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‘I can’t do Maths’: Scaffolding the learning experience to support a diverse range of students

Day 2 – Parallel IV (10.55-11.55)

The presenters have creatively risen to the challenge of leading and delivering a statistics module for Business programmes with over 500 students, running in several locations, both in the UK and overseas. The challenge to engage and motivate both a large group of students and a large team of staff is not to be underestimated. The students are diverse in terms of age, ethnicity, gender and previous educational background. Furthermore, many of them have not formally studied mathematics for a number of years, lack confidence in their abilities and are often dismayed to discover that they need to do a statistics module in their first year and hence are a reluctant audience.

The presenters led the module for a number of years and the challenges, triumphs and mistakes made along the way led the presenters to question several aspects of the structure and delivery of the module. An action research reflective approach was adopted to implement and evaluate year-on-year teaching and learning enhancements aimed at increasing student engagement and performance. Regular team meetings and one-to-one interviews with the extended teaching team were used to evaluate staff perspectives on teaching innovations. Student opinions were incorporated via routine module evaluation questionnaires, opinion surveys aligned with key innovations and focus groups.

The teaching and learning strategy on the module was reconsidered to embrace technology and create an effective blended approach that integrated face-to-face delivery with facilities in the virtual learning environment to scaffold the learning experience for students. Online features were developed to help students master the technical calculation aspects of the subject, freeing time in the face-to-face sessions to include material to inspire and motivate students to appreciate the relevance of statistics resulting in increased levels of engagement. Class sizes were also increased to release time for advice sessions for students to access one-to-one support at key points of need to address and correct misunderstandings in their logic and approach. Pass rates on the module increased significantly and increasing numbers of students progressed to study further statistics modules. Furthermore, colleagues on higher level business modules that required statistical knowledge were reporting that students were now better prepared and hence were performing better in these aspects of their programmes.

Strategies for effective team teaching across multiple cohorts are now well established aimed at delivering a consistent learning and assessment experience whilst still retaining flexibility for staff to respond to the needs of individual groups of students. New teaching staff are inducted into the holistic philosophy of using face-to-face contact to help students understand and appreciate why statistics is vital to their programmes and future careers and employing technology and one-to-one time to support students in developing the necessary skills to succeed. Whilst the presentation focuses on a particular module in the context of a specific institution, many of the lessons learnt and adopted approaches are generalisable to other contexts. The module considered in this presentation has been transformed as a result of the ongoing reflective development process.