

Can a science enrichment programme delivered in the mother tongue of foreign scientists increase the motivation of migrant pupils for science?

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Abstract

Inspiring ethnic minority and migrant students to pursue higher education or careers in STEM (Science, Technology, Engineering, and Mathematics) is a challenge faced by many schools and institutions in the UK. This target group often underperforms in STEM subjects due to a variety of reasons, including specific linguistic and educational needs. The Native Scientist project (www.nativescientist.com) follows a science and language integrated learning approach bringing together real-world STEM professionals and migrant students to discuss science topics and science careers in the students' heritage language.

In this paper, we (1) describe an innovative science education and outreach programme that connects migrant students with scientists of the same linguistic and cultural background and is built upon a carousel teaching strategy and a Content and Language Integrated Learning (CLIL) approach; (2) we present results of a randomised controlled trial (RCT) that tested the effectiveness of the programme; and (3) we discuss the challenges and benefits of transitioning the in-person programme to an online synchronous programme during the pandemic. Our results point to an increased attainment value, intrinsic interest, self-concept, and intention to future participation in science and increased intrinsic interest and self-concept of ability for the students' heritage language immediately after the workshop.

Our experience in providing the programme in an online synchronous manner during the pandemic shows that positive outcomes for students and scientists can still be achieved but stresses the importance of providing high-quality bespoke training to the scientists who act as instructors and work closely with the teacher to prepare the day of the workshop. Overall, results indicate a positive effect of the workshops and indicate that it is possible to foster migrant students' motivation for science through their participation in a science outreach programme.