This poster outlines a pilot scheme for delivering CPD training to undergraduate STEM students, utilising trainee science teachers as “near-peer” mentors to enhance student volunteers’ ability to undertake science outreach activities in local schools and the wider community.

The driving force for this project is to tackle the teacher shortage in STEM subjects, which it is hoped can be achieved in a number of ways. The trainee teachers themselves will develop their professional skills by acting as mentors while STEM students will become more closely engaged with the profession, current pedagogy and young people within schools. This effectively serves as a marketing tool which potentially increases the likelihood of these students applying for Initial Teacher Training (ITT). Finally, the long-term goal is to enhance children’s enthusiasm for science at an early stage, with a view to widening participation and improving uptake of STEM subjects at A-level and in Higher Education – nurturing the interest and talent of a future generation of teachers.

Since 2009, entries into ITT have fallen by 17% (Fig. 1) and were 7% below demand in 2014/15 (Ofsted, 2014). Recent changes to recruitment into ITT courses have led to “instability” for many universities, with the number of training places allocated directly to HEIs falling by 23% since 2012 (UKQ, 2014). Meanwhile, data shows that the new School Direct training route recruited only two-thirds of its allocation in 2013/14 and, while it has been more successful in recruiting trainee English and history teachers, it has been less successful for STEM subjects (Fig. 2) which has “contributed to a shortfall in the number of trainee teachers recruited into... mathematics and physics” (TES, 2014).

While the overall calibre of entrants into ITT is increasing (Fig. 3), data shows that trainee mathematics and science teachers are the least qualified (Fig. 4). Indeed, data from NTCL shows that approximately a third of STEM applicants have a degree in an unrelated subject and require Subject Knowledge Enhancement.

A key aim of this work is to enhance the quality of workshops provided by STEM students by equipping them with the basic tools of education: planning, presentation skills and elementary pedagogy. This will also develop the students’ transferrable skills for employability, including communication and team working, while also building confidence. By working with trainee teachers, STEM students will gain an insight into life in a school environment and associated issues such as safeguarding. Through participation in this project, trainee teachers will gain valuable experience in their development as practitioners and build evidence toward meeting the Teachers’ Standards.

The final aim of this project is to strengthen the partnership between CPLE, STEM departments and representatives from professional associations [OfSTED, RSB, and RSC], with a view to raising the profile of the teaching profession and improving recruitment and retention into teacher training for shortage subjects. Some of the workshops were trialled in 2015 and in 2016 CPE will be launching a full pilot scheme to support students in running STEM days for local schools.

References


John Thornby 1, 2, Kate Mawson 1, 2, Will Haywood 1, 3 – University of Warwick, CV4 7AL
1 Centre for Professional Education, 2 Centre for Education Studies, 3 Learning and Development Centre