

INNOVATIVE PEDAGOGIES

FOR CULTURALLY RESPONSIVE ENVIRONMENTAL EDUCATION: FROM UNHU/UBUNTU TO ECO-HUMOUR

PEDAGOGÍAS INNOVADORAS PARA UNA EDUCACIÓN MEDIOAMBIENTAL CULTURALMENTE RECEPTIVA: DEL UNHU/UBUNTU AL ECO-HUMOR

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ABSTRACT

This study examines innovative pedagogical approaches for culturally responsive environmental education focusing on the integration of African philosophical and cultural frameworks. Central to this exploration is the Unhu/Uubuntu philosophy, which emphasises interconnectedness, communal values and respect for nature, promoting a culturally grounded foundation for environmental education. The study introduces eco-humour as an emerging pedagogical tool, pointing its potential to engage students, foster critical reflection and enhance environmental citizenship. Additionally, it examines the integration of sustainable lifestyle education within secondary school curricula, advocating for experiential, contextually relevant and culturally embedded learning strategies. The discussion critically engages with teachers' perspectives on culturally responsive education, outlining both the challenges and opportunities associated with implementing these approaches. Furthermore, the study explores how indigenous pedagogies can be effectively integrated with Western educational frameworks to create a holistic and inclusive environmental education paradigm. Through the advocacy of these innovative pedagogical strategies, this study focuses on how culturally responsive teaching can enhance environmental awareness, sustainability practices and the development of eco-conscious global citizens.

Keywords: Innovative pedagogies, Culture, Environmental education, Ubuntu, Eco-humour, Indigenous knowledge systems.

RESUMEN

Este estudio examina enfoques pedagógicos innovadores para una educación ambiental culturalmente receptiva, centrándose en la integración de los marcos filosóficos y culturales africanos. La filosofía Unhu/Uubuntu es central en esta exploración, la cual enfatiza la interconexión, los valores comunitarios y el respeto por la naturaleza, promoviendo una base culturalmente arraigada para la educación ambiental. El estudio presenta el eco-humor como una herramienta pedagógica emergente, destacando su potencial para involucrar al alumnado, fomentar la reflexión crítica y fortalecer la percepción ciudadana hacia el medioambiente. Además, examina la integración de la educación para un estilo de vida sostenible en los currículos de secundaria, abogando por estrategias de aprendizaje experienciales, contextualmente relevantes y culturalmente integradas. El debate aborda críticamente las perspectivas del profesorado sobre la educación culturalmente receptiva, destacando tanto los desafíos como las oportunidades asociadas con la implementación de estos enfoques. Asimismo, el estudio explora cómo las pedagogías indígenas pueden integrarse eficazmente con los marcos educativos occidentales para crear un paradigma de educación medioambiental holístico e inclusivo.

Mediante la promoción de estas estrategias pedagógicas innovadoras, este estudio se centra en cómo la enseñanza culturalmente receptiva puede mejorar la conciencia ambiental, las prácticas de sostenibilidad y el desarrollo de ciudadanos globales con conciencia ecológica.

Palabras clave: Pedagogías innovadoras, Cultura, Educación ambiental, Ubuntu, Ecohumor, Sistemas de conocimiento indígenas.

INTRODUCTION

As the global community struggles with environmental degradation and climate change, the role of education in promoting environmental stewardship has become increasingly critical. In various educational environments, it is important to employ culturally responsive pedagogies that align with students' cultural backgrounds and personal experiences for effective facilitation of teaching and learning. Culturally responsive pedagogy is described as a student-centred approach to teaching that includes cultural references and recognises the importance of students' cultural backgrounds and experiences in all aspects of learning (Ladson-Billings, 1995). Villegas and Lucas (2007) noted that the approach is meant to promote engagement, enrichment and achievement of all students by embracing a wealth of diversity, identifying and nurturing students' cultural strengths, and validating students' lived experiences and their place in the world. In corroboration, Taneja and Gupta (2015) stated that culturally responsive pedagogy is characterised by teachers who are committed to cultural competence, establishing high expectations, and positioning themselves as both facilitators and learners.

This study examines innovative pedagogical strategies and practices for culturally responsive environmental education with a focus on integrating African philosophical and cultural aspects. The core focus of this exploration is the unhu/ubuntu philosophy, which emphasises interconnectedness, communal values and respect for all forms of life. Ubuntu is commonly translated as "humanity towards others" or "I am because we are" (Tutu, 1999). It emphasises the interconnectedness and interdependence of people in a community (Shabalala and Gumbo, 2024). Shabalala and Gumbo (2024) further stated that ubuntu philosophy advances the ideals of *kgets'i ya tsie e kgonwa ke go tshwaraganelwa* and *letsema* (work is easier when people work together and social corporate). The philosophy of ubuntu is deeply rooted in African traditional beliefs and values, and it has been expressed in various ways by African cultures (Shabalala and Gumbo, 2024). This indigenous paradigm provides a profound foundation for

teaching environmental ethics, advocating a perspective that aligns with sustainable living.

Additionally, this paper presents eco-humour as an innovative pedagogical strategy, exploring its potential to captivate students, make learning enjoyable, and foster a deeper connection to environmental issues. Eco-humour, as defined, seeks to move beyond human concerns (in its restricted, egotistic sense) and bring to the fore issues related to the Earth's ecosystem or the "ecosphere" (Boykoff and Osnes, 2019). Therefore, eco-humour can be understood as a form of humour that goes beyond the scope of human experiences (Heidari-Shahreza, 2023). Eco-humour encompasses several forms such as eco-jokes, eco-cartoons, and eco-comedies, and relies on playful communication as a serious means of expression (Heidari-Shahreza, 2023). According to Heidari-Shahreza (2023), eco-humour effectively utilises many means to emphasise the importance of sustainable development for individuals across different areas of life. Hence, it has the potential to greatly enhance engagement and accountability towards sustainable solutions. Thus, eco-humour may effectively expose the consequences of environmental policies, such as the ripple effects or chain reactions that can occur. It highlights how local actions can have far-reaching and severe impacts (Heidari-Shahreza, 2023).

The study further explores the practical implementation of sustainable lifestyle education, highlighting environmental solutions that align with students' cultural backgrounds. A sustainable lifestyle refers to a set of habits and behaviours that are deeply ingrained in a society and supported by institutions, norms and infrastructures (Akenji and Chen, 2016). Akenji and Cheng (2016) further state that the goal of this lifestyle is to reduce the consumption of natural resources and waste generation, while promoting fairness and prosperity for everyone. Significantly, this lifestyle requires higher levels of education. Teachers' perspectives on culturally responsive environmental education provide information into the implementation and influence of these approaches. Furthermore, the study explores the integration of traditional indigenous knowledges with Western education systems, aiming to create a balanced and holistic educational experience. According to Photo and McKnight (2024), indigenous knowledge systems consist of the different interaction of specific knowledge, skills, customs and attitudes inherent to a given culture or society. One important aspect of this concept is the transfer of knowledge from older to younger members of the community over multiple generations (Photo and McKnight, 2024). This exchange occurs through direct interaction with the environment, and it is encouraged by close intergenerational relationships (Photo & McKnight,

2024). Through these innovative approaches, this study demonstrates how culturally responsive teaching may enhance environmental awareness and cultivate a sense of responsibility among students, ultimately contributing to sustainable communities and a healthier planet.

Environmental education is a multifaceted effort that seeks to enhance and expand knowledge and understanding of natural, physical and human environments. It involves using interdisciplinary approaches to promote public understanding and support for nature and environmental conservation (Masalimova et al., 2023). Environmental education, despite its wide range of topics, has frequently been shaped by Western perspectives, neglecting the wealth of indigenous knowledge systems (IKS) profoundly rooted in African communities. The convergence of indigenous knowledge and environmental education signifies a paradigm shift towards promoting sustainability and cultural empowerment in indigenous communities across the globe. Grounded in the context of indigenous lands and traditions, this integration seeks to reclaim indigenous ways of knowing and learning while addressing pressing environmental challenges (Abercrombie and Chambers (2021). As mentioned in the preceding paragraphs, the objectives of this study are to explore innovative pedagogical approaches for culturally responsive environmental education, focusing on the integration of African philosophical frameworks such as Unhu/Ubuntu and emerging tools such as eco-humour. The research seeks to answer the following questions; (1) How can Unhu/Ubuntu philosophy be effectively integrated into environmental education? (2) What role can eco-humour play in enhancing environmental awareness and sustainability practices among students? (3) How can sustainable lifestyle education be embedded within secondary school curricula to promote culturally relevant learning strategies? Through the exploration of these frameworks such as unhu/ubuntu, and novel tools such as eco-humour and sustainable lifestyle education, the study aims to demonstrate how culturally responsive teaching can enhance environmental awareness and promote sustainable living.

Unhu/Ubuntu Framework for Environmental Ethics Education

Implementing environmental ethics education requires pedagogical approaches that are deeply rooted in local heritage and cultural traditions. Taneja and Gupta (2015) have defined environmental ethics as a sub-field of philosophy which focuses on environmental values that include cultural attitudes, practices and approaches to securing and supporting biodiversity and environmental frameworks. Integrating Afrophilic philosophies such as unhu/ubuntu into wildlife conservation efforts can foster

a profound appreciation and respect for environmental ethics within communities. The concept of unhu/ubuntu plays an important role in shaping environmental ethics education. Hahambu (2012) argues that education should be regarded as an existential coordinate of the human experience, a perspective that is reflected through unhu/ubuntu philosophy. This philosophy embodies the existential experiences of indigenous people and redefines the objectives of environmental ethics education within this context. According to Fickel and Abbiss (2019), the use of Shona novels in Zimbabwean secondary schools to teach unhu/ubuntu demonstrates how cultural values may be maintained in various aspects of life, equipping generations with essential skills, ideals and truths for societal success. Unlike more traditional forms in Western science, which have created an abstracted nature-culture dichotomy by failing to connect with context-based heritage-knowledges and practices, unhu/ubuntu has a unique perspective in shaping environmental ethics education as a situated practice.

Unhu/ubuntu's focus on peace, harmony and cultural values has traditionally contributed to the thriving of African societies (Shabalala & Gumbo, 2024). This traditional education system is crucial for the ethical and moral formation of youths, particularly in Zimbabwe's secondary schools. Furthermore, a thorough consideration of ubuntu involves analysing its portrayal of a collective effort towards reclaiming humanity through the process of decolonisation and activism, as observed within the context of post-apartheid South Africa. Establishing accurate environmental ethics is key to successful environmental education. This entails cultivating proactive environmental ethics or environmental morality, which refers to an individual's behavioural standards regarding the environment. Similarly, reinforcing the promotion of environmental ethics is critical for environmental education.

In addition, the concept of unhu/ubuntu, which emphasises interconnection, is consistent with a broader principle of mutual care beyond the self. This principle supports the development of ethical behaviour, sustainability, and a spiritual connection to the environment, all of which are essential for environmental management and practicing business ethics. By integrating unhu/ubuntu philosophy into environmental ethics education, teachers can nurture a holistic and culturally resonant approach to environmental stewardship. This integration not only strengthens traditional values, but also corresponds with global efforts to promote sustainability and ethical environmental conduct. In integrating the concept of unhu/ubuntu into environmental ethics education, we can draw on several key knowledges from existing literature on business ethics,

virtue ethics and environmental education. The study conducted by Giorgi and Nielsen (2020) highlights the importance of ethical identity in shaping business ethics, especially during times of controversy. According to Giorgi and Nielsen (2020), in large-scale social settings involving crisis, the framing of business ethics is more likely to be effective if the person doing the framing has an ethics identity that aligns with the audience's ethics narrative. This means that the audience is more likely to connect with and be influenced by the message when they perceive the framer's ethical values to be compatible with their own. This perspective can be applied in the unhu/ubuntu framework by emphasising the moral sense of self based on the interconnectedness of the community and the environment, which is central to the ubuntu philosophy.

Ebersole (2015) emphasises the lack of attention on students with special needs in environmental ethics research, noting, research on students with special needs and their relationship with the environment are neglected. This observation points the need for inclusive environmental education that is in line with the ubuntu philosophy of inclusivity and respect for all individuals, regardless of their abilities. Al-Naki (2004) discusses the doubt expressed by radical educationists against current educational institutions and procedures. He suggests that the adoption of a new environmental ethic poses a significant educational obstacle (Al-Naki, 2004, p. 135). This challenge can be addressed through the integration of ubuntu principles, which prioritise holistic education and interconnectedness, into environmental ethics education. Carr (2004, p. 229) contends that character development in environmental ethics involves the fostering of positive interpersonal connections and the inhibition of behaviours that are detrimental to society, which is central to Aristotelian virtue ethics. Ubuntu, with its focus on communal relationships and mutual care, complements this approach by promoting a sense of accountability towards both human and environmental communities.

The ontological frameworks within which African ubuntu interactions occur, emphasising the importance of introspection and accountability in promoting ethical behaviour. This perspective can enrich environmental ethics education by encouraging students to critically reflect on their actions and their influence on the environment. Haws (2009) discusses Desmond Tutu's theology of ubuntu, which emphasises forgiveness and interconnectedness as foundational to a just society. This theological underpinning can be integrated into environmental ethics education to promote reconciliation and the adoption of sustainable practices that honour both human and environmental well-being. The application of ubuntu in various professional

fields, including environmental science, which promotes respect and harmony with nature. Integrating these cultural and ethical dimensions into environmental education can help promote respect for nature and communal responsibility among students. By weaving these observations into the unhu/ubuntu framework, environmental ethics education can be improved to foster a sense of responsibility, inclusivity and interdependence, which are important for sustainable living and ethical environmental stewardship.

Eco-Humour: A Novel Pedagogical Tool for Environmental Education

Humour, particularly eco-humour, emerges as a promising pedagogical instrument for improving environmental education across different cultural contexts (Heidari-Shahreza, 2023). Integrating humour into environmental discourse, teachers can effectively engage students, promoting a more profound understanding and connection with environmental issues. According to Heidari-Shahreza (2023), eco-humour can strengthen and facilitate environmental education and communication, supporting the broader principle of interdisciplinarity to address societal issues (Cook et al., 2022). The integration of eco-humour into educational curricula is advocated as a method to enhance environmental learning. This approach combines creative humour with scientific content about climate change and other environmental issues. This approach requires collaboration between humour scholars and environmental education researchers to explore effective instructional designs and curriculum approaches. Furthermore, the inclusion of eco-humour aligns with the philosophy of eco-schools, which aim to develop a whole-school approach to environmental education. Eco-schools provide resources and infrastructure to promote sustainability within their communities, which include students, teachers and parents. This approach emphasises the importance of integrating pedagogical and environmentally sound sustainable design projects.

In addition to its application in environmental education, humour has been acknowledged as a potent pedagogical technique across various disciplines. In language classrooms, humour has been shown to reduce affective barriers such as stress and anxiety, creating a more positive and comfortable learning environment (Navarro et al., 2022). Similarly, in writing centre consultations, understanding different types of humour is important for ensuring positive psychological and physiological benefits. In the context of mathematics education, humour plays a key role in teachers' discourse, helping them negotiate and manage their teaching methods. Despite these documented benefits, humour is often underutilised as a pedagogical

technique due to fears of laughter and uncontrollable behaviour in the classroom. The use of humour as a pedagogical technique is further highlighted in digital eco-learning environments, where it can improve students' critical thinking skills and pedagogical competencies.

Studies on humour-integrated language learning (HILL) have demonstrated that humour can serve as a "safe house" for language learners to experiment with different identities, have their voices heard, and engage in pedagogical activities (Heidari-Shahreza, 2023). The strategic use of eco-humour in environmental education not only improves learner engagement, but also promotes an interdisciplinary approach to solving environmental issues, making it a valuable resource in the teacher's arsenal (Heidari-Shahreza, 2023). Utilising eco-humour in environmental education can serve as a creative method to actively involve students and cultivate a deeper understanding of environmental issues. By integrating humour into the curriculum, teachers can improve students' willingness to learn, reduce anxiety and increase overall involvement. Eco-humour increases students' attention and interest, facilitating faster learning and better retention of new information. In environmental education, where complex and sometimes alarming topics are discussed, humour can serve as a strategy to reduce stress and make learning more enjoyable and memorable.

Integrating eco-humour into place-based education, which focuses on learning within the local environment, might be advantageous. By connecting humour to local environmental issues, teachers have the ability to augment students' sense of connection to their community and environment. This approach not only makes the learning process more engaging, but also helps students develop a deeper understanding of local environmental dynamics and their contribution in promoting sustainability. Employing humour strategically in education can optimise pedagogical results by enhancing the level of engagement and relevance in the learning process (Heidari-Shahreza, 2023). In the context of environmental education, humour can be employed to explain multi-dimensional environmental concepts, making them more accessible and less intimidating to students. This aligns with the broader objective of promoting environmental literacy and encouraging sustainable practices among students.

Eco-humour in practice includes eco-comics, humorous environmental videos, and playful classroom activities that focuses on environmental issues in a fun and engaging manner. These strategies have been found to both teach and entertain, making the learning experience more enjoyable and impactful. These strategies can be effective in overcoming resistance to learning about challenging

topics such as climate change and environmental degradation. Humour, when used appropriately, may be a powerful instrument. However, it is important to employ it appropriately to prevent negative effects on student's feelings and self-worth. Inappropriate humour has the potential to interrupt the learning process and negatively impact the emotional well-being of students. Therefore, teachers must carefully consider the type of humour they use, ensuring it is inclusive, respectful and relevant to the content being taught in the classroom.

Eco-Humour and Environmental Citizenship

Integrating humour into environmental education can additionally support the development of environmental citizenship. According to Photo and McKnight (2024), when learning is made pleasant, students are more likely to actively participate in and internalise environmental values and practices. Humour has the potential to foster a positive emotional connection to environmental issues, motivating students to participate in eco-activities and adopt sustainable behaviours. Eco-humour serves as an innovative and effective pedagogical technique for environmental education. Humour can improve students' understanding and retention of environmental concepts, reduce anxiety and foster a positive connection to environmental issues. When used appropriately, eco-humour can significantly contribute to the development of environmental literacy and the promotion of sustainable practices, ultimately supporting the broader goals of environmental education and sustainability.

Eco-humour, an approach that integrates humour into environmental education, functions as an innovative method for enhancing engagement and understanding of environmental issues. Eco-humour has the potential to promote stronger bonds between students and environmental themes by making them more accessible and memorable. Locke (2022) suggests integrating eco-literate teaching methods in music education, promoting approaches that align with eco-literacy to benefit music teachers in 21st century Aotearoa, New Zealand. This perspective emphasises the possibility of integrating environmental themes into different academic disciplines, including the use of humour as a teaching method. According to Ross et al. (2019), organisations are required to practically adopt and implement eco-humour designs internally. Despite the existence of many techniques and methodologies, there is still a gap between knowledge and practice, which stress a need for more engaging and accessible approaches, such as eco-humour, to bridge this gap and promote eco-design strategies.

Simanovska et al. (2009) also call for the development of practical instruments to promote eco-design in the industry. Eco-humour, with its ability to simplify complicated ideas and make them more relatable, could be an effective means to achieve this goal. In the realm of science education, Gilmanshina et al. (2018) explore the development of environmental thinking and competence among adolescents. Integrating humour into environmental education has the potential to improve educational outcomes by increasing the level of engagement and facilitating understanding of the topic. Furthermore, Gilmanshina et al. (2018) discusses the need for professional development that supports immersive learning experiences within local environments. Eco-humour can be an effective method in this context, helping teachers create memorable and impactful outdoor educational experiences. Simanovska et al. (2009) emphasise the importance of contextualised teaching materials in environmental education. The use of humour in these materials has the potential to greatly improve their efficacy and appeal, especially among younger audiences.

The integration of humour into environmental education is not without its challenges. Simanovska et al. (2009) address the challenge of organising and selecting pedagogical methods that effectively convey environmental and social aspects. Eco-humour, with its ability to engage and entertain, can facilitate the articulation of these complex concepts in a manner that is easy to understand and enjoyable. Environmental education continues to face challenges with regard to the integration of postmodernist/poststructuralist perspectives. Haws (2009) emphasises the importance of integrating postmodernist/poststructuralist ethics into environmental education. This involves recognising the significance of eco-ethics in developing theories about environmental values and eco-political agency. The integration of humour, digital technology, eco-labelling, eco-design and eco-innovation in environmental education advocates for the multidisciplinary nature of pedagogical methods that aim to promote environmental awareness and sustainable practices.

Exploring Sustainable Lifestyle Education in School Curricula

The integration of sustainable lifestyle education into secondary school curricula offers a pathway to promoting sustainable behaviour change and environmental literacy among youth. Drawing on various educational models, this approach emphasises the role of education in shaping sustainable lifestyles and promoting community resilience. As highlighted by Abercrombie and Chambers (2021), in the context of Scottish secondary schools, there has been a gradual integration of film education into

the national curriculum. Teachers are taking initiatives to embed film education into both curricular and extra-curricular activities, thereby enriching students' learning experiences and cultural understanding. This trend reflects a broader shift towards recognising the value of interdisciplinary education and real-world application of knowledge. In Bangladesh, efforts to integrate environment and disaster education into the secondary school curriculum have been documented. Despite challenges and limited evidence, the government has taken steps to raise awareness among students about environmental hazards and disaster management through formal educational programmes. Similar efforts are observed in other contexts, such as water education, where there is a growing recognition of the need to empower students with practical knowledge and skills to address local and global water challenges.

Furthermore, peace education has been integrated into secondary school curricula in Mizoram, India, through a combination of formal teaching and co-curricular activities. This approach stresses the importance of cultivating a culture of peace and conflict resolution among students, contributing to social cohesion and sustainable development. In Switzerland, the implementation of various teaching methods has been adopted to change geography education in secondary schools. Although the national curriculum does not specifically prioritise student-centred approaches, several schools have used innovative teaching methods to improve student involvement and academic achievements. These examples demonstrate how secondary school curricula are changing worldwide, with teachers and policymakers recognising the importance of integrating interdisciplinary and experiential learning opportunities to address pressing societal and environmental challenges. Environmental education plays a critical role in promoting sustainable development by increasing awareness and equipping students with the knowledge to implement sustainable practices. However, the effectiveness of environmental education is contingent upon community engagement and the availability of suitable teaching materials.

Teachers' Perspectives on Culturally Responsive Environmental Education

Culturally responsive environmental education recognises the importance of indigenous perspectives and knowledge systems in tackling environmental problems. By embracing a wide range of languages and cultures, teachers can create inclusive learning environments and enable students to take on the responsibility of caring for the environment. Photo and McKnight (2024) argues that overemphasis on teachers' knowledge in certain

subjects often fails to acknowledge the complexity and the diversity nature of multicultural educational environments. Historically, teacher education has been primarily influenced by Western, white, middle-class perspectives, resulting in the exclusion of non-Western and culturally heterogeneous perspectives in teacher preparation programmes (Photo & McKnight, 2024). The absence of proper preparation leads to teachers who are ill-equipped to cater to the needs of culturally diverse students, thereby perpetuating inequities in education (Photo & McKnight, 2024).

Ebersole et al. (2015) contend that teacher education programmes often provide incomplete and shallow examinations of diversity. Research has indicated that such programmes have inconsistent effects on future teachers' perceptions of diversity and many teachers might resist the need for culturally responsive teaching (Ebersole et al., 2015). Although there is a major focus on multicultural education, helping teachers become culturally responsive remains a significant challenge (Ebersole et al., 2015). Shabalala and Gumbo (2024) note the interconnectedness between cultural diversity and environmental sustainability. The authors assert that integrating both pedagogical strands into one curriculum provides a more holistic education, preventing division and empowering students to become global eco-citizens (Shabalala and Gumbo, 2024). Navarro et al. (2022) stress that efforts to recruit more teachers of colour must critically examine how their identities are affirmed and integrated into teacher education programmes. Presently, existing programmes tend to favour the dominant cultural norms associated with whiteness and impede attempts to incorporate critical race perspectives (Navarro et al., 2022). Thus, integrating culturally responsive teaching remains challenging due to these structural biases (Navarro et al., 2022). Effective schooling must be culturally responsive to prepare students for the realities of a distinct society. Teacher education programmes should influence pre-service teachers' understanding of cultural diversity to create a more inclusive educational environment.

Heidari-Shahreza (2023) explores how teachers' participation in culturally responsive teaching is grounded in their perspectives as teachers in urban high-needs schools. The focus is on the experiences of those who work directly with different student populations and provides insights into the implementation of culturally responsive teaching practices (Heidari-Shahreza, 2023). Shabalala and Gumbo (2024) advocates for understanding diversity and constructing a foundation of knowledge for teachers to acknowledge the roles of race, culture, language, gender and class in society. This knowledge may enable teachers

to modify their strategies to better support minority students' academic success (Shabalala and Gumbo, 2024). Shabalala and Gumbo (2024) discusses the need for teachers to be culturally competent, understanding culture in education and using students' cultural knowledge as a basis for learning. Socio-politically conscious teachers should also be aware of the larger socio-political context and promote critical cultural competence among their students (Shabalala and Gumbo, 2024). Akenji and Chen (2016) identify that a lack of understanding and skills regarding culturally relevant education leads to misinterpretations and inadequate teaching practices. A thorough understanding is important for successful culturally responsive teaching (Akenji and Chen, 2015).

Ebersole et al. (2015) showcase the importance of faculty responsiveness to the unique needs of culturally and linguistically diverse (CLD) pre-service teachers. Understanding the perspectives, beliefs and experiences of CLD candidates is important for their success in higher education (Ebersole et al., 2015). Taneja and Gupta (2015) emphasise the fundamental role of culturally responsive teaching in inclusive education. Adapting the curriculum to be culturally relevant and demonstrating cross-cultural communication skills are important elements of effective teaching (Taneja and Gupta, 2015). Fickel and Abbiss (2019) contend that the definition of "good practice" in teacher education should be established in accordance with distinct social, political, and cultural circumstances. Analysing teacher education programmes that are placed within certain contexts can provide perspectives into the different methods that teachers use to teach culturally responsive pedagogy (Fickel and Abbiss, 2019). Hahambu et al. (2012) support the use of culturally specific pedagogies in elementary education reflected in curriculum and teacher training policy documents. A culturally sensitive perspective promotes responsive teaching approaches for diverse children (Hahambu et al., 2012).

Giorgi and Nielsen (2020) explain the process by which pre-service special education teachers were able to develop their cultural responsiveness through forming friendships with Old Order Mennonite teachers. For understanding cultural relevance, it was imperative to engage in immersive learning experiences and actively participate (Giorgi and Nielsen, 2020). According to Tajpuria (2015), culturally responsive teachers analyse social, educational and other inequities from a political perspective. Understanding the dynamics of power and privilege is essential for addressing systemic inequalities (Tajpuria, 2015). Teachers have an important role to play in promoting culturally sensitive environmental education. Teachers must adeptly negotiate the growing ethnic diversity present in classrooms and

ensure that their teaching approaches are both inclusive and successful. Ross et al. (2019) argue that it is crucial to include culturally responsive teaching in teacher preparation programmes for students of colour with disabilities. This is because these students are often unfairly placed in special education and tend to have lower academic performance. This demonstrates the imperative need for teacher education programmes to appropriately equip teachers in supporting a wide range of students.

Culturally responsive teaching aims to cultivate an equitable education for all students, recognising the importance of different cultural backgrounds and perspectives in the learning process. This approach involves using a variety of teaching materials and theories from different cultures and integrating students' cultural experiences into the curriculum. Cook et al. (2022) emphasise that as classrooms become more diverse, teachers must understand and respond to this diversity to support student achievement effectively. Moreover, the preparation of culturally responsive teachers involves equipping them with the necessary skills, increasing their knowledge of cultures and transforming their attitudes towards multicultural education (Boykoff & Osnes, 2019). This preparation also includes assessing teachers' beliefs in their competence to execute culturally responsive practices, emphasising the importance of self-efficacy in teaching different student populations.

Teacher education programmes must address the challenge of preparing prospective teachers for culturally responsive teaching due to globalisation and increasing cultural diversity in schools. The response of teachers to culturally distinct practices can significantly influence the self-esteem and academic success of students from various cultural backgrounds. Masalimova et al. (2023) argue that passion, dedication and commitment are crucial in implementing culturally responsive teaching, and that teacher education must provide opportunities for students to explore their own beliefs and understand the varied nature of today's classrooms. In addition, meaningful direct contact with people from different backgrounds and opportunities for self-reflection have been shown to improve teachers' attitudes and awareness. This experience is essential for teachers to become effective in teaching a broad student body. Cook et al. (2022) add that teachers must also develop cultural competency to acknowledge and negotiate differences and similarities among students, thereby fostering an inclusive classroom environment.

Ross et al. (2019) mention that to support teachers in this process, educational programmes need to modify the curriculum to include values of equality and mutual respect, and to provide resources that connect students'

cultural experiences with subject content. In the field of environmental education, the readiness and confidence of teachers have a substantial impact on their capacity to teach effectively. The integration of culturally responsive teaching in environmental education helps to enhance students' engagement and understanding of environmental issues. For instance, teacher education programmes should provide guidance to students to implement culturally responsive practices through self-reflective activities and different field experiences. Such preparation helps future teachers to support and sustain cultural and linguistic diversity, which is critical for improving educational opportunities and academic performance among different student populations. Teachers' perspectives on culturally responsive environmental education demonstrates the need for comprehensive training and support in teacher education programmes. Through the promotion of cultural competence and inclusivity, teachers can better address the needs of their students and create more equitable and effective learning environments.

Indigenous Pedagogies: Bridging Traditional and Western Education Systems

Integrating indigenous pedagogies into formal education institutions is important in the process of decolonising knowledge production and dissemination. Through the acknowledgement of indigenous ways of knowing and learning, teachers may develop more inclusive and culturally responsive educational practices. Gilmanshina et al. (2018) stress the vision of indigenous education sovereignty in northwestern Ontario, specifically focusing on the importance of equitable funding, indigenous-led teaching in traditional practices, and community-based accountability. These teachers' visions align with culturally sustaining and revitalising pedagogies, which promote indigenous educational sovereignty by integrating indigenous pedagogical practices (Gilmanshina et al., 2018). The education systems frequently lack inclusivity as a result of their intense Western-centric perspectives. According to Simonovska et al. (2009), the Australian education system, which is primarily led by white Anglo-Celtic teachers, promotes linguistic imperialism and does not incorporate indigenous ideas, thus lacking inclusivity. This emphasises the need for integrating indigenous pedagogies to create a more inclusive educational environment (Simonovska et al., 2009).

Indigenous pedagogies enable the reclaiming of traditional knowledge and practices, as evidenced by the experiences of young indigenous people engaged in circular migration and agriculture, who rely on the internalisation of knowledge fostered by indigenous pedagogies. This process enhances the ability to learn and adapt to new

tasks intuitively and efficiently. Land and water-based indigenous education programmes are expanding globally, providing meaningful opportunities for students to engage with traditional knowledge and practices. These programmes differ in their focus, with some prioritising the restoration of traditional knowledge and others addressing the consequences of colonisation and cultural violence. Such programmes demonstrate the integration of indigenous teaching methods that focus on specific locations, which are important for cultural and environmental sustainability.

The relationship between indigenous knowledge and formal education is multi-faceted. The authors further note that Western academic knowledge often dominates the study of Aboriginal society, affecting the way indigenous knowledge is integrated into formal education systems. Despite these challenges, indigenous knowledge significantly influences indigenous studies and education. Integrating indigenous pedagogies into Western education systems faces challenges, including doubts about the applicability of indigenous knowledge in a global context and the idealisation of traditional knowledge systems. However, efforts to build trans-systemic decolonial education through land-based and intercultural pedagogies demonstrate the potential for meaningful integration of indigenous knowledge. The integration of indigenous story-based pedagogy into early childhood education has been shown to enhance learning and social skills development. This approach establishes knowledge building in IKS, reinforcing the importance of cultural traditions and histories in education. Giorgi and Nielsen (2020) describe community-based learning programmes as those that emphasise the role of indigenous core values such as reciprocity in modern educational frameworks. These projects demonstrate how indigenous multimodal literacies can be effectively integrated into educational practices, promoting a holistic view of education (Giorgi and Nielsen, 2020).

Boykoff and Osnes (2019) outlines pedagogies for decolonisation that emphasise the significance of place-based education in promoting both social and environmental sustainability. These pedagogies aim to move education towards an inclusive approach that acknowledges and integrates IKS (Boykoff and Osnes, 2019). Eurocentric epistemology prevails in postsecondary education, often excluding non-Western values and belief systems. In this view, Photo and McKnight (2024) states that indigenous students encounter a dominant system that fails to acknowledge their cultures, languages and traditions as valid sources of knowledge. To effectively address this issue, it is important to include indigenous knowledges to create an educational environment that is both inclusive and representative (Photo and McKnight, 2024). The influence

of Western pedagogy on social work education in Nigeria demonstrates a transition from traditional kinship-centred care to institutional environments, emphasising the importance of integrating Western and indigenous pedagogies in professional education. Carr (2004) argue for a mutual relationship between indigenous and Western knowledge systems, emphasising the complimentary nature of these systems in education. This approach promotes the integration of indigenous knowledge in a way that respects its diversity and adaptability (Carr, 2004). Integrating indigenous pedagogies into formal education systems not only promotes inclusivity, but also enriches educational practices by acknowledging and valuing different ways of knowing and learning.

This integration is necessary for fostering a more equitable and culturally responsive educational environment. The integration of indigenous pedagogies with Western education systems offers both advantages and challenges. IKS provide unique contributions into sustainability and environmental management, which are essential for addressing global challenges. Nevertheless, the hierarchical nature of Western educational institutions often hinders the integration of alternative ways of knowing, since it requires those in positions of authority to embrace collaborative decision-making that is in line with pedagogies that oppose oppression. The field of nursing education serves as a prime example of this ongoing challenge. Indigenous students encounter multiple obstacles, such as racial discrimination, social isolation and a scarcity of mentors. To overcome these challenges, it is important to integrate traditional indigenous knowledge into the curriculum, which can help to create a more comprehensive and nurturing educational environment (Tanenja and Gupta, 2015).

When Western teaching methods are applied to literacy training in Chinese preschools, it becomes important to take into account socio-contextual aspects and cultural values that may differ greatly from those in Western education systems. This accentuates the broader challenge of harmonising indigenous and Western knowledge systems in formal education, as demonstrated by the attempts to incorporate African indigenous knowledge into Kenya's formal education system. In Canada, re-centring IKS in educational law, policy and curriculum is important for acknowledging indigenous self-determination and addressing the historical suppression of these systems (Akenji and Chen, 2016). Research approaches that integrate indigenous and Western sciences, such as traditional storytelling, illustrate the potential for these two knowledge systems to coexist and complement each other.

The Bothways philosophy in Australian indigenous education further illustrates the benefits of bicultural educational

approaches, emphasising the collaborative interaction between Western and indigenous pedagogies (Masalimova et al., 2023). Similarly, recognising IKS as valid methods of learning within formal education can enrich educational experiences and promote cultural preservation. Despite these efforts, indigenous knowledge often remains undervalued in formal education settings, particularly in science, technology, engineering, and mathematics (STEM) fields where Western science predominates. This marginalisation of indigenous knowledge not only hinders educational outcomes for indigenous students, but also sustains colonial legacies within the educational system. The integration of indigenous pedagogies with Western education systems requires a multifaceted approach that respects and values indigenous knowledge as an important component of a holistic education.

Recommendations

The study recommends that educational institutions should incorporate training modules on culturally responsive pedagogies, including the Unhu/Ubuntu philosophy and eco-humour, in teacher education programmes. This will equip teachers with the necessary skills to integrate these frameworks into their teaching practices. The study further recommends that national and regional education authorities should revise curricula to include indigenous knowledge systems and sustainable lifestyle education, ensuring that environmental education is both culturally relevant and contextually grounded. Another recommendation includes the creation of supportive frameworks by policymakers that encourage the integration of indigenous philosophies into educational policies. This includes funding for research and development of culturally responsive educational materials. Additionally, future studies should explore the long-term impacts of integrating Unhu/Ubuntu and eco-humour on students' environmental awareness and behaviour.

CONCLUSION

The study on innovative pedagogies for culturally responsive environmental education draws attention on the importance of integrating cultural and philosophical elements into teaching practices to enhance environmental awareness and sustainability among students. The unhu/ubuntu philosophy and eco-humour serve as effective pedagogical methods that make learning engaging and relevant to students' cultural backgrounds. Through the integration of these elements, teachers may have an opportunity to foster a deeper connection to environmental issues, promote sustainable practices, and create an inclusive and supportive learning environment. The exploration of this conceptual paper of sustainable lifestyle

education and the integration of IKS with Western education shed light on the potential for a more holistic and culturally responsive approach to environmental education. This approach not only enriches the educational experience, but also empowers students to take an active role in environmental stewardship. In addition, the study demonstrates that culturally responsive teaching methods can significantly contribute to building sustainable communities and a healthier planet.

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