



LEARNING AND TEACHING CONFERENCE

2021

The University of Tomorrow: A Virtual Conference - 5 February 2021

Poster Presentations

Library and Learning Services on student progression and degree attainment

De Montfort University is one of the most socially diverse university in the UK. This provides an opportunity to investigate whether and to what extent the use of library services has an impact on student progression and degree attainment. We combined the data on the use of library resources and study support services with demographic and academic characteristics of three cohorts of undergraduate full-time students. Usage of individual library resources and support services was analysed by the demographic and academic characteristics of the study population. It was found that Chinese international students have particularly low use of all library services. White students were found to make the most use of resources as were female students. Female students were found to be much more likely to use study support services than males. Black African students in particular were found to make relatively high use of study support services. We analysed the impact of library service on full-time undergraduate student progression and achievement was analysed controlling for demographic and academic factors. The results revealed a clear pattern associated with student progression and achievement. Students who have a low UCAS tariff on entry, have taken the non-A-level route to higher education and were admitted through clearing are much more likely to fail to complete their course. If these students do complete the course they are less likely to get a good degree. Less successful students use fewer library resources but make more use of study support services.

- Elmina Homapour (CEM) & Amanda Cook (LLS)

“Is it better this way?” Exploring the move from classroom-based teaching to online learning in Biological Psychology

Online delivery encourages academics to use digital platforms, ‘active’ learning and flipped classroom approaches to support student learning. It could be argued that this results in a delivery approach that is more closely aligned with the principles of UDL.

In changing times, it is pertinent to investigate what aspects of online learning are positive for students.

Given the diverse nature of our student population, online learning is likely to impact students differently depending on their demographic characteristics.

Participants will include Year 2 & 3 students who attended a coursework preparation seminar online, or face-to-face, respectively.

Questionnaires will be used to gather student demographic information on the following areas: Age, gender, home/international status, white/BAME, English 1st/2nd language, caring responsibilities and disability.

Questionnaires will assess how participants perceived their learning experience in the coursework preparation session.

Semi-structured interviews will be conducted to gain further insight into their perceived learning experience under each approach.

Attendance data and coursework marks will be gathered to investigate attendance and achievement under online/f2f approaches.

- Coursework marks may differ depending on the mode of coursework preparation seminar delivery
- Attendance at the coursework preparation seminars may be greater than attendance at f2f sessions
- Quantitative & qualitative data may indicate an overall preference for online or f2f learning
- Participant attitudes towards online and f2f learning may differ depending on demographic characteristics
- Questionnaire data and themes derived from semi-structured interviews may provide insight into better practice

Module curriculums could be reviewed with a view to guiding decisions about online/f2f delivery. The data gathered on the influence of student demographics on attitudes towards online/f2f delivery modes will provide some insight into what works best for different groups, and how we can best support students depending on their characteristics.

- Stephanie Cook (HLS)

Innovative Teaching Using Simulations for Biomedical Science Students

University of tomorrow has to meet the challenge of teaching individually, in real time, and overcoming the boundaries of buildings, distances and even risks of global pandemics. *Simulations* create opportunities of such innovative teaching and learning.

Usually our students would conduct small laboratory experiments for our basic Immunology module. This has become impossible this year due to COVID-19 risks for students and staff. Therefore, I have chosen *Learning Science Chromatography simulations* to teach about molecule separation this year.

Goals:

- To safely teach laboratory techniques online during COVID-19 pandemic;
- To teach accommodating learning differences;
- To use elements of online gaming;
- To simulate real life-like laboratory situations and enable problem-based learning online.

Steps Taken:

I combined Learning Science simulations with synchronous and asynchronous teaching and other tools for online learning (Blackboard VLE, YouTube videos, live presentation, ppt and Panopto files as well as Blackboard tool OneClass Notebook). In addition, I created trouble-shooting tasks, challenging the students to apply their knowledge in problem-based real-life situations.

Impact:

- Simulations enabled **to experiment and learn online, providing a safe learning environment** during COVID-19 pandemic.
- **Simulations also supported learning differences** as all students could spend as much time as individually needed.
- Simulations **allowed to teach more laboratory techniques**, i.e. gel filtration and ion-exchange column methods.
- A class of **295 students have been taught laboratory skills** which they could apply in future research.
- **The game element** used in teaching generated **high student engagement** – 802 hits recorded by Blackboard report tool during the session.
- **Examples of student feedback:**
 - *Really liked the layout and picture motions provided to explain the process. Easy to follow step by step.*
 - *“The simulations are great - I had to fill-in the column with the buffer really carefully!”*

- Ruta Furmonaviciene (HLS)

Using creative and contemplative pedagogy to promote learning efficacy and wellbeing for first-year, undergraduate students (AIP)

"I learnt how to approach my learning in new ways" 1st year student.

This poster presents findings from action research supported by an Academic Innovation Project funding during the 2019/20 academic year.

Students transitioning into higher education face a myriad of personal and educational challenges as they adjust to new ways of studying in unfamiliar environments. We examine the potential for helping students adapt by providing opportunities for interaction within the context of their courses through two distinct workshops delivered to first-year, undergraduate students at DMU. The 'LEGO Serious Play' and 'Reframing' workshops allowed students to reflect on their educational journeys and the challenges they faced by providing activities which encouraged discussion and creative thinking.

Student feedback in the form of post-workshop surveys and focus groups suggested the workshops were particularly effective for alleviating student concerns and encouraging new and alternative ways of thinking about and approaching their academic work. We present the findings and demonstrate the potential benefits for embedding workshops of this nature into first-year course curricula: both student and staff perspectives will be provided.

- Julia Reeve (LLS) and Ruth Jindal (ADH)

#DMUFlight: Transforming Learning in Aeronautical Engineering Curriculum (AIP)

In 2019-20, DMU's School of Engineering launched a new aeronautical program with curriculum is set in a real-world engineering context of a complete product life cycle, i.e., conceptualisation, designing, implementation and operating aerospace vehicles. To achieve this experiential learning for students, we co-created an Academic Innovation project called #DMUFlight Club to establish 'design-build' experiences. We have integrated these 'design-build' experience throughout the program using confluent of Problem Based Learning (PBL), Universal Design for Learning (UDL) and DMUReplay.

At the end of this academic innovation project, #DMUFlight Club convened a student team with a range of 'design-build' experiences using additive manufacturing, fabrication of radio-controlled airplane and virtual flight simulator training. This led to the student team to participate in this year "The Unmanned Aircraft Systems Challenge (UAS Challenge)" competition. This UAS Challenge event is organised by the IMECH for the under-graduate and post-graduate student team across the world. This opportunity certainly will increase an employment possibility for the DMU engineering students within aerospace industries as well as to develop innovative aerospace technology.

In this poster presentation, we will showcase a range of activities that led to the development of student team to participate in the UAS Challenge where our students' team will be competing against the team across the globe.

- Karthikeyan Kandan, Farukh Farukh, Hobina Rajakaruna (all from CEM)

The Virtual Crime Scene and Forensic Laboratory (AIP)

Within the undergraduate forensic science degree at DMU, students are engaged with all aspects of the Criminal Justice System (from the crime scene, to the forensic laboratory, to court). The physical facilities on our campus are impressive, however, with increasing cohort sizes, the academic team decided to incorporate novel active learning approaches for students to interact with, to further broaden and diversify their learning experiences. By utilising 360° video footage and images, the team have created bespoke virtual learning resources via Adobe Captivate. Additionally, the input from CELT and the technician team via the Technician Commitment, has further evidenced our holistic approach to educational resource development. This enhanced capability was positively welcomed at the course accreditation in 2019 by the Chartered Society of Forensic Sciences. Furthermore, this has been an exciting

opportunity for colleagues within the forensic science team, in conjunction with colleagues from the School of Pharmacy and the Faculty of Health and Life Sciences. Resources have been designed for students to access on Blackboard, such is the system compatibility with this new software. Despite the challenges and uncertainty of the Covid-19 lockdown, which prevented us from sharing these with our students and assessing their responses in focus groups, we are now incorporating these into the 2020-21 curriculum. Evaluative feedback will form a dual purpose, in that it will be used to feedforward for future resource development and will assist colleagues in their PGCap action research. This project is of paramount importance in enabling us to ensure forensic science at DMU is at the forefront of pedagogic advancement.

- Leisa Nichols-Drew, Alexandra Goodger, Gemma Doorne, Chloe Swinfield, Kim Fisher, Sarah Hall, Emma Johnston, Richard Brawn, Kevin Farrugia, Angela O'Sullivan (all from HLS), Rob Weale (LLS) and Sarah De'Ath (CEM)

Are students actively engaged with active learning? Student engagement with and perceptions of active learning strategies (AIP)

For students to be actively involved in the learning process they must do more than simply listen to what they are being taught (Chickering and Gamson, 1987); they must engage in higher-order thinking tasks as analysis, synthesis, and evaluation.

The newly accredited MPharm programme which commenced in October 2018 was designed to make active learning methods integral, utilising the "flipped classroom" approach wherever possible. Teaching strategies were utilised promoting a flipped classroom approach, with students undertaking activities outside of timetabled teaching; facilitating students becoming more active participants and taking personal responsibility for learning.

A focus group of Year 2 students was held to explore their perceptions and experiences of both in-classroom active learning activities and independent activities undertaken outside of the classroom setting.

Student experiences of pre-work activities was generally positive, with them favouring YouTube clips or short DMUReplay recordings over reading, as these actively engaged them with the topic. Students stated that these activities also prepared them well for individual lecturer's styles of teaching.

The key barrier to effective engagement with pre-work activities was the time taken to complete them and struggles to manage competing priorities.

In-classroom active learning strategies were positively received, although students stated that utilisation of these was not universal within the programme team. Students enjoyed knowledge-check quizzes, utilising platforms such as Kahoot and Mentimeter. Engagement with discussions and debates was more limited.

Based on this feedback, a structured approach to organising pre-work activities on Blackboard has been introduced to help students prioritise workload on a weekly basis. Staff have been encouraged to limit the length of recordings and to utilise knowledge-check quizzes. An ongoing feedback dialogue has been established through regular Year group MTeams meetings to identify barriers to effective student engagement on a timely basis.

Chickering, Arthur W., and Zelda F. Gamson. March 1987. "Seven Principles for Good Practice." AAHE Bulletin 39: 3-7. ED 282 491. 6 pp. MF-01; PC-01.

- Nicola Ward and Helen Root (HLS)

DMU Replay – Beyond lecture capture (AIP)

This poster will showcase the findings from the 2019 DMU Replay Beyond lecture capture AIP funded research activities.

- Ian Pettit, Neil Stokes (LLS) and Eirini Kalaitzopoulou (CEM)

KEY:

AIP	Academic Innovation Project
ADH	Arts, Design and Humanities
BAL	Business and Law
CEM	Computing, Engineering and Media
HLS	Health and Life Sciences
LLS	Library and Learning Services