## 12 - Cultural, Social and Gender Issues in Science and Technology Education | Empirical

## SP - (15901) - EPISTEMIC REFLECTION AS AN EMERGING TEACHING PRACTICE IN CULTURALLY DIVERSE CLASSROOMS

Julio César Tovar-Gálvez (Germany)[1]

1 - Martin-Luther-Universität Halle-Wittenberg

**Short Abstract**

Nowadays, classrooms are culturally diverse because of the plural population composition and/or the immigration processes. This cultural diversity also implies epistemological diversity. When teachers confront this diversity, they might enact an exclusive or inclusive relationship between such epistemologies. The inclusive relationship is achieved when communities symmetrically recognize the existence of diverse epistemologies, validate their contribution to understand or intervene in reality, and participate in them. The aim of this research is to identify emerging practices when science teachers use the Epistemological Bridge (EB) approach between the epistemology of science and traditional epistemologies. The EB is a didactic process during which teachers engage students in the production of learning outputs by establishing an inclusive relationship between the epistemology of science and traditional epistemologies. Three teachers from secondary schools in Colombia were enrolled to a qualitative study on their practices guided by the EB. Teachers conducted students in explaining phenomena from chemistry and indigenous epistemologies. As a result, the three teachers enacted an 'epistemic reflection', because they address with students the nature, structure, and use of the ideas, practices, and explanations of each epistemology. This emerging practice is framed into the Nature of Science (NOS) teaching. When teachers teach the NOS, they can guide students in deconstructing science and understanding its domain in comparison to other epistemologies. Additionally, this emerging practice is supported on empirical evidence from other research. Some studies sustain the positive effect of the practice of 'making the rationale of scientific explanations explicit' on the student's learning output.