

SCIENCE TEACHING LABORATORY APPLICATIONS: COMMON KNOWLEDGE CONSTRUCTION, LEARNING CYCLE MODELS AND STEM APPROACH

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Abstract

To achieve the purpose of inquiry learning approaches and models, it is necessary to identify the difficulties encountered because the science teacher candidates have key prescriptions. Therefore, the aim is to reflect fruitful and high level critical views at the end of the process providing them different learning difficulties using different learning models and approaches at every stages. For this purpose, qualitative research method was used in the study conducted with 40 candidates selected from easily accessible case sample among the third-grade students attending the undergraduate program of science teacher education. Open-ended form was prepared as a data collection tool and the data were generated using content analysis. Finally, the answers given by the teacher candidates are thematized as advantages, disadvantages, cognitive domain, skills, affective domain, SETSE dimension, TQF. The codes generated under the themes vary according to the applied model and approach. The nature of science, team work, and discussion culture code were most evident in CMCK. While the STS code was on the forefront in 5E model, the engineering and design skills code was found to be at a high level in STEM implementation.

Keywords: Inquiry-based approach, 5E, CMCK, STEM, science teaching.