

SP - (15715) - SCIENCE AND LANGUAGE INTEGRATED LEARNING: THE EFFECTIVENESS OF A SCIENCE OUTREACH PROGRAMME FOR MIGRANT STUDENTS

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Short Abstract

Inspiring ethnic minority students to pursue higher education in STEM (Science, Technology, Engineering, and Mathematics) is a challenge currently faced by many European countries. This target group of pupils often underperforms in STEM subjects due to a variety of reasons, including specific linguistic and educational needs. In this study, we introduce an innovative science outreach and educational programme, which follows a science and language integrated learning approach. It brings together real-world bilingual STEM professionals and migrant students for after-school science workshops in their heritage language. The 90-minute workshops aim to provide the students positive learning experiences and feature an inquiry-based approach, hands-on activities and science communication with potential role models. We applied a multisite cluster randomized controlled trial with repeated measures to investigate the effects on students' motivation for science and for their heritage language (Portuguese). Eighty-three migrant pupils (aged 6 to 17 years) participated in six cities in two European countries in this study. We observed, in our treatment group compared to the control group, after four weeks a tendency of increased attainment value for science and an increased self-concept of ability in Portuguese. Furthermore, we observed in both groups immediately after the workshops an increase in the students' intrinsic interest, attainment value, self-concept, and intention to future participation in science as well as their intrinsic interest for Portuguese. The results provide evidence for the effectiveness of the workshops and indicate that it is possible to foster migrant students' motivation by a short intervention of a science outreach programme.