KKEJ BULLETIN

KKEJ NEW RESEARCH CLUSTERS

Special topic:
Designing Course for Online Learning

welcome

COLLEGE OF ENGINEERING

BULLETIN TEAM

Contents

Designing Course for Online Learning -
Sharing Experience

Dr. Dwi Pebrianti, Electrical Engineering, College of Engineering
Email: dwipebrianti@ump.edu.my

We are now in a state of Movement Control Order (MCO) 3.0. This marks the third semesters of online teaching and learning. The question is, are we lecturers adapted already with this condition? Yet, are we enjoying giving lecture and assess our students in this new era of teaching and learning?

It is still fresh in our memory that all the academicians must shift from traditional face-to-face teaching and learning classes to online since the first MCO applied in Malaysia. During that time, lecturers were forced to provide learning materials, activities and assessments in an emergency a remote state. Lecturers needed time to adapt, as well as the students. All changes made every one to look for their own survival skills. This somehow has effected the quality of today's education.

During the Board of Examinations (BOE) meeting, there were some problems highlighted from the current practice of online teaching and learning. They are two common problems that are rised during the meeting. First is the poor performance of students which is mainly caused by the poor internet quality. The second is, the fact that a high number of students performed well than the prevouse normal conditions which makes it questionable due to the integrity problem that seems difficult to control. The first problem can be solved by designing the instructional for the course so that it can be accessed anytime anywhere even though using poor internet connection. While the second problem can be solved by designing the assessment using random questions which will be generated uniquely for each student. In this article, the author would like to share about the practice that have been implemented during these two and half semesters of online teaching and learning during the pandemic.

Designing Online Course

The first step in designing online course is to divide the Student Learning Time (SLT) accurately. The formula used is 40:40:20, where the first 40% is for learning material, the second 40% is for learning activity and lastly, 20% is for learning assessment. For example, for 1 credit hour, such as BEE2331 Engineering Computer Literacy, it will have 16 hours of learning materials, 16 hours of learning activities and 8 hours of learning assessment. The SLT for this subject is listed in Table. 1.

The next step is to design the delivery by using any Learning Management System (LMS) such as Moodle, Google Classroom, SkyPrep, Tovuti, Prosperity LMS, etc. The contents for the LMS itself can be created by using only text which is commonly seen in a web page or video tutorials created using YouTube, virtual whiteboard, Screencast-O-Matic, Camtasia, etc. All of the activities inside the system can be marked as done by student, manually or automatically. The information in red box refers to the total sources in each week and also the total number of activities that have been done by students. By doing so, students can track their own activities to complete the subject, regardless they join the synchronous online class or not.

Designing Online Assessment

Online assessment can be said to be the hardest part for the online teaching and learning process, mainly when dealing with integrity problems. One way to maintain the integrity is by generating unique questions for students in addition to open ended questions.

Figure 1 shows the example of Final Examination questions Setup for BEE3313 Principle of Control System using KALAM (Moodle). Lecturers constructed 3 different sets of questions, where each set has 5 questions. Then each question inside the set is put into a specific category. By doing so, instead of only 3 sets of questions, system will generate 243 different set of questions specific and uniquely for each student.

Lastly, online teaching and learning is not easy to be implemented. Specific and special system, infrastructure and also equipment are needed, especially for the assessment. However, we can try to optimize current system, infrastructure and also equipment to at least maximize the course delivery process to the students and also minimize the integrity problem during the assessments.

Table 1. Student Learning Time (SLT) of BEE2331 Engineering Computer Literacy

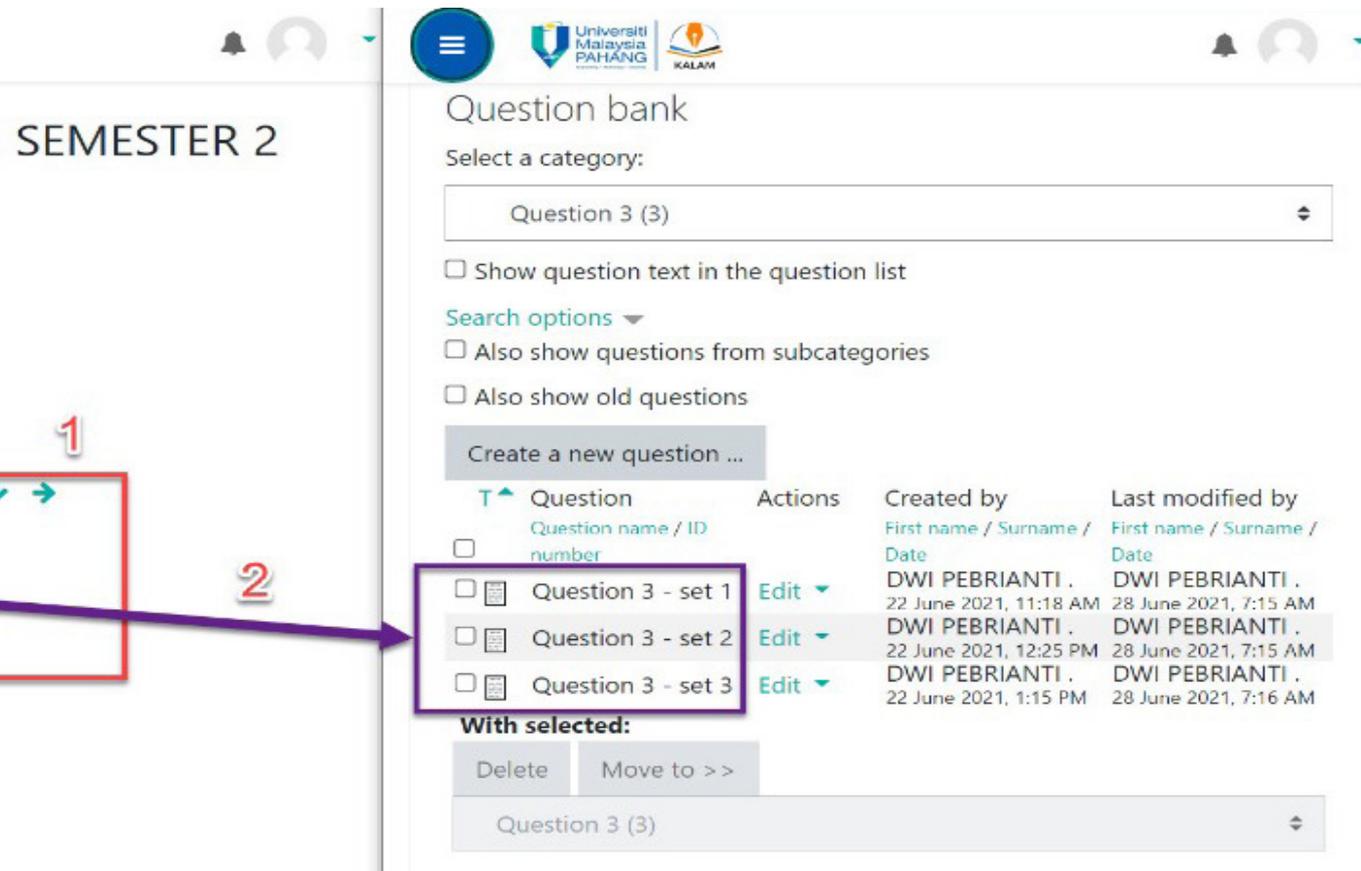| Week	Topic	Online learning	Online attribute	Online assessment	Online Self LEarning	Total SLT
1	Introduction	1				1
2	MS Word Part 1	1	1		1	3
3	MS Word Part 2	1	1	0.5	1	3.5
4	Reference Manager	1	2	0.5	2	5.5
5	Assignment			1.5		1.5
6	MS Excel Basic Part 1	1			1	2
7	MS Excel Basic Part 2	1	1			2
8	MS Excel Intermediate Part 1	1			1	2
9	MS Excel Intermediate Part 2	1	1	0.5	1	3.5
10	MS Power Point Part 1	1	1		1	3
11	MS Power Point Part 2	1		0.5	2	3.5
12	Collaborative Tools	2	1	0.5	2	5.5
13	Project			2		2
14	Project			2		2

Figure 1 Examination set up