

Q&A



Innovation and Digitalisation in Engineering Education

25th March 2021

Question 1

asked by **Jibril Bala**

“Hello. My Question is for Saber Darmoul. Covid-19 has resulted in universities having limited resources to deliver engineering practical sessions for students. We have restrictions in space, the number of students we can bring into the labs and limited equipment. What digital technologies will do recommend to handle such unprecedented situations?”

Answer:

“nice question. this is the kind of questions that make me believe there is a room for a new research discipline called education engineering for engineering education !! simulation tools can provide a partial answer. cloud and digital twin technologies can help solve other aspects, related to knowledge and equipment sharing. there is room for more innovation to address this issue. mutualizing physical and digital resources is necessary for that. frugal innovation is also an answer.”

Question 2

asked by **Christian Bolu**

“How do you teach online Machine shop practice with Lathes, CNC facilities? What about thermofluids laboratories? Can we develop digital connectivities to operate the equipment?”

Answers:

“There is quite a lot of research into the area of mixed realities that allow a combination of the real with the virtual world. For example people online controlling lab-based equipment.”

“Thx for the question. Right now we are relying on simulation to gain time, and to prepare the experiments before running them. In the near future, Cloud and Digital Twin technologies will enable new solutions to this problem. Remote control of critical infrastructure is not that easy, especially for students who are making their first steps.”

Question 3

asked by Simiyu Sitati

“To Saber Darmoul: Other than the technical skills, how do we develop the social part of the engineering students in the absence of physical interaction?”

Answer:

“Nice question !! Our Soft skills coaches and colleagues are mixing the digital tools to ensure continuity of service. So they rely on Visio Conferencing to get in touch, They rely on deferred messages, using voice recordings, and they are organizing digital social events. The questions points directly to my conviction that education cannot be totally digital. Physical contact is still essential.”

Question 4

asked by Christian Bolu

“Can we create a Pan-African collaborative research team working with GEDC to develop digital connectivities to our laboratories and machine shops?”

Answer:

“Great and Nice question !!! I have a European funded ERASMUS+ Capacity Building project where this is the issue !! How to build a digital twin that connects to equipment distributed on 4 institutions in 2 North African countries to enable these partners access to equipment and data remotely !! digital and cloud technologies can provide a solution !!”

Question 5

asked by Asta Daunorienė

“Could you share your experience of the recognition process used at the university, based on the experience of Coursera courses as students have acquired skills and competencies?”

Answer:

“Some universities use Coursera courses for credit - allocating a certain number of credits per course successfully completed. Others use Coursera for the content but assess with their own assessments.”

Question 6

asked by Tom McKune

“Most engineering programmes fall under an international accord (Washington, Sydney or Dublin) and are thus required to be measured in terms of graduate attribute competencies - how has this managed under the Covid scenario?”

Answer:

“Well, in my institution at least, all courses are evaluated based on skills/competencies. Social distancing made us find innovative ways to adapt content and interaction to remote learning. so by these innovations, students are enabled to deliver, and the evaluation/assessment is still based on skills/competencies”