pedagogy is marginalised in local training. What is known as eco-pedagogical competence is a neglected teacher attribute yet play offers a biocentric entry point for learners to engage with nature as a co-teacher rather than as a mere resource. The study thus concludes that fostering ecological justice requires a conceptual shift from that required for a resource-driven response. We recommend including the notion of Indigenous Generativity into formal educator training and framing eco-pedagogy as a fundamental children's right under Section 24 of the Constitution to ensure that environmental stewardship becomes a cornerstone of quality early education.

Keywords: agency, eco-pedagogy, transformative education, early childhood education, play-based learning, environmental ethics

Introduction

The willow tree and the gardener (A narrative reflection)

I was six when I became a teacher. My first classroom was at the back of our semi-attached two-bedroom home, where I grew up with my seven siblings and our parents. My self-created classroom under our willow tree in the backyard consisted of paraffin tins, which served as my learners' chairs, while a cork slate board served as a blackboard to write on. In my classroom, I feverishly narrated stories of the plants and animals as told to me by my paternal grandmother. She had a small vegetable garden in the corner of our backyard where she grew herbs and vegetables for family consumption. Here, she created a space of indigenous generativity where she grew herbs and vegetables for our family. In her absence, my younger sister and I had to take responsibility for watering her seedlings and plants.

The remarkable African training that views the child as intrinsically connected to their environment appears to have been abandoned in modern ECD classrooms. Numerous learners are locked up in urban houses, flats, or apartments, with no outdoor space for play, and their cognitive development is hindered by excessive focus on theoretical learning. Some privately owned educational institutions prioritise accreditations, awards, fame, and international recognition, while their educators concentrate on securing promotion by becoming fixated on achieving high pass rates in examinations based on theoretical and academic knowledge. Consequently, the vital opportunities for learners' cognitive development through meaningful interaction with the environment are frequently overlooked and/or forfeited. The Froebelian (1895) metaphor of the educator as a gardener nurturing young flowers now feels disconnected from the reality of contemporary, resource-constrained (South) African ECD classrooms. Often, inspections are focused on infrastructure standards and health, while the aspirations to maximise break-even, fame, and global competitiveness overshadow the specific cognitive and emotional needs of learners, which are met through interaction with the environment (Fyfe-Johnson et al., 2021). In relation to global academic standards regarding service and pedagogy, the term *care* in Early Childhood Care and Education (ECCE) highlights that the learner's protection, health, nutrition, and eco-pedagogy (i.e., learning through play and the environment) are inseparable. Building on the foundation of play-based pedagogy in the country requires more than just infrastructure; it demands ongoing efforts to raise awareness and foster environmental consciousness among those responsible for children's education. In line with the pursuit of ecological justice in the South African ECD sector, we address the primary question:

How can play-based pedagogy be conceptually restructured to improve eco-pedagogical awareness among educators?

In order to address this question, we explore the following sub-questions:

- What is the current status of eco-pedagogical integration in the South African ECD literature?

- How does the intersection of Freirean critical pedagogy and play-based learning inform teacher or educator pedagogical competence?
- What conceptual (rather than resource-based) shifts are required to foster a rights-based eco-pedagogy in resource-constrained environments?

The significance of our study is rooted in its aim to create environmental awareness to help combat the impact of the absence of learners' interaction with ecological factors that happen through play (United Nations, 2016; van der Heijden et al., 2018). We also intend to spur discussions on the importance of ECD educators creating praxes and pedagogical approaches that inspire hope and possibilities in tackling the eradication of the play phenomenon, which has become increasingly apparent in our modern ECD education and schools (Department of Basic Education, 2022). Kahn (2010) encouraged ECD educators, academics, and practitioners to commit to a critical eco-pedagogy that embraces courageously a new paradigm that allows for transformative ecological praxis that is shaped by the power of human emotions, the cultural rituals of diverse ways of being, and a deep respect for universal rights (Department of Basic Education, 2022). In this paper, we argue that integrating environmental consciousness in the implementation of the curriculum requires a conceptual shift in the training of ECD educators in moving beyond resource-provision toward a framework of ecological sustainability and play-based agency.

Methodology

We adopted a critical pedagogical paradigm, grounded in Freirean theory and Kahn's framework of critical eco-pedagogy for this study. To address the key research question, we employed a systematic qualitative review of pertinent literature to identify gaps and pedagogical possibilities in South African ECCE and ECD. The methodology followed a five-step protocol: (1) identification of keywords and databases (ERIC, JSTOR, Google Scholar); (2) retrieval of records; (3) assessment of scope; (4) screening and coding; and (5) thematic synthesis. Following this protocol, an initial search yielded 84 records. After title and abstract screening for relevance to "ECD," "Play," and "Eco-pedagogy," 42 sources were retained for full-text eligibility assessment. A total of 26 core articles and four policy documents were included in the final synthesis. Most of the reviewed articles emerged from the Global South (specifically the SADC region and Brazil), thus providing a critical post-colonial lens. These were analysed and contrasted with foundational play-based theories from Scandinavia and North America to provide a global-local dialectic on environmental childhood education.

Key issues

In most cases, learners are not participating in play-based learning, and this can be attributed to various factors including the limited time allocated for such activities in schools. The inclination towards formal teaching in following the curriculum, particularly in literacy and mathematics, contributes significantly to diminishing the time available for play-based learning (Barblett et al., 2016). Some educators face challenges because of the lack of relevant knowledge and understanding regarding the implementation of play-based learning

methodologies in their classrooms (Fesseha & Pyle, 2016). The absence of opportunities for learners to engage in play-based learning represents a substantial gap in their age-appropriate learning experiences, all of which are crucial for both short-term and long-term development.

The ongoing trend in the education of children leans towards prioritising academic knowledge over play-based learning, which is evident globally as well. Educators in countries such as the United States (Taylor & Boyer, 2020), Canada (Danniels & Pyle, 2022), and Australia (Barblett et al., 2016) felt compelled to increase the time devoted to academic subjects with this resulting in a reduction of time allocated for play-based learning. In South Africa, Ndlovu et al. (2023) made the same point. This has shifted the focus towards emphasising the development of reading and mathematical skills at the expense of holistic child development (Parker et al., 2022). Learners are frequently found seated at desks engaging in workbook exercises, listening to practitioner-led lessons, or undertaking practice tests. While these activities may fulfil academic standards, they do not always align with age-appropriate practices.

Furthermore, scholars have argued that the transfer of educational reforms and innovations faces difficulties across different periods or diverse contexts influenced by social psychology, culture, beliefs, and, ultimately, ignorance (Hargreaves, 2010; Watkins & Biggs, 2001). Despite the growing global endorsement of learning through play in educational policies and the existence of various playful pedagogies aligning with this approach, the actual implementation of such strategies in primary school classrooms poses major challenges.

Review of literature

The significance of structuring the integration of eco-pedagogy in the ECD curriculum cannot be overstated. Eco-pedagogy, with its emphasis on fostering ecological consciousness and recognising the interconnectedness of all living beings, challenges educators to engage critically with and appreciate human beings as responsible stewards of the environment (Ndlovu et al., 2023). By incorporating eco-pedagogical principles consistently across a learner's academic path, a profound and holistic understanding of these principles can develop incrementally. Eco-pedagogy is an educational approach designed to foster lifelong learning dispositions and holistic problem-solving in children in its incorporation of the principles of social justice and environmental sustainability (van der Heijden et al., 2018). Particularly well-suited for ECD, this pedagogy addresses the pressing challenges posed by climate change and other socio-environmental issues crucial for the Earth's survival. Grounded in a culture of peace and sustainability, it is guided by key principles such as encouraging global thinking, nurturing emotional intelligence, highlighting Earth's identity as integral to the human experience, fostering planetary consciousness, and promoting education for simplicity, care, and peacefulness (Fyfe-Johnson, 2021).

With a central focus on sustainability, interconnectedness, and a critical examination of our impact on the environment, eco-pedagogy encourages educators to emerge as informed and engaged global citizens working actively towards a more sustainable and just world. This approach is grounded in the belief that education should go beyond the transmission of knowledge; it should also cultivate ecological consciousness, critical thinking, and a profound

sense of responsibility towards the environment, rights, and justice (Parker et al., 2022). Also, the challenges of the capacity of the South African education system to prepare today's learners for elevated levels of accomplishment and active engagement in a global 21st-century society begin at kindergarten or playgroup level (Van der Elst, 2016). Thus, there is a pressing need to enhance awareness in individuals, educators, and all members of society. This is particularly important in relation to younger populations in this country whose future actions will shape the development of South African society. We need to avoid intercepting a child's play-based learning stage since this can change the child's behaviour, distort cognitive development, and deny them their rights. This may be particularly relevant to children from disadvantaged backgrounds. Scientifically based evidence has shown that learners in their early childhood education phase learn most effectively when they are engaged in uninterrupted play (Gordon, 2003; Whitebread et al., 2012).

Figure 1
Children playing and interacting with their environment



Images adapted online: <https://stock.adobe.com/search?k=cartoon%20kids%20playing%20outside>

Furthermore, from a critical perspective, it has become increasingly necessary to intensify efforts aimed at nurturing learners' awareness, agency, and sustainable behaviour. This necessitates a comprehensive exploration of research findings on the dissemination of environmental knowledge across the diverse realms of children's lives (Walker, 2017). The approach discussed in this study underscores the importance of a critical examination of the methods and channels through which environmental awareness is conveyed to learners aimed at ensuring a nuanced understanding of the factors influencing their perceptions and behaviour.

Critical pedagogy and eco-pedagogy

The field of eco-pedagogy has emerged as an extension of critical pedagogy. To comprehend the educational concepts of eco-pedagogy, it is necessary to first understand and introduce the basics of the critical pedagogical approach. This approach has its origins in Marxist and neo-Marxist critical theory and aims to transform education in response to institutional and ideological domination, particularly under capitalism. Burbules and Berk (1999, p. 3) defined critical pedagogy as

an effort to work within educational institutions and other media to raise questions about inequalities of power, about the false myths of opportunity and merit for many students, and about the way belief systems become internalised to the point where individuals and groups abandon the very aspiration to question or change their lot in life.

In South Africa and most African contexts, culture, religion, and traditional practices involve a lot of outdoor recreational activities that include playing outside in nature, yet in school, intensive theoretical learning is prioritised over such play-based learning. Hence, the experiences encountered in modern schools seem not to favour the experiences of the very young African child. According to Freire (2004), a critical pedagogy begins with recognising that human beings including learners, exist in a cultural context. People as beings find themselves rooted in temporal-spatial conditions which mark them and which they mark in communion with nature and one another. Bourdieu & Passeron (2000) observed that traditional educational systems tend to mirror and favour the experiences of children from affluent families who can afford schools that provide ways of making up for a child's playtime or experience. This is the why learners from affluent backgrounds can identify more effectively with a schooling system that reflects their cultural practices and beliefs, since the schooling system is based on their values, while learners from economically disadvantaged families encounter challenges adapting because the schooling system is alien to their experiences. As the prevailing systems often operate unnoticed, those in positions of authority tend to attribute the difficulties faced by marginalised individuals to inherent personal traits (Aubrey, 2017). In essence, when a learner from a less privileged background struggles with literacy, educators may erroneously assume the issue lies with the learner's innate learning ability in their neglecting to acknowledge differences in preliteracy experiences and support systems. Given the invisibility of these systemic issues, educational models inadvertently perpetuate existing structures rather than challenging them (Jay & Knaus, 2018). Consequently, learners from the dominant culture continue to thrive, while those from marginalised communities face ongoing difficulties.

Kincheloe (2008) explained that critical pedagogues are aware that every minute of every hour educators are faced with complex decisions concerning justice, democracy, and competing ethical claims. Also, significant to Kincheloe's notion of critical pedagogy is engagement with the emancipatory insights and cultural knowledge of indigenous populations, given that most of the economic, social, and political problems facing our schooling communities are rooted in mainstream socio-political relations and material conditions that fuel authoritarianism, fragmentation, alienation, violence, and greed (United Nations, 2016). Such uncritical dynamics are predicated on an ahistorical view of life that enables the powerful to abdicate their collective responsibility to democratic ideals while superimposing a technocratic and instrumental rationality that represents one objective truth for everyone. The politics of knowledge and issues of epistemology are central to understanding the way power operates in educational institutions to perpetuate privilege and to subjugate the marginalised; supposedly validated scientific knowledge can often be used as a basis of oppression since it can be produced without an appreciation of how dominant power and culture shape it (Jay & Knaus,

2018). As critical pedagogues and edu-revolutionary activists across diverse communities of (South) Africa, we are encouraged to turn to the wisdom of our historical survival. The onus is on us to keep questioning issues tacitly ignored simply because the powerful have been made immune from its effects. Hence, decolonisation in our context implies the abandonment of colonising values and practices that for centuries have denigrated our cultural ways and attempted to disable our life-sustaining capacities (Okoye, 2023). The curriculum for the ECD education system reflects the interests and needs of colonial approaches and this needs to change through influential epistemological and pedagogical approaches. As critical African pedagogues, we believe that education practitioners should be able to identify, comprehend, and address these dynamics as part of their critical transformative praxis.

Brief historical overview of eco-pedagogy

Eco-pedagogy emanates from tangible challenges, paradoxes, and life perspectives, and constitutes a comprehensive and global initiative rooted in the experiences of the South as was made manifest in the inaugural Earth Summit in Rio de Janeiro, Brazil, in 1992. As articulated by Gadotti (2012), eco-pedagogy manifests as a pedagogical, social, and political movement, embodying a curricular approach and a holistic vision for a New Civilisation. This paradigm counters the entrenched anthropocentric mindset prevalent in Western thought, culture, education, economy, politics, and the collective envisioning of life and the future that seeks to fit globalisation into the Western framework of capitalist civilisation. Eco-pedagogy heralds a fresh perspective on life and the world in offering a novel trajectory for constructing a transformative future. It stands as a pedagogy of rights, intertwining human rights with the rights of the Earth (Gadotti, 2012). Notably, on Earth Day, April 22, 2010, the World People's Conference on Climate Change and the Rights of Mother Earth, convened in Cochabamba, Bolivia, proclaimed the Universal Declaration of Rights of Mother Earth, marking a significant milestone in the evolution of Eco-pedagogy. This is a teaching methodology that advocates for transformation, not only in how we educate but also in our relationship with the environment. It acknowledges fundamentally that the ecological crises facing our planet necessitate a profound shift in our approach to education. Eco-pedagogy fosters a holistic and transformative learning experience in empowering student practitioners to reconsider their role in the ecological web and inspiring them to become agents of positive change amidst urgent environmental challenges. Ryan (2012) stated that eco-pedagogy is a recent evolution of environmental education (EE), ecoliteracy, and sustainability education.

Our analysis of reviewed literature reveals that eco-pedagogy in the ECD phase is not merely a topical addition to the curriculum, but a fundamental pedagogical competence. An educator's eco-pedagogical competence is defined here as the ability to facilitate a biocentric worldview through play. In South Africa, this competence manifests as the educator's capacity to bridge the *indigenous-natural* (i.e., the grandmother's garden) with the *formal-educational* (the classroom). For ECD, eco-pedagogy is uniquely relevant because it aligns with the learner's animistic and fluid perception of the world as a child, with an inclusive knowledge of culture, beliefs and environmental consciousness (Department of Basic Education, 2022). As revealed in the analysis, when educators demonstrate eco-pedagogical competence, they move away

from EE that involves teaching about nature) toward eco-pedagogy (teaching as part of nature), in using play as the primary vehicle for this ontological shift. As Kahn (2010, p. 20) highlighted, “It is urgent that we assume the duty of fighting for the fundamental ethical principles, like respect for the life of human beings, the life of other animals, the life of birds, the life of rivers and forests.”

Therefore, eco-pedagogies demand prospective educators to internalise and embody its values and methodologies so that it goes beyond being a theoretical concept and becomes an integral part of an educator’s identity and approach to teaching (and philosophy). This comprehensive commitment would ensure that eco-pedagogy becomes deeply ingrained in transforming educators from being just instructors to becoming eco-pedagogical advocates. This would also ensure ecological justice.

Figure 2

Children engaging with their environment through play



Image Adapted Online: <https://stock.adobe.com/search?k=cartoon%20kids%20playing%20outside>

Why the need for ecological justice in ECD?

Ecological justice entails acknowledging the intricate interconnectedness of humans, other species, and abiotic natural systems on Earth (Bell, 2003). This means that any damage to one part of these interconnected systems has a domino effect on the well-being of other systems, so the flourishing of all interconnected aspects is essential for the well-being of various entities. Additionally, ecological justice emphasises the imperative for humans to recognise Earth’s limitations (Baxter, 2005). In considering Earth as a primarily closed system, it is crucial that we align our notions of human flourishing, equity, and compassion with ecological constraints. Ecological justice involves establishing and promoting regenerative systems that safeguard the well-being of humans, other species, and the Earth. It is a fundamental concept that encompasses the establishment and promotion of regenerative systems that prioritise the well-being of humans, other species, and the Earth itself. Such systems are essential since they offer not only a sustainable approach to living but also help to preserve the planet’s natural resources for future generations.

Furthermore, Freirean (2004) pedagogy offers several advantages to the teacher of environmental stewardship. It implies the potential for social transformation in echoing Freire's words "The future does not make us; we make ourselves in the struggle to make it" (p. 34). Freirean pedagogy also presents an adaptable model in allowing the teacher to assert that learning extends beyond a means to secure employment since it is a tool to affirm our rights in society and actively engage in shaping the course of history, which is not predetermined. Freire further advocated for a dialogic teaching approach that asserts that "it is not our role to speak to the people about our view of the world, not to attempt to impose that view on them, but rather to dialogue with the people about their views and ours" (p. 87). Freirean pedagogy strives to discover the language of the people, particularly in discussions about issues like the environmental crisis, thus fostering communication in this language rather than in the specialised language of so-called experts.

In order to augment this transformative educational paradigm, the incorporation of play-based pedagogy emerges as a powerful strategy. Recognising the significance of play in early childhood education, this approach aligns with Freirean principles by fostering an inclusive and collaborative learning environment. By integrating play-based methods, educators can amplify the exploration of reality in the classroom, encouraging active engagement and shared learning experiences (Danniels & Pyle, 2022). This innovative combination not only enhances the educational process but also nurtures the development of critical thinking skills and social awareness, thus contributing to the broader goal of creating a sustainable and equitable global society. On April 01, 2022, the Government of South Africa transferred the responsibility for ECD from the Department of Social Development to the Department of Basic Education, initiating the process of establishing free and compulsory ECD for all children two years before entering Grade 1 (Department of Basic Education, 2022). This transition underscored the government's commitment to implementing an integrated and aligned model aimed at ensuring access to quality early learning and development opportunities for all children in the country.

The importance of play-based pedagogy in the ECD

Central to guaranteeing the quality of early learning are the ECD educators and leaders of schools and ECD centres. Our understanding of learners' learning through the natural inquiry process of play is anchored firmly in extensive research by anthropologists, developmental psychologists, and neuroscientists (Whitebread et al., 2012). The roots of play-based pedagogy extend back to the late 19th century, with Froebel emerging as a pioneer in acknowledging the educational benefits of play in the 1890s (Eberle, 2014; Ogunyemi & Ragpot, 2016). Froebel (1895) believed that play has a crucial role in learners' cognitive development, and in 1887, a series of educational toys known as "Froebel's gifts" was introduced. Maria Montessori, quoted in Bassok et al. (2016), built on Froebel's ideas in advocating for play in early childhood education and introducing a hands-off approach that presented the educator as an unobtrusive observer. More than a century ago, Dewey (1910) established a connection between children's natural experimentation in play and the scientific inquiry process. Vygotsky (1978) emphasised the profound influence of play on child development that contributes to speech development, cognitive processing, self-awareness, and self-regulation. Neuroscientists, such as Gordon et

al. (2003), have made significant discoveries in revealing that play refines the prefrontal cortex of the brain and stimulates the production of a protein crucial for the differentiation and growth of new neurons and synapses. In summary, these collective concepts suggest that Foundation phase or lower-grade-level learners learn most effectively when they are engaged in uninterrupted play.

In the 1920s, Steiner-Waldorf also advocated for play in education, aligning with Rudolf Steiner's educational philosophy (Han et al., 2010). In this approach, the practitioner plays a central and guiding role in the play setting, assuming the position of the chief storyteller in the classroom. This educational style provided meaningful structure to children's games. Reggio Emilia's approach (1950s–1970s) also highlighted the active involvement of educators during play in fostering a co-learning atmosphere (Edwards, 2017). Practitioners, according to this approach, engage with children by sitting alongside them and facilitating play and thus creating a collaborative and enriching environment (Dotson-Renta, 2016; Ogunyemi & Ragpot, 2016). Again, Nicholson (2019) and Bassok et al. (2016) pointed out the emergence of Forest Schools' methodology, from the 1990s to the present, that originated in Scandinavia and spread globally in the 1990s and 2000s. The Forest Schools' approach encourages outdoor play activities, particularly in unstructured environments, thus allowing learners to engage in activities with a high tolerance for risk-taking. This fosters an environment in which children can challenge themselves and develop self-reliance through outdoor experience. This raises the question: "Why in African schools, is the use of play being overtaken by an overburdened curriculum and craving to champion other forms of learning over play-based ones?" In some rural and township schools in South Africa, the playground and facilities necessary for learners' recreation are dilapidated and nobody seems to bother about replacing them.

What do ECD educators need to know to create awareness with children through play?

To create awareness with learners effectively through play, ECD educators need a comprehensive understanding of developmental theories related to play. Optimal learning for young learners occurs at the midpoint between play and work on a continuum (Fajar & Agustina, 2019). ECD educators equipped with knowledge of developmental theories are better positioned to use play as a meaningful context for both instruction and assessment. They recognise the multifaceted importance of play in fostering social, emotional, cognitive, physical, and motor development. Additionally, a solid academic background in the study of play is essential for ECD practitioners. Play is a fundamental element in learners' lives, since it enables them to master various skills and gain control over their environment. The reciprocal relationship between the environment and play highlights their interconnectedness. Despite the seemingly simple nature of play, studying it is complex. A nuanced definition of play is provided by Weisberg et al. (2013), who described it as activities that are fun, voluntary, flexible, that involve active engagement, and lack extrinsic goals, and often incorporate an element of make-believe.

Moreover, ECD educators need to be intellectually aware of the significance of play to be able to embrace their role as play activists. Fyfe-Johnson (2021) and Edward (2017) emphasised the role of an educator as a committed intellectual—someone dedicated to ending all forms of exploitation and transforming the world. The educator is viewed as an intellectual activist who contributes actively to societal change through the dissemination of knowledge (Department of Basic Education, 2022). This concept positions the educator as an agent of change who thrives in an environment that requires assistance from activists. To cultivate awareness through play, ECD educators should embrace their role as intellectual activists in leveraging play as a powerful tool to enable transformative learning experiences. Educators often find themselves in the role of change agents, tasked with translating educational policies into classroom practice (van der Heijden et al., 2018). Being truly aware would ensure that the translation of policy into action (which is a complex and uncertain process), is not influenced by educators' individual beliefs, skills, knowledge, and attitudes, and would include their acting as mediators between policy directives and classroom implementation.

Challenges aligned with implementation

First, the challenges associated with the implementation of educational policies and the existence of various playful pedagogies include educators having insufficient financial support (Nicholson, 2019). This remains a formidable challenge for school management, necessitating continual efforts to lobby for ongoing assistance. Unfortunately, these persistent endeavours consume significant management time, thereby diverting resources from more constructive work and underrating play-based learning in choosing to be adamant and silent about it. Research indicates that socioeconomic class plays a pivotal role in either facilitating or hindering sustainability education initiatives.

Second, bureaucratic hurdles add another layer of complexity since engaging in environmental education (EE) programmes often involves extensive paperwork and documentation. The bureaucratic demands may lead some schools to lose motivation and, at times, even abandon such programmes altogether.

Third, educators' training presents a critical bottleneck that requires a fundamental shift in the educator's role towards adopting a whole-school approach to teaching and learning. Many view this as impractical given the current constraints on educators' time and the already overcrowded curricula. Environmental and sustainable education continues to be perceived by many as an add-on rather than a holistic change in teaching and learning practices. To garner support from school administrators, governments, and practitioners, it is essential to emphasise the importance of curricula integration rather than the creation of new courses.

Finally, there are also issues of building participation along with challenges related to engagement. To address these challenges, a multifaceted approach is necessary. First, diversifying teaching methods beyond lectures is crucial to building educators' EE capabilities. Second, creating meaningful participation faces several challenges, particularly those linked to how participants interpret the core issues in the whole-school approach. The development of learners' democratic decision-making competencies can be hindered if practitioners guide them

towards predetermined environmentally friendly behaviours without genuinely considering and valuing their ideas and suggestions. The challenges limiting young people's involvement in authentic planning processes, include time constraints, the underestimation of learners' capabilities, a belief that adults can adequately represent children's perspectives, the perception of learners as unskilled and unreliable, a lack of understanding of how to facilitate participation, and a fear of politicising learners (Danniels & Pyle, 2022; Department of Basic Education, 2022). Engaging the entire educational community is another hurdle in the implementation of the whole-school approach. Ecological awareness is often viewed as being of lower priority or a soft option in the curriculum, and sometimes forgotten when major priorities are being addressed (Walker, 2017). Approval by all staff members is rarely a prerequisite for enrolling in a program, and this often results in the project becoming the responsibility of a smaller group. This may lead to resistance to participate in the program from the rest of the teaching staff. Diverging from a school's normal functions and involving learners in activities beyond traditional curriculum subjects can cause discord and disagreements among educators and parents. Additionally, some of the advocated changes may provoke negative reactions from community members. Overcoming these challenges requires a concerted effort to foster genuine and inclusive participation, ensuring that all stakeholders are actively involved and supportive of EE initiatives in the broader educational community.

Implementing an eco-pedagogical play-based pedagogy into the ECD

When eco-pedagogical awareness is woven into the definition of learning through play, accentuating joyful, meaningful, iterative, socially interactive, and actively engaging experiences geared towards fostering cognitive, social, emotional, creative, and physical skills, its relevance and widespread application in primary schools take on an ecological dimension. Numerous impact studies on active learning, collaborative and cooperative learning, experiential learning, guided discovery learning, inquiry-based learning, problem-based learning, project-based learning, and Montessori education explicitly underscore each characteristic of play while emphasising holistic skills development in an ecological framework (Keeley & Benton-Short, 2020). In their exploration of the alignment of these pedagogical approaches with the definition of learning through play, Parker and Thomsen (2019) delved into how these strategies incorporate iteration. Their purpose was to explore new concepts or ideas and emphasise interaction with peers not only for socio-emotional learning but also for fostering an ecologically conscious mindset. This finding holds particular significance since it suggests that schools can circumvent change fatigue (Dilkes et al., 2014) by refining and enhancing implementation from their current position. This approach, rooted in eco-pedagogical awareness, avoids the need for proposing an entirely new learning paradigm that would require substantial systemic reform. In recognising the intrinsic link between play and (w)holistic child development, educators can infuse eco-pedagogical elements into play activities. The practical approach includes the following:

1. Learner Factors: Learners bring diverse prior experiences, skills, and knowledge to the classroom that have an impact on the implementation of eco-pedagogical strategies.

Factors like strong oral language and decision-making skills play a crucial role (Tan & Chapman, 2016). Addressing these individual differences is pivotal to fostering an ecologically conscious mindset.

2. **Facilitation:** Educators are central to the success of eco-pedagogical approaches. Hence, practitioners play a crucial role as facilitators in fostering successful learning experiences. Educators well-versed in both playful pedagogies and ecological principles can guide learners effectively in their exploration and understanding the interconnectedness of ecological systems through play (Keeley & Benton-Short, 2020). Effective facilitation involves practitioners comprehending and employing essential strategies, understanding their learners, scaffolding learning experiences, adjusting their approach to meet individual needs, and assuming the roles of mentors or guides. This requires a profound understanding of eco-pedagogical methodologies and sufficient subject matter knowledge to guide investigations. Consequently, educators must embrace creativity and innovation in delivering services and simplifying complex concepts for their learners. Auziņa (2018) defined ECD educators as individuals who serve as role models within the framework of today's globalised context.
3. **Design:** Guided by eco-pedagogical awareness, educators design activities leveraging learners' experiences, knowledge, and learning needs. These activities incorporate long and short-term goals, and are evidence-based, well-planned, and structured. The design includes a combination of facilitation types that foster higher-order thinking and skills in an ecological context (Danniels & Pyle, 2022), thus ensuring that ecological principles are seamlessly integrated into the fabric of learning experiences.
4. **Learning Outcomes:** Effective eco-pedagogical methodologies prioritise depth over breadth, involving multidimensional and integrated assessments. This flexibility accommodates the dynamic and interconnected nature of ecological concepts (Schwartz et al., 2009), encouraging a comprehensive understanding of ecological systems and fostering environmentally responsible attitudes and behaviours.
5. **School, System, and Community Support:** The success of eco-pedagogical methodologies relies on supportive leadership and a whole-school approach (Tan & Chapman, 2016). This involves leadership backing, comprehensive planning, well-thought-out scheduling, adequate time allocation, provision of physical space, and availability of resources. Collaborative engagement with the community is crucial for success, and when parents participate actively and share beliefs aligned with eco-pedagogical approaches, the likelihood of success increases (Jay & Knaus, 2018). This emphasises the importance of a broader community understanding and endorsement of eco-pedagogical principles.

Nature-Inspired Play, Ecological Storytelling, Sustainable Art and Craft, Ecological Problem-Solving, Outdoor Exploration, and Community Engagement, along with the incorporation of Eco-friendly Practices, serve as essential tools in implementing eco-pedagogical methodologies (Fajar & Agustina, 2019). By seamlessly integrating these aspects, educators create learning environments that not only promote ecological awareness and understanding but also contribute to the development of environmentally responsible citizens. By infusing eco-pedagogical awareness into play-based pedagogy, educators can create a learning

environment that not only nurtures the holistic development of the learners but also cultivates a sense of environmental stewardship and responsibility from an early age.

Recommendations

In response to the identified gaps, this study proposes the following conceptual recommendations for the South African ECD sector.

- **From Resource-Dependence to Eco-Centric Imagination:** Policy should prioritise the conceptual reframing of what are known as play materials. Instead of advocating for expensive synthetic resources, educators, school proprietors, managers, and owners should be trained to recognise the pedagogical affordances of the natural environment, and how learners' interaction with the environment constitutes an asset in the school environment in educating little children.
- **Integrating "Indigenous Generativity" into Training:** There is a need for a conceptual integration of African indigenous environmental knowledge in Southern African Development Community-endorsed educators' training. This moves the discourse from what we might call a Western gardener model to a Communal Steward one.
- **Eco-Pedagogy as a Rights-Based Framework:** We further recommend that the Department of Basic Education conceptually align the 'Right to Play' with the 'Right to a Healthy Environment' (Section 24 of the South African Constitution). This frames eco-pedagogy as a fundamental child right rather than an optional curricular luxury.

Conclusion

This reflection began under the shade of a willow tree, rooted in the indigenous environmental wisdom passed down through generations. What the first author thinks of as her grandmother's vegetable garden pedagogy was not a formal curriculum, but it was a profound ecological praxis that integrated play, care, and sustainability long before these terms entered the academic lexicon. In this article we have argued that the current South African ECD sector stands at a critical crossroads since numerous roadside (private) schools spring up yearly around the cities, suburbs, and townships. While the shift of ECD to the DBE offers a structural opportunity for reform, the real transformation must be conceptual and ontological. By synthesising Freirean critical pedagogy with modern eco-pedagogical principles, we affirm that play is the most powerful vehicle for early childhood education if we are to navigate and challenge the ecological crises of our time. This requires ECD educators to move beyond being mere supervisors of what we think of as toys toward becoming eco-pedagogical activists—intellectuals who recognise that learners' relationship with seedlings, animal rearing, planting of wool, cocoa, coffee, and other essential crops is as vital to their education as is their grasp of literacy and numeracy. Finally, encouraging eco-pedagogical awareness is not a matter of procuring more resources or upgrading dilapidated facilities, although these remain important; the supervision of ECD schools, as well as formal inspection, should highlight outdoor play facilities and space. It is about a fundamental shift in perceiving the environment as not just a resource to be exploited, but as a classroom to be inhabited. For South African early childhood

education, particularly for those children in marginalised communities, reclaiming the right to play in nature is a matter of ecological justice. Moving toward 2030, developing nations (South Africa included) must ensure that the gardener in the classroom is equipped to nurture not just the flowers of today, but the stewards of tomorrow's Earth.

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