

PREPARING PROSPECTIVE TEACHERS FOR AN INTEGRATED APPROACH TO STEM EDUCATION

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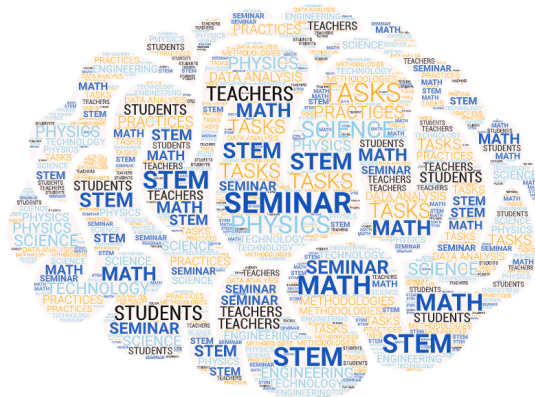
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Abstract:

A successful STEM integration depends on teachers' perspectives and knowledge to adopt this pedagogical practice, namely, to choose effective learning materials and topics suitable for that integration and feel confident in adopting progressive teaching methods. Thus, it is fundamental that, in their initial teacher education, prospective teachers can experience interdisciplinary situations to fill their lack of knowledge on the articulation between diverse scientific areas. However, research has shown that often mathematics is the subject that less benefits from the STEM context and that it is incidental to the purpose of the integration activities. With the goal of supporting the development of teachers' knowledge concerning an integrated STEM approach, we carried out a teacher education project with mathematics and physics secondary pre-service teachers (PTs), involving a learning scenario that articulated physics and statistics, using technology, and adopting an inquiry approach. The scenario was planned to address the dimensions of the adopted model of "Authentic Integration" of mathematics and science, that centers on the work with rich tasks, in relation with three domains: application to the real-world, focused inquiry resulting in higher order thinking, and knowledge development, synthesis, and application. Thus, this communication aims contributing to the necessary debate concerning the preparation of prospective teachers for an integrated STEM approach.