



BEING A NEW ENGINEERING TEACHER...

Assessment is probably not a new concept for new teaching staff at the university, as most of them would have gone through heavy testing and examination procedures before they can successfully become teachers. However, many teachers who are new to university teaching are not aware of the highly significant impacts that assessment can have on the quality of student learning, even though they went through a similar pattern of assessment previously. Assessment has been commonly and wrongly viewed as merely the final outcome measure of students' skills and knowledge at the end of a course, providing an indication of students' level of competency – quite simply “a number to the name”. But in reality, assessment reflects the overall effectiveness of teaching and learning. It guide students for appropriate approaches to learning, and guide teachers for appropriate teaching styles and activities- It is also an indicator for university quality assurance. In fact, assessment is the central element in the overall educational process of teaching and learning in higher education. However, teachers often treat the design of assessment as an add-on component to the curriculum design. Little or no thoughts are dedicated to the design of the assessment. Usually, only traditional summative assessments such as examination and essay type of assessments are employed.

For students, assessment basically defines the direction of their learning as it drives student learning. Consequently, it determines students' approach to study, and therefore indirectly determines the quality of their learning. Thus, teachers can make use of assessment as a strategic tool to direct their students to the appropriate studying approach in order to achieve the desired learning outcomes in their courses. Also, teachers always need to keep in mind the purpose of assessing when designing the assessment. Assessment should exhibit clear alignments with the intended learning outcomes, as well as the teaching and learning activities, which are considered altogether as the three core elements in the outcomes based approach of curriculum design in higher education. This is true not just for tests, assignments and exams, but also for engineering laboratory work exercises and projects. **Thus, when designing the course, the three core elements – the Intended Learning Outcomes, the Teaching and Learning Activities and the Assessment – should be aligned constructively and designed interdependently and simultaneously.**

Good assessment practice should set clear expectations and give a reasonable workload (which does not force students into the mode of rote learning and regurgitation of memorized materials without genuine and deep understanding). Over-assessing is time-consuming for both teachers and students and may even have a counter-productive effect. This is particularly true for engineering, when the contact hours are quite high. Bear in mind the question: “When do the students have time to study and to conduct the assessment?”

On one hand, assessment should place attention to outcomes

and achievements of students (acting as a quality assurance mechanism to protect academic standards in the “summative” sense), and also emphasize the learning experiences of students that can lead to the desired learning outcomes (ongoing development of skills and competency of students in the “formative” sense).

Assessment should be accompanied by timely and useful explanatory feedback that recognize students' achievement and at the same time provide appropriate suggestions for improvement.

- **Clear expectations** – Assessment works best when its purposes and expectations are clearly explained to students. Students can study efficiently when they have a clear idea of a particular goal. It is important that the assessment methods are aligned with the course learning outcomes and teaching activities.
- **Transparency** – Transparency in the marking of assessment is important so that students understand how their grades are determined.
- **Validity** – Assessment should reliably measures the expected learning outcomes it is intended to measure, especially on the higher-order cognitive skills that students have acquired.
- **Discourages Rote-Learning** - If the assessment employed encourages rote learning, students will perceive that rote learning is what is valued by the teacher. As our knowledge about the world is expanding at an extremely rapid rate, it is impossible to constantly keep every piece of knowledge in our memory for instant retrieval. Assessment should therefore put greater emphasis on how students can identify and access relevant information when required, rather than their ability of keeping everything in the memory.
- **Avoids Plagiarism** - With carefully designed assessment, the likelihood of committing plagiarism can be reduced. Teachers can adopt assessment that require students to incorporate their original perspectives and creativity in their answers, such as personal reflection on social issues or writing critiques of journal articles, instead of adopting the kind of assessment that encourage students to recite the perspectives of the others, such as asking for a description or summary of the theories of a particular theorist.
- **Variety** – A variety of assessment methods in a course allows a wider range of learning outcomes to be assessed. Students will learn a wider range of knowledge and skills, and that will also keep them engaged with greater interest and motivation. Assessment should involve elements of both subject-specific knowledge and generic skills. As in nowadays, generic skills such as interpersonal and presentation skills, communication, and group work skills are increasingly being recognized and valued by employers, it is important to develop new assessment methods to validly assess these generic skills, which cannot be properly done by traditional assessment methods such as essays and exams.

If you want to
make a **DIFFERENCE** in engineering education,
contact us, join us and network with us
through **E3R Asia!**

We hope to foster a community that advocate an interest in enhancing teaching and learning in engineering education not only within the Asia-Pacific region but also on a global scale. We hope this platform can serve the purpose of gathering engineering educational scholars and teachers across the globe to share their innovative pedagogies and insights in the teaching of engineering and express the challenges they have encountered in teaching of engineering with their academic peers. Moreover, this platform hopes to encourage all to recognize the importance of engineering education.

We would like to invite you to join E3R and take part in this community of practice and exchange knowledge.

If you are interested to join this community, please do not hesitate to contact Dr. Cecilia Chan at cecilia.chan@cetl.hku.hk. We look forward to hearing from you.

In addition, we are currently planning to issue newsletter that discuss about the different engineering education issues, explore new trends and innovative pedagogies and assessment, and provide useful tips to both teachers and students, if you would like to keep up to date on these matters, please email us with your contact.

VISIT OUR WEBSITE!

Our website, E3R (<http://e3r.cetl.hku.hk/>), is a one-stop resource for teaching and learning in engineering education.

You can gain access to:

- Both conceptual and practical information related to teaching and learning in engineering education.
- Research groups and examples of research projects related to engineering education.
- Updated news and events, including the latest information on both local and international workshops and conferences in engineering education.
- Regularly updated case examples of good teaching, assessment and feedback practices collected from engineering educators worldwide.
- A discussion platform for you to exchange ideas in both engineering education research and teaching.

You can also follow us on Twitter: https://twitter.com/e3r_asia

Web Reference and Resources

- Assessment Resources@HKU. Retrieved from <http://ar.cetl.hku.hk/index.php>
- Centre for the Study of Higher Education, Australian Universities Teaching Committee. (2002). Tips for new staff: Basic advice for people new to university teaching. Retrieved from <http://www.cshe.unimelb.edu.au/assessinglearning/07/index.html>
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