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Enabling the Application of Threshold Concepts in Pedagogical Practice through Active Teaching

Context: The theory of threshold concepts (TCs) got significant attention since it was developed by Meyer and Land. Still, practical application of the theory faces both fundamental and practical challenges that were not fully addressed before, especially in the requirements engineering subject area.

Goal: The goal of this contribution is to conduct a thorough analysis of fundamental/theoretical and practical challenges in the application of threshold concepts and suggest a framework for the application of them on the basis of active teaching and course development. In this presentation, we will be focused on the teaching of a module in the undergraduate Requirements Engineering course that is taught at Blekinge Institute of Technology, Sweden.

Method: We conducted interview studies with faculty members and students, who completed this course one year ago, in order to investigate the application of threshold concepts in teaching a module of the undergraduate requirements engineering course.

Results: Our results suggest that the concept of threshold concepts requires further refinement for its practical application. In particular, the process of identification of threshold concepts is problematic and usually based on the opinion of teachers. It stays unclear how students' perspectives should be taken into account while identifying such threshold concepts. Usually, threshold concepts are not identified systematically, and there is no understanding of interconnections between different threshold concepts. Moreover, teachers lack a systematic vision for the application of TCs in their teaching. We suggest that TCs should be considered as a tool requiring active teaching, which requires (1) collegial discussions with other teachers and (2) dialog with students.