Report from eSTEeM OU delegates to the HEA STEM conference 2017 Manchester

Attendees

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The theme of year's HEA conference focused on achieving excellence in teaching and learning. Increasing numbers of STEM students across the sector, the growing diversity in student intake profiles and the challenge of looming TEF were clearly focusing many minds at the two-day event. The stated conference aim was to show how teaching excellence could be evidence within the STEM disciplines and to support delegates to identify best practice from across the sector.

The programme included a varied an interesting programme of keynote speakers, posters, short presentations and workshops. All STEM disciplines were well represented and it was pleasing to see delegates from a wide range of HEIs.

Two keynote speakers bookended the conference. Day 1 began with a very interesting contribution from Professor Sir Bill Wakeham (of the Government's Wakeham Review) outlining issues relating to employment outcomes for STEM graduates. There were some real insights from the review into the factors affecting graduate employability and three strong take home messages for the OU STEM subjects.

- the development of employability skills must be built into the curriculum and not 'added on'.
- relevant work experience is essential
- accreditation has a very positive affect of employability

The second day speaker was Prof. Peter Goodhew's. This presentation, while interesting, had less direct relevant interest to the OU. Prof. Goodhew is leading on an initiative to set up a new university in Hereford and planning to offer an innovative engineering degree for academically able students without STEM 'A' levels.

Both keynote presentations and the entire programme plus abstracts can be accessed here https://www.heacademy.ac.uk/training-events/stemconference2017.

As eSTEeM was well represented with attending and presenting delegates we tried to ensure that we split up and attended as many different sessions as possible. Here is a brief round-up of our general impressions of the conference followed by some feedback on five of the sessions we attended to give a flavour of the conference.

General impressions.

There was an interesting variety of presentations, especially on Day 2 and opportunities to mingle with contributors from other HEIs, meeting a couple of familiar faces from the previous year's HEA conference and making new connections. The networking opportunities of these types of events are very significant. It was also interesting to talk to various commercial enterprises, which sent representatives; we all enjoyed wearing the 3D goggles to experience an immersive lab environment demonstrated by a rep from LABSTER!
Several presentations illustrated a greater similarity between the circumstances, attitudes and behaviours of OU students and those at other HEIs than expected. It appears that all students are becoming time pressured, strategic and less engaged with their learning, use of feedback, and have similar requirements for mobile blended learning. This could present opportunities for us to share our existing best practice in teaching, learning and support with other HEIs.
As ever, always useful to pick up on the new buzz words; until the conference several of us didn't know what 'flipped classrooms' were or anything about 'flipped teaching'. Interesting given that our own supported open learning model was partially based on just this type of approach.

How are international STEM undergraduate students using digital technology to support their learning? Professor Rebecca Strachan Dr Alison Pickard
Ms Sanaa Aljabali, Northumbria University

Prof. R Strachan and colleagues from Northumbria University, presented a study of International STEM undergraduates use of technology to support their learning. Research questions focused on the type of technology being used, where it was used and what for. Results highlighted the daily use of laptops and phones, with less use of tablets and PC's, mostly off campus. Internet websites and Blackboard were used mostly to communicate with other students and to ask questions. Social media (Facebook) and YouTube were used by ~50% of students to supplement their learning. Cultural differences in the access and use of technology were the most surprising finding; Middle Eastern students were least likely and students from the USA and Europe were most likely to use social media to communicate with others for peer support. Discussion forums were universally not popular. All students had difficulty in assessing the quality of the accessed material and using it to support their learning. This resonates with personal experience of use of such media by our students. It raised the question whether international distance learning students at the OU also show similar cultural variation in their access and use of digital technology. Potentially visual learning from YouTube videos may help overcome language barriers?

How to develop and implement a success remote laboratory: Loughborough University Case study, Dr Sheryl Williams, Loughborough University

This described an interactive experiment on photovoltaic cells set up by for a M.Sc. in Renewable Energy Systems Technology. The experiment has been used by students around the globe but has encountered problems of insufficient bandwidth. Allocating slots and providing help for students in real-time if/when they hit a problem were discussed. There were real similarities with the issues we face offering at a distance experimentation and it would be good to establish some links here.

What do university students understand by academic success? What factors contribute to its attainment? , Dr Moria Cachia Dr Siobhan Lynam, Dr Rosemary Stock, University of West London

The presenters pointed out that students going from school to university needed to move from external to internal control of their learning. The findings of this project suggested that students did not necessarily feel that obtaining a degree was the only measure of success.   Students couched academic success in terms of gaining skills and knowledge, personal development, gaining a university qualification. Both internal (self-management, motivation, personal skills) and external (support, teaching provision) factors were important for success. Under self-management students need to take responsibility for their learning, deal with setbacks and be self-aware. Motivation included both short and long term goals. An interest in the subject and a willingness to learn were needed to achieve these. Personal skills needed included professionalism, communication and workload management. Support included that of family and social group. Under teaching provision, quality of teaching resources, staff availability and feedback were important.

Development of an Undergraduate Peer Mentoring Scheme for first year Biomedical sciences students, Dr Pauline Fitzgerald, Dr Donna Johnson, Leeds Beckett University

Excellent to see one of own Associate Lecturers at the conference (Dr Pauline Fitzgerald, SDK100) presenting findings from her project at Leeds Beckett University on mentoring first year undergraduates in Biomedical Sciences. This was an interesting project, now running for a second year. Early indications suggest that the provision of an experienced final year biomedical sciences students as a mentor was making real difference to student retention and success in year one. In addition the spin off benefits for the mentors in terms of skill development and confidence building suggests that this has links with the development of employability skills. Definitely a project that could be replicated in a distance-learning context – potentially another eSTEeM project in the making.

Engaging learners in a new STEM discipline using a MOOC, Dr Angela Davies Mr Kieran O'Malley, Miss Frances Hooley, The University of Manchester

This session described a project to develop and deliver a Masters level MOOC 'Clinical Bioinformatics: Unlocking Genomics in Healthcare' via FutureLearn. It was interesting to hear that the academics had found the practice of writing for web delivery incredibly demanding but essentially rewarding! The first presentation had gone well with a good number of participants and lively forum threads although some disappointments was expressed that most participants seemed to be not really their 'target audience'. Given our own links to FutureLearn it was interesting to gauge the views of involved academics from other HEIs.