



The Exchange of Traditional and Academic Knowledge through Intercultural Scientific Education

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Abstract

Negotiations of the conflicts and differences between knowledge systems are necessary for intercultural science education. We investigate the possibility for science education to serve as a bridge between conventional and modern knowledge, drawing on anthropological fieldwork and pedagogical interventions in two agricultural communities in Northeast Brazil. While academic information is prioritised in biology education, traditional knowledge influences agricultural activities and relationships with the environment in the villages of Coraço de Maria and Retiro. We examine the relationships between traditional and academic ecological knowledge in these communities and make the case that they can guide reflective practises in intercultural dialogue on the basis of philosophical discussions about "partial overlaps" between epistemologies, ontologies, and value systems. Analyzing the research themes and objects of papers that were published in Anthropology and Education Quarterly between 2000 and 2009 will be the subject of this analysis. We discovered that when it comes to study themes, the Monolingual Bilingual Education, concerns of identification, social exclusion, and cultural conflict, as well as the clash between modernity and tradition, are crucial to Anthropology and Education Quarterly. When it comes to study subjects, Anthropology and Education Quarterly places a lot of emphasis on studies of mainstream culture and cultural diversity. Additionally, it emphasises the global viewpoint of Educational Anthropology and pays attention to how other nations' educational systems are doing. Hence, China's Educational Anthropology should broaden its areas of study, focus on the study of domestic mainstream culture, and take its educational ethnography abroad while also strengthening the self-construction.

Keywords: Anthropology, Education, Domestic

INTRODUCTION

Many epistemic communities both inside and outside of academia contribute to our understanding of the biological world (Bornmann L et al., 2008). The acknowledgement of this knowledge variety in areas like agriculture, the conservation of biodiversity, and public health is necessary to address many difficulties in the biological sciences. The study of Traditional Ecological Knowledge and the knowledge of diverse actors outside of academia is studied through the integrative area of ethnobiology. While TEK's growing popularity offers chances for enhanced community engagement and representation through collaborative practises, its relationship with academic ecological knowledge also poses difficult methodological problems

(Daipha P, 2001). The anthropological literature highlights the dangers of overly optimistic integration projects, but pessimistic assertions that AEK and TEK are incommensurable run the risk of dismissing the potential for cross-cultural communication and the development of culturally sensitive practises in science education. We propose to move beyond simple narratives of integration or incommensurability by looking at the dynamics of negotiation processes that "can hammer out a local coordination, despite vast global differences establish; contact languages, systems of discourse," which Galison refers to as "trading zones" in the context of transdisciplinary negotiation. In two rural settlements in the Brazilian state of Bahia, Coraço de Maria and Retiro, the multicultural scientific education is the main topic of this essay (Da Silva FC et al., 2011). The section

proposes a theoretical framework that integrates the idea of "trading zones" with ethnobiological models of "partial overlaps" of knowledge systems in order to explain dynamics in cross-cultural science education. The section describes our methods for interacting with regional agricultural and educational activities as well as the empirical case study of the communities Coraço de Maria and Retiro. The section examines three case studies of agricultural and taxonomic activities to examine the partial overlaps between AEK and TEK in Coraço de Maria and Retiro (Diamond L 2006). By demonstrating how it might support critically self-reflective practises of multicultural scientific education, this partial overlap model and technique enters the educational space. Galison's concept of "trading zones" was first brought to the history and philosophy of science in 1997, and it serves as the foundation for this analysis (Gill TM 2013). In spite of heterogeneous "forms of work, modes of demonstration, ontological commitments all differ among the numerous traditions that compose physics at any given point in the twentieth century," Galison's account seeks to comprehend the success of collaborative practises in microphysics. By demonstrating how the interaction of knowledge systems and material practises can result in the formation of new meanings and concepts, the concept of trade zones adds a more dynamic component to the model of partial overlaps (Lelli D et al., 2013). The paradigm of agricultural modernization, which distributes Western technologies to the "rest of the world" in an effort to boost agricultural production, is strongly related to global agricultural development. The export of technologies like fertilisers, machineries, pesticides, and seed varieties has frequently been accompanied with a neglect and marginalisation of traditional agricultural knowledge and practises, as critical analyses of the "Green Revolution" have argued in detail. This unidirectional technological export has frequently had disastrous effects on local communities by destroying long-term relationships with the natural world (Lin X-D et al., 2017). No matter if it's soil erosion brought on by intensifying agriculture, loss of food security brought on by land grabs and monoculture, or bug outbreaks brought on by a decline in biodiversity.

Diversity in intercultural

Students were always there when we spoke with their farming families and went on field trips with them. As a result, for the students, the TEK procedures and classifications from the earlier parts are not only abstract bodies of knowledge, but are also closely related to their daily lives and informal family practises of knowledge transfer (Rihtaric D et al., 2010). From the standpoint of multicultural science education, this constellation poses difficult issues regarding potential synergies between formal education and unofficial TEK transmission, as well as methods for resolving conflicts between the two. The development of this educational activity was made easier by the researcher's tight working relationships with the teachers, which included discussions

about pedagogical methods for teaching contextualised ecology and integrating such methods in real-world examples from routine farming practises (Tao Y, 2019). The lesson plan that was implemented in the two schools was intended to cover fundamental ecological concepts like the idea of ecological relationships (interactions between organisms), energy flows into ecosystems, food chains, and trophic networks. Along with the scientific teachers, this collection of ideas was produced while taking the curricula into consideration. This approach aims to identify points of convergence and divergence by analysing relationships between knowledge systems. Contextual cognition tables' three columns make it possible to create connections between the cultural knowledge of students, the lessons taught in ecology, and the scientific information found in the literature. These connections can substantially enhance discussions in science classes. The activity proved to be mutually enriching for both the students and the teachers. For the students, it allowed them to appreciate the value of their local knowledge and its cultural significance, and it broadened their pedagogical tools for engaging students in dialogue through culturally sensitive science education (Gouilh MA et al., 2011).

CONCLUSIONS

Our study's findings support this broad picture while also offering tools for a more detailed comprehension of bargaining techniques. By adding the concept of "trading zones" to the framework of partial overlaps between TEK and AEK, we hope to give both the modelling of links between knowledge systems and the methodology of intervening in them through educational practises a dynamic process component.

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