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Compromise between mathematics and physics in teaching: instructors' views on the role of mathematics in advanced physics courses for teachers

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Learning physics is challenging, in part due to its deep connection to mathematics. What part does mathematics play in in-service teacher education? We have studied an MSc program for science teachers in Israel, where advanced physics courses are taught by physicists. One of the program's design principles is that the graduate be in command of mathematics and understand its relevance for physics. Using semi-structured interviews with the instructors, we sought to understand the value they assign to the above principle. Several views emerged, some distinct from the original principle: one, mathematics as providing coherence, two, mathematics as secondary to qualitative understanding, or three, adapting topics to the teachers' abilities.

Education level

Pre-service and in-service teacher education

Physics topic

Other

Research focus

Other

Research method

Educational design research (Qualitative research)

Organizing preference criteria

Track

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