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The Socratic Method as A Pedagogical Resource Homologous to The Case Method for Conceptual Understanding in Physics

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Abstract

The objective of the research was to prove that the Socratic Method implicit in the Case Methodology can improve conceptual understanding in students taking physics and engineering courses. This is based on the question: Will the Socratic Method, through case studies, improve the understanding of physics concepts in the university engineering field?
Theories on the Case Method, active learning based on collaborative work, dialogic discussion and the question as a learning trigger resource, were addressed.
With the above aspects, the hypothesis is raised: With the Socratic Method, greater conceptual understanding of disciplinary principles. The methodology consisted of 4 phases: the teacher designs the case of study; then, poses questions of the case; the students give answers; they discuss the Case in its causes, facts, problems and solution strategies; after varied points of views construct more refined definitions; solutions allowed by universal principles are selected.
The Socratic method is applied with the following activities: individual Case reading; focal groups; plenary; assessment by judges of the dimensions of understanding. The results when implementing the method were: the judges evaluated discussion in plenary and focal groups, with high levels of comprehension using four item rating scale, for the evaluation rubric. Conclusion, the Socrative method favorably impacts understanding through dialogic socialization, narrative construction and development of logical, methodical and reflective thought when carrying out induction work and analysis of the portion of reality under study.

Keywords: Collaborative Learning, Constructivism, Inductive Thought, Narratives, Socialization of Knowledge