



Practices on the Design and Plan Learning Activities

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Abstract

This paper presents practices and guidelines for the design and plan learning activities. Education organization closures due to COVID-19 have brought significant disruptions to education across the world. Emerging evidence from some of the region's highest-income countries indicate that the pandemic is giving rise to learning losses and increases in inequality. Education for Sustainable Development (ESD) equips learners across all disciplines with the knowledge, skills, attributes and values required to pursue sustainable visions of the future. Using active pedagogies learners are supported in addressing complex or 'wicked problems' and identifying how they can contribute to solutions that address environmental integrity, social justice and economic prosperity. The use of technology to maximise the student learning experience is a vibrant area of interest across all tiers of global education. Technology enhanced learning (TEL) is often used as a synonym for e-learning but can also be used to refer to technology enhanced classrooms and learning *with* technology, rather than just through technology .

Keywords: Covid-19, Education, Learning, Activities.

Design and plan learning activities and programs of study

Education organization closures due to COVID-19 have brought significant disruptions to education across the world. Emerging evidence from some of the region's highest-income countries indicate that the pandemic is giving rise to learning losses and increases in inequality. Education for Sustainable Development (ESD) equips learners across all disciplines with the knowledge, skills, attributes and values required to pursue sustainable visions of the future (1, 2, 3). Module leaders' rules at the college are to design, develop and follow up the study plans, the module descriptions, learning mode, contents, and marking scheme of the programme' modules. They should be very keen to benchmark exercise with other national and international institutes, Accordingly the program can be validated and approved by the educational institute and the international partner. Module leaders need to design, plan and provide the details of assessment methods for each module including details—elements, weightings, sequence of elements, and final component (3, 4). The assessments are either formative assessment or/and summative assessment. Course director should follow up to ensure that all the academic staff in the programme are offering the students a formative assessment with different opportunities in the form of seminar questions and/or mock assessments as appropriate to the form of assessment. While in the summative assessment, a coursework, mid-point exam and final exam have been introduced with their weightages considering the validation document. Module leaders should provide a guide to the learning sessions for each module including the topics distribution over the number of lectures per weeks for the three semesters. Therefore, the proposed designed and planned learning activities could receive a well recognition and positive feedback from the external reviewers indicating the high quality of my outputs and how it assists the knowledge and skills of learners (4, 5).

Effect of COVID-19 on Design and Plan Learning Activities

In this section cases of redesigning the engineering modules are presented. As a result of the closure of the university due to coronavirus disease 2019 (COVID-19), module leaders have had the opportunity to redesign some civil engineering modules to be taken online such as Structural Mechanics and Soil Mechanics, which are practical ones and heavily depend on conducting experiments in the laboratory or practice during construction site-visits. Online modules were redesigned and created to provide uniform delivery of instructional content to introduce students to common engineering-practice skills in the laboratory or fields. Module leaders have been able to redesign and plan the learning activates to achieve the modules' aims and learning outcomes.

Particularly, they provided an alternative proposal to deliver the practical components for each module (6, 7). They have proposed a variety of recommendations for the practical components to be implemented. Professional video recording was recommended for the experiments. Other recommendations were lecturers provide empirical data, and when it is possible consider a blended computer modelling, and/or, an analytical investigation. The students were able to write the technical reports on the experiments (8, 9). The proposed plans received a well recognition and positive feedback from the external examiner with a positive feedback. The students have completed their practical modules, acquired and developed practical skills.

On the other hand, Head of Training and Internship Unit has been able to develop the annual internship plan for the prospective students, identifying organizations and opportunities for internship. Due to Covid-19 pandemic, an alternative plan has been proposed to practice virtually the internship, mainly considering a case study for previous valuable projects. The plan has been approved by the university with a positive feedback from the students and external examiner later on.

Teach and Support Learning Activities

Engineering professors with well experience who are teaching mix of practical and theoretical modules, they always consider teaching as a dynamic process based mainly on developing an active learner who learn by doing [10]. This helps improve their retention of subjects and expand their set of skills by applying their new knowledge to different problems. One of the goals of the process is to support the students in bridging the knowledge between information learnt in different modules for deeper interpretation of the facts and to strengthen the sense of relevance. They can impart the understanding that the entire engineering curriculum is a continuous integrated spectrum, not isolated entities of information.

An active teacher always encourages students to work in small groups to solve/provide multiple solutions to problems. In order to keep lecture material relevant to students, module leader can immediately follow the presentation of lecture objectives and activities with real-life examples or case studies. For example, in Soil Mechanics module, the lab experiments can be used to show the students the practical application of the design equations and theory to predict the experiments results on soil samples. This helped the students to maintain the context of the material they are learning.

Based on the nature of the module, instructors either give regular assignments, laboratory assignments, examinations, or mix of them. The assignments may include a mix of problems: routine problems to build the students confidence and difficult problems to challenge even the brightest based on the students' evaluation reports at the end of each term, instructors should regularly update the module either by adding or updating topics, core books, or type of assessments based on the previous year students' evaluation report and grades. For instance, Structural Analysis Module as an example, in the second time, a real prototype wood beam can be used to load it manually and show the students the bending phenomena. The students will be able to understand the phenomena and then they were able to follow the theory of the design. Module leaders should be very keen on using the university official platform and encourage all the students to do the same through uploading all the required materials, in addition, assessments are uploaded and assessed using the Turnitin. So the students can easily access the platform anytime from anywhere and can easily find all what is related to their modules and my feedback. By the end of each module, students used Moodle to submit their evaluation report. Also, in general, I am using different tools and methodologies of teaching. For example: Traditional white board and smart tablet to explain theoretical principles and pure mathematics; PowerPoint presentations to present colored photos short video clips using different effects and movements, as well as specialized software such as Revit and AutoCAD based on the nature of the module and its aims.

Challenges in Teaching due to the COVID-19 Pandemic

One of the major challenges the universities are facing these days is the suddenly transformation to online teaching due to the COVID-19 pandemic, the situation is even worse when it comes to engineering where most of the modules are practical ones. Module leaders had to deal with this situation as a course director and module leader. Some modules such as Soil Mechanics which according to their study plan, the students must perform some experiments in the labs therefore the technique of 3D recording videos can be used. While the technician is doing the experiments in the laboratory. The students are virtually able to watch the experiments. They can interact directly with the module leaders and ask all the questions needed to understand all the procedures of the experiments. After, instructors can have sent all the experimental results, so the students can prepare the technical reports. Also, the recorded videos can be placed on the Moodle for the absent students. The students can complete their practical modules,

acquired and developed practical skills such that they were able to give technical presentation on the experiments. Also, the intended learning outcomes of the modules were implemented considering the required practical components.

Conclusions

This paper presents practices and guidelines for the design and plan learning activities. Education organization closures due to COVID-19 have brought significant disruptions to education across the world. Emerging evidence from some of the region's highest-income countries indicate that the pandemic is giving rise to learning losses and increases in inequality. Several case studies have been presented that can be guidelines for module leaders and instructors, teach and support learning activities, and design and plan learning activities.

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