Advance HE STEM Conference 2021
Rethinking STEM Higher Education

28 January 2021

Live session abstracts

Contents

Session 1, 11:50 – 12:50
Session 1.1: Escaping induction: How I used an online escape room to introduce our VLE and reconnect our students
Alun King, University of South Wales
Re-Connecting / Workshop

How do we get our students communicating and building communities when their first interactions are online? In welcoming students to our university this year, I tackled a traditional issue with a modern solution. To demonstrate my take on solving this problem, this session will throw you in to an escape room environment with other delegates with whom you will need to work to solve a series of puzzles! By participating in this session you will experience how an escape room activity can help you and your course team (re)connect with your students.

Session 1.2: Managing and fulfilling higher education students' expectations and needs
Dr Soumyadeb Chowdhury, Toulouse Business School, Dr Sian Joel-Edgar and Dr Ahmad Beltagui, Aston Business School
Re-Connecting / Interactive

The aim of this session is to demonstrate the purposeful use of MIRO boards, Answer garden and KAHOOT for increasing the engagement (i.e. virtual participation, motivation and facilitating discussion), and collaborative attitude among the students in both online classrooms and hybrid teaching environment (i.e. students attending a session both face-face and remotely). The session will present a DECIDE framework to explore the effectiveness and viability of software tools for designing student learning activities in and outside the learning sessions. The aim is to explore these tools and engagement medium from the perspective of the students attending virtual sessions. By participating in this session you will experience in a live virtual environment, how these three tools can be integrated within the virtual learning environment to enhance student experience during learning sessions, and reflect on few recommendations to consider before deploying these tools.

Session 1.3: Remote and blended Practicals: A multidisciplinary approach
Dr Adam Funnell, University of Sheffield
Rethinking practice-based education / Workshop

Learn how taking a structured overview of practical learning outcomes, across disciplines, enables the delivery of practical skills teaching in Engineering, despite physical distancing and remote learners. The workshop will show how to construct a framework of learning outcomes for practical engineering, and how such a framework can be used to choose remote and blended practical teaching tactics. Attendees will consider why they teach practical skills, and how their activity learning outcomes develop students into practical engineers. We show how different categories of activity learning outcomes are best delivered in various online or blended methods, to form a coherent programme.

Session 2, 14:40 – 15:40
Session 2.1: Beyond Labz: Enabling students to learn science by doing science
Dr Brian Woodfield and Heather Myler, Beyond Labz
Rethinking practice-based education / Workshop

The onset of COVID-19 and the resulting social distancing requirements have restricted student access to the physical labs that are critical to the student experience for STEM disciplines. Join the product and academic experts from Beyond Labz for a live workshop session and explore how a student-led virtual lab environment can enhance and, when required, replace physical labs. Students can learn, make mistakes (safely) and most importantly learn to think for themselves freed from a physical labs' constraints of time, safety and cost.

Session 2.2: How to deliver biomedical practical skills through novel virtual laboratories
Dr Antonio Peña-Fernández, De Montfort University
Rethinking practice-based education / Workshop

Future practitioners will need to gain a strong scientific background including knowledge of biomedical laboratory techniques/equipment for translational medicine. However, Medical Education is facing challenges to appropriately deliver this type of overall education including lack of access to new laboratory techniques by students due to financial or social distancing restrictions. This workshop will show how to use our freely available Virtual Laboratory, which we have shown to assist students from diverse backgrounds to acquire basic biomedical laboratory skills. Attendees will be able to adopt our Virtual Laboratory in a myriad of effective teaching and learning activities.

Session 2.3: The Capstone Experience: Preparing students for the post-COVID 21st Century workplace
Dr Dave Lewis, University of Leeds, Dr Sue Jones, York St John University and Michelle Payne, University of Sunderland
Rethinking practice-based education / Interactive

COVID has changed the workplace forever. Countries that emerge best from the global economic slump will be those that are innovative and forward thinking, with adaptable and appropriately skilled workforces. However, universities need to adopt contemporary educational tools, including a move away from the traditional undergraduate research projects to the broader US-style Capstone experience: a focus on personal and professional development rather than research experience. In this workshop, participants will build on work in the Biosciences to co-create new formats of interdisciplinary capstone experience and linked "How to do it" guides, that enable students to develop the skills and attributes they need to excel in what will be an extremely challenging post-COVID 21st Century workplace. basic biomedical laboratory skills. Attendees will be able to adopt our Virtual Laboratory in a myriad of effective teaching and learning activities.