

Education never stands still—it moves, adapts, and transform in response to new realities, while reshaping society in turn. This collection explores some forces defining learning today: digital tools, intercultural dialogue, artistic expression, and the call for ecological responsibility. At its core, education remains a space for negotiation and reinvention.

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PROCEEDINGS

02

Cultures, Practices, and Change

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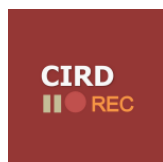
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Vol. 2

**Cultures,
Practices,
and Change**

Organizers and partners



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BIODIVERSITY AND INTERCULTURAL EDUCATION. REFLECTIONS FROM A WORKSHOP EXPERIENCE AT THE UNIVERSITY OF CATANIA

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Environmental education inherently promotes the recognition of diversity and interconnection, highlighting biodiversity as a vital value to respect and preserve. It emphasizes the importance of ecological balance, fostering awareness of the interrelationships that sustain natural systems. Simultaneously, it supports intercultural relationships by encouraging mutual support and understanding of diverse perspectives. Through this dual focus, environmental education links safeguarding the environment with intellectual growth and the preservation of cultural heritage. Biodiversity serves as a lens to understand the complex relationships between different phenomena, bridging environmental and intercultural education by prioritizing connections and systemic thinking. This connection is explored in a study of 250 students in the "Intercultural Pedagogy with Laboratory" course at the University of Catania. Through activities in the "Green Education Lab", students engaged with biodiversity via photography during visits to the Botanical Garden. The study's thematic analysis revealed strong links between ecological and cultural systems, demonstrating the potential of environmental education to foster systemic and intercultural understanding. This approach emphasizes human-nature connections and highlights environmental education as a pathway for cultivating awareness, resilience, and respect for diversity in both natural and cultural contexts.

Biodiversity, intercultural education, Green Education Lab, sustainability education

INTRODUCTION

Environmental education emphasizes the importance of biodiversity as a core value, highlighting the interdependence of natural systems. Similarly, intercultural education fosters respect for diversity and promotes mutual understanding. Together, these fields converge in emphasizing systemic thinking and relational methodologies (Bridgewater & Rotherham, 2019; Dozza, 2022; Keni, 2002). This study builds on this convergence, exploring how environmental education can act as a bridge for intercultural learning. By engaging with biodiversity, students can reflect on cultural diversity and resilience, fostering new perspectives on inclusivity and

coexistence. The study presented here is grounded in a practical exploration of these ideas.

1. ENVIRONMENTAL AND INTERCULTURAL EDUCATION: A SHARED PERSPECTIVE

Environmental education and intercultural education intersect in their shared emphasis on diversity, interconnection, and relational thinking. Biodiversity, as a cornerstone of environmental education, exemplifies the systemic relationships that sustain natural ecosystems, offering a powerful metaphor for human societies (Shiva, 1993). Bateson (2002) argued that biodiversity's interdependence reflects a natural balance where each element contributes uniquely to the adaptability of the whole. Similarly, intercultural education fosters an appreciation of cultural diversity as a source of societal strength and innovation, positioning relationships and mutual respect as essential components of coexistence (Persico, Guerra, & Galimberti, 2024). The concept of biocultural diversity deepens this connection, emphasizing the interrelationship between cultural and ecological diversity. Bridgewater and Rotherham (2019) highlighted how preserving biodiversity requires recognizing the value of cultural knowledge systems, especially those rooted in traditional practices.

Incorporating biodiversity into intercultural education fosters an ecological mindset that prioritizes relationships and cooperation (Catarci, 2021). Tomarchio, D'Aprile, and La Rosa (2018) explored this integration through experiential learning, showing how activities that combine ecological and cultural awareness enhance students' understanding of interdependence. Similarly, Sandoval Rivera and Mendoza-Zuany (2017) emphasized the transformative potential of intercultural education initiatives that incorporate sustainability, demonstrating how such approaches empower communities to address global challenges.

Experiential learning has emerged as a critical method for integrating environmental and intercultural education. According to Kolb (1984), experiential learning engages students directly with their environment, fostering deep understanding through reflection and action. Tilbury and Henderson (2003) underscored that experiential learning not only deepens ecological knowledge but also cultivates empathy and inclusivity, essential traits for intercultural competence. These methods align with Lenzi et al.'s (2023) findings that participatory activities, such as those in botanical gardens, provide students with tangible examples of interdependence and diversity.

2. METHODOLOGY

This qualitative study aimed to explore the relationship between biodiversity and intercultural education through experiential learning. The research was conducted during the 2022/2023 academic year with 250 students enrolled in the "Intercultural Pedagogy with Laboratory" course at the University of Catania. Participants engaged in a range of educational activities centered on plant biodiversity during a guided visit to the Botanical Garden of Catania. These activities were designed to

foster a deeper understanding of the connections between ecological and cultural systems.

The Botanical Garden (<http://ortobotanico.unict.it/>), a living repository of global plant species, served as the primary setting for the study. Its diverse flora provided students with tangible examples of ecological interdependence, offering an immersive context to explore the symbolic and educational dimensions of biodiversity. Experiential learning activities were modeled on Kolb's (1984) theory, emphasizing concrete experiences, reflective observation, and active engagement with the environment.

Two primary forms of data were collected: visual and written. Students captured photographs of plant species they found significant, documenting biodiversity as a means of connecting ecological principles to broader intercultural themes. These photographs were accompanied by reflective essays where participants analyzed their observations and drew parallels between biodiversity and human societal dynamics. Reflection is a key element in transformative learning, which helps bridge practical experiences and theoretical concepts (Mezirow, 1997). Participants were encouraged to focus on specific plants that resonated with them, leading to rich, personal interpretations of themes such as interconnectedness and diversity. For example, some students explored the banana tree as a symbol of cultural exchange due to its historical and economic importance in global trade, while others examined water lilies for their symbolism of renewal and growth.

An inductive thematic analysis was conducted following Braun and Clarke's (2006) framework. This method involved six phases: familiarizing with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the final analysis. Reflections and essays were coded to identify recurring themes related to biodiversity and intercultural education, such as diversity as a resource, the importance of interconnection, and the resilience of natural and cultural systems.

3. FINDINGS

The analysis identified three overarching themes that illustrate the connections between biodiversity and intercultural education: diversity as a value, interconnection and unity, and renewal. These themes reflect the conceptual and practical potential of biodiversity as a framework for understanding and fostering intercultural relationships.

3.1. Diversity as a Value

Biodiversity underscores the inherent value of variety, highlighting how differences contribute to the strength and adaptability of systems. This mirrors the principles of intercultural education, where diversity is regarded as a resource for learning, innovation, and growth. In ecological terms, the coexistence of diverse species within an ecosystem enhances stability, providing a model for embracing cultural diversity. As Bateson (2002) explains, systemic health relies on the inclusion and

interplay of distinct elements, each contributing uniquely to the whole (Bowers, 2011).

3.2. Interconnection and Unity

The concept of interdependence in biodiversity offers a powerful metaphor for the relational dynamics within human societies. Ecological systems thrive through mutual support and cooperation, where every element is interconnected. Similarly, intercultural education emphasizes the importance of building relationships and fostering understanding between cultures. Shiva (1993) highlights how biodiversity exemplifies the interconnectedness of life, encouraging a systemic perspective that values relationships and mutual reliance.

3.3. Resilience and Renewal

Resilience in natural systems serves as a model for cultural and societal sustainability. Ecological cycles of regeneration and adaptation illustrate how systems recover from disturbances and evolve over time. These principles align with intercultural education's emphasis on adaptability, cultural preservation, and the ability to thrive amid change.

4. DISCUSSION

The findings reveal how biodiversity can act as both a metaphorical and practical framework for advancing intercultural education. By emphasizing the value of diversity, interconnection, and resilience, biodiversity provides a systemic lens for understanding human relationships and societal structures. This convergence offers significant pedagogical implications for fostering inclusivity and sustainability.

Diversity as a value is a foundational principle in both ecological and cultural systems. In ecosystems, diversity enhances resilience and ensures stability, as each species contributes uniquely to the overall system. Bowers (2011) argues that diversity is not merely a characteristic of systems but a critical element for their survival. Similarly, intercultural education views cultural diversity as an asset that enriches learning environments and strengthens social cohesion (Elamè, 2002). The parallels between these perspectives underscore the importance of integrating biodiversity into educational frameworks to promote mutual respect and appreciation.

Interconnection emerges as a key theme in biodiversity, reflecting the interdependence that sustains ecosystems. This concept translates effectively into intercultural education, where relational thinking fosters cooperation and understanding across cultural boundaries. Dozza (2022) highlights the interconnected nature of biodiversity, drawing attention to the systemic relationships that bind ecological and human systems. This perspective encourages learners to view cultures as interconnected rather than isolated, promoting a relational approach to diversity. Resilience and renewal in biodiversity demonstrate how natural systems adapt to challenges, providing valuable lessons for societal and cultural sustainability.

Bridgewater and Rotherham (2019) highlight the cyclical processes of regeneration in ecosystems, which serve as a model for preserving cultural traditions and fostering adaptability. These principles align with the goals of intercultural education, which seeks to equip individuals with the tools to navigate and thrive in an ever-changing global context. The integration of biodiversity into intercultural education offers a comprehensive approach to addressing global challenges, such as sustainability, inclusivity, and resilience. By fostering systemic thinking and relational understanding, this approach equips learners to appreciate diversity, build connections, and adapt to evolving circumstances. The findings underscore the transformative potential of aligning ecological and cultural frameworks within educational contexts, creating a pathway for future research and practical implementation.

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