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FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT

CASE STUDY 14 - SUMMARY

NAME
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LEVEL
Honours

COURSE
CHE4067 - Heterogeneous Catalysis

CATEGORY
Mitigation strategies

FACULTY
Engineering and the Built Environment

One sentence summary

Prior to ERT, students practiced problems and answers in tutorials and had written class tests and exams. All assessments were moved online using MCQ and open questions where students would enter value numbers. Integrity was a concern. In future, we will build up question pools for the MCQs.

Context

The Honours year of the Chemical Engineering programme (CHE4067) has electives which includes a specialisation course in heterogeneous catalysis. In 2020, we had 20 students enrolled for this elective. The elective draws students who graduated from other universities, meaning there is a big range in starting knowledge, as students have exited with different levels. The diversity of student knowledge makes it difficult to know how to pitch lectures, what we can assume as prior knowledge, and what we have to recap.

In the elective, students get lectures on theory, and in tutorials there are example questions and example problems.

Purpose:

Our assessment purpose is quite broad. We require students to learn some factual knowledge, how to perform calculations, and then they have to gauge how they would go about applying the knowledge to solve the problems. We also assess deeper understanding and conceptual thinking about the content.

Process

We went into lockdown just before the first class test. We adapted existing assessments and created Vula quizzes for both class tests. We used both MCQ and open questions where students would enter value numbers. Before attending a CILT webinar, I just had never considered doing assessment via Vula in this way. For the written exam, we posted a PDF as a Vula Assignment. The marks feel fairly representative. Some lecturers adapted their questions when they thought the students were struggling.

Outcomes/ Lessons learned

We set up many of the assessments effectively using Vula tests and quizzes, but we didn't have time to manage the integrity aspect of the assessment adequately. For next year, I'm planning to work with question pools, so that students get different questions, and also in different order. We do want to make that process more secure to increase confidence in that process; but we don't really want to necessarily change how students demonstrate competence. Over the whole course, we did have a few dropouts, especially at the first part of lockdown, because students either had non-existent internet access, or they were in a non-conducive learning environment.

Recommendation

Make use of the question pool options in tests and quizzes to increase the integrity aspects of the online assessments. Ensuring students have good internet access is a prerequisite for administering assessments via online tests/ exams. Breaking up the content into smaller chunks and then having students answer one or two quiz questions before continuing may increase student engagement and success.