

SYMPP - (18740) - ADDRESSING CULTURAL DIVERSITY IN STEM EDUCATION

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Short Abstract

A challenge for our current society is the increase in diverse cultural backgrounds of our citizens. This challenge holds true in particular for mathematics and science education, as around 20% of 15-year-olds underachieve in these subjects. The situation requires urgent action as these subjects are vital prerequisites for employability and active participation in society. Additionally, Western perspectives on science and mathematics do often not value the contributions of different ethnic groups to scientific development, thus making it hard for people with migrant background to identify with science and mathematics. Therefore, addressing cultural diversity in science and mathematics education has the potential to offer all students equal chances for future careers and responsible citizenship. This situation stimulated partners in the European ICSE consortium to address the research question: How can cultural diversity be addressed in science and mathematics education and how can teachers' self-efficacy and practices on addressing cultural diversity be fostered? I will present the results of a literature review that underpinned the design features of a professional development (PD) program, implemented by partners in six countries. To investigate the outcome of the PD program, we surveyed 311 mathematics and science teachers' pre- and post-attitudes towards addressing cultural diversity in their classrooms. Results from teacher survey show a small but significant increase in teachers' self-efficacy beliefs as well as practices to address cultural diversity. The results showed also that the course reduced limiting contextual factors to address diversity in their classrooms allowing all students to actively partake in STEM education.