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INCORPORATING TRADITIONAL ECOLOGICAL KNOWLEDGE (TEK) INTO CURRICULUM DEVELOPMENT



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Indigenous peoples have lived in harmony with the natural world for thousands of years, developing unique ways of understanding and interacting with their surroundings. This knowledge, often passed down through oral tradition, encompasses a wide range of information about the environment, culture, and history of their communities. Since the Paris Agreement of 2015 (United Nations Framework Convention on Climate Change [UNFCCC], 2015), there has been growing recognition of the importance of preserving and utilising this indigenous knowledge to improve the lives of indigenous peoples and protect the planet's natural resources. However, to fully harness the potential of this

knowledge, it is essential to decolonise current practices and ensure that indigenous knowledge systems are authentically respected and treated as equal to scientific knowledge in addressing global challenges.

The preliminary findings of our present study in Malaysia highlight that the Jahai, Jakun, and Semai peoples have developed a profound understanding of the natural world through generations of living in close connection with the forests. This knowledge, referred to as 'traditional ecological knowledge' (TEK) (Berkes, 2018), includes information about the region's climatology, seasonal patterns, and cultural beliefs in the reciprocal

moves beyond treating cultural and linguistic backgrounds as deficits, instead valuing them as assets for enriching learning (González et al., 2005; Moll et al., 1992). By integrating TEK, teachers can adopt more culturally responsive teaching practices, fostering more inclusive and equitable learning environments for all children. Moreover, this approach can help dismantle stereotypes and biases, utilising the cultural resources that children bring to the classroom to enhance learning.

Despite its potential, the integration of TEK into curriculum development is often superficial. Curricula frequently fail to engage deeply with TEK's nuanced

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relationship between humans and nature. For example, the Semai people believe in concepts like "badi", where disrespecting natural events such as thermal rain can result in illness, and "cedau", a rainbow bridge between tree cores that signifies the presence of a spiritual entity. These insights reflect the complexity and cultural depth of TEK, which extends beyond mere ecological understanding to incorporate holistic views of the environment.

Incorporating TEK into curriculum development requires recognising the indigenous epistemologies held by these communities and considering how these can be utilised to support children's learning in the classroom. This approach

practices and values. Simply incorporating texts or stories relevant to a child's culture may reinforce romanticised views, rather than addressing the complexities and dynamism of traditional knowledge systems. Furthermore, the recognition of communities' skills, gained from farming or other ecological traditions, must extend beyond surface-level activities. Without thoughtful and meaningful integration, such efforts risk reinforcing stereotypes rather than fostering genuine understanding and respect for diverse knowledge systems. To address this, TEK must be integrated as a core, evolving component of the curriculum, promoting critical thinking and real-world application.

A failure in the practical application of TEK can be seen in Australia, where efforts to collaborate with indigenous communities have been undermined by the persistence of a Western-centric approach within the formal education system (Maxwell et al., 2018). While there have been attempts to integrate TEK, the overarching educational framework remains dominated by Western values and scientific models (Bishop, 2024). As a result, TEK is often incorporated in a superficial manner and treated as secondary to Western scientific knowledge. This imbalance diminishes the richness of TEK and reinforces the marginalisation of indigenous knowledge systems, perpetuating the very power imbalances that these efforts seek to address.

children can engage with content that reflects their cultural heritage and fosters a deep connection to the natural world. Ultimately, this approach not only preserves indigenous knowledge for future generations but also empowers children through a curriculum that is relevant, respectful, and transformative.

In conclusion, while recognising and incorporating TEK into curriculum development is essential, it is insufficient without deeper systemic changes. Efforts to integrate TEK risk being tokenistic unless accompanied by a decolonisation of the education system itself. True collaboration with indigenous communities requires more than just incorporating their knowledge; it demands a fundamental rethinking of

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In our research, we are committed to decolonising the curriculum development process by placing indigenous knowledge and traditions at the core of our approach. Rather than treating TEK as supplementary, we engage indigenous communities as equal partners from the outset, ensuring their knowledge is authentically embedded in the curriculum. This collaborative process challenges the dominance of Western-centric educational frameworks, allowing the curriculum to be fully responsive to the cultural values, needs, and perspectives of the communities involved. By doing so, we aim to create more inclusive and

equitable learning environments, where educational frameworks that continue to privilege Western epistemologies. Without addressing these power imbalances, TEK's inclusion will remain limited, and its potential to offer genuine solutions to educational and environmental challenges will be undermined. Systemic shifts must occur to ensure their knowledge is valued on equal footing with scientific paradigms. Only through this deeper transformation can TEK contribute meaningfully to creating a sustainable, culturally responsive educational system that benefits all children.

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