CULTURAL ASTRONOMY: A POSSIBILITY FOR TEACHER TRAINING

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This presentation reports on part of a study carried out aiming to search for the contribution of the research in Cultural Astronomy to the teacher training. First, we sought to establish an overview of the existing literature in Cultural Astronomy, in order to answer the following question: how is the subject Cultural Astronomy being addressed in the scientific publications on Astronomy Education? We offer a review of the publications in journals, symposia and the BTD (Thesis and dissertations repository) of CAPES - Coordination of Improvement of Higher Education Personnel in Brazil. BTD is a platform designed to access theses, dissertations and other scientific outcomes in Brazil. It is part of the journal's portal of the Institution.

We selected papers from Brazilian authors as well as from the international community. Afterwards we filtered the database to papers that addressed the training of science teachers. We identified papers related to indigenous and Afro-Brazilian cultures, Incan, Mayan, African and Asian cultures, amongst others. The data were analyzed according to Bardin's content analysis.

The papers were classified in dissertations and theses. Then we went through a filter according to the year of publication, author, researchers' advisors, name of the graduate program, title of the work, higher education institution, geographical region and state, keywords, cited bibliographic references, theoretical foundations, most cited researchers, data collection technique, methodological analysis, thematic focus and specific contents of Cultural Astronomy.

This survey shows that research in Cultural Astronomy is still in its initial steps; only a Few authors are active in this area relative to the growing output in the teaching of astronomy in general, especially in Brazil. We can thus say that it is relevant to include elements of the study of astronomy by Indigenous, Afro-Brazilian, and other cultures in the curriculum of teacher training because this cultural wealth has a lot to offer us in terms of intercultural relations and the study of the universe as done in these various cultures.

FURTHER READING

Albuquerque, V., Merlucci, C., Rodrigues, M., & Leite, C. (2011). Astronomia e cultura nas pesquisas em ensino de ciências na última década. In: Simpósio Nacional De Educação Em Astronomia, 1. http://snea2011.vitis.uspnet.usp.br/sites/default/files/SNEA2011_TCO29.pdf

Bardin, L. (2006). Análise de conteúdo. Lisboa: Editora 70.

Bretones, P. S. & Megid Neto, J. (2011). An analysis of papers on astronomy education in proceedings of IAU meetings from 1988 to 2006. *Astronomy Education Review, Washington, 10*(1), 1-9.

Cardoso, W. T. (2007). O céu dos Tukano da Escola Yupuri: construindo um calendário dinâmico. Tese (Doutorado em Educação Matemática) - Pontifícia Universidade Católica de São Paulo, São Paulo.

Correa, L. F. & Simões, B. dos S. (2016). Astronomia indígena na formação de professores: Uma possibilidade a partir da abordagem CTS. *Ciência e Natura, 38(*1), 475- 483. https://periodicos.ufsm.br/index.php/cienciaenatura/article/view/19113 (available in Portuguese and English)

Jafelice, L. C. (2009). Etnoastronomia: Quantos céus existem? *Revista Ciência Sempre, 12*, 27–31.

Iachel, G. & Nardi, R. (2010). Algumas tendências das publicações relacionadas à astronomia em periódicos brasileiros de ensino de física nas últimas décadas. *Ensaio Pesquisa em Educação em Ciências, Belo Horizonte, 12*(2) 225-238.

Langhi, R.& Nardi, R. (2010). Formação de professores e seus saberes disciplinares em astronomia essencial nos anos iniciais do ensino fundamental. *Ensaio Pesquisa em Educação em Ciências, Belo Horizonte, 12(*2) 205-224. https://www.scielo.br/pdf/epec/v12n2/1983-2117-epec-12-02-00205.pdf

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