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SP - (16646) - PROPOSING A TEACHING DESIGN FOR ENERGY BASED ON HETEROGENEITY OF THINKING AND FREIRE' PEDAGOGY

Artur Torres De Araújo (Brazil)¹; Edenia Maria Ribeiro Do Amaral (Brazil)¹

1 - Universidade Federal Rural de Pernambuco

Short Abstract

In this paper, we intend to propose a teaching design based on two perspectives – Paulo Freire's pedagogical approach and conceptual profiles theory – considering the heterogeneity of thinking emerging in discussions on energy from a critical problematizing approach for teaching. We identify convergences between these two perspectives that could contribute to innovative approach for science education: focus on dialogic interactions, valorization of the social context to problematize real situations, dialogue as fundamental for the development of consciousness, self-regulation, autonomy, and learning. To articulate these two perspectives, we chose to deal with the concept of energy, considered as central, multidisciplinary, and unifying concept. For a qualitative investigation, we proposed a teaching design supported by a model organized in three pedagogical moments: initial problematization, knowledge organization, and knowledge application. The proposal was applied in online short course involving 12 undergraduate students which occurred in the Google Meet platform and all sessions were recorded. In each pedagogical moment, the students were asked to develop activities such as: video exhibition, discuss and solve problematizing situations, do task in worksheets and discuss results. Results point that the heterogeneity of thinking is present in all pedagogical moments, and the problematizing strategies by using videos and discussing problem-making situations seemed to improve the students' perception about the wide repertoire of ideas and contexts implicated in the understanding on energy. This is evidenced in the discussion of the second pedagogical moment as the students recovered situations in which they experienced application for the energy concept. In the knowledge application a new zone emerged in the students' speeches, suggesting an expansion of ideas on the concept.

Keywords: Conceptual Profiles Theory. Critical and Problematising Teaching. Energy concept.