**Winning entry for the TEAN Commendation 2018**

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Many UK primary school teachers report that they struggle with science subject knowledge and that this causes them to lack confidence about teaching science (DfE, 2013). Unfortunately, this can have a negative impact on children’s learning and attitudes to science (Ofsted, 2011), highlighting the importance of positively influencing attitudes towards STEM subjects of ITE students at an early stage of their careers (Jung and Rhodes 2008). Our initial work aimed to address this by using engineering as an approach to teaching science. Primary ITE students were paired with engineering students within a knowledge and skills exchange framework to design and deliver engineering challenges. The ITE students were given training to raise their awareness about engineering as well as how to use the engineering design process as a vehicle for teaching science. The engineers were given training on working with children and communicating and assessing understanding. The paired peers then taught science through engineering in local schools.

Working as paired peers within a knowledge exchange format significantly increased the ITE students’ confidence in both engineering and science subject knowledge as well as their confidence in their ability to teach these subjects well (self-efficacy). This is known to be a key factor (in ensuring positive outcomes for children (Singh & Stoloff, 2008). The ITE students were also able to reflect on their own development as teachers through helping the engineering students whilst in the classroom.

A model toolkit was developed as a result of this successful initial project which has now been formally built into UG provision within both the engineering and education departments. Presently, universities are looking for effective routes to work with schools in meaningful and sustainable outreach. Therefore, the implementation of this toolkit is currently being evaluated for longer term impact with dissemination to other HEIs being our goal.