

Qualitative Evaluation

1. Preparation for, organization and effectiveness of the classroom activity in achieving the intended learning outcomes.

A/Prof Hagen was very well prepared for his lecture and employed multiple techniques and media in order to make the lecture highly effective. I believe the intended learning outcomes were delivered at their best.

The material was well prepared and organized to reinforce the learning objectives. This included curation of material from various sources, including research papers that were aimed at illustrating concepts and to stimulate thinking about cell biological processes. In addition, in-class formative quizzes were used to reinforce the learning points, and in-class summative quizzes were used to test their understanding.

2. Quality of faculty member's exposition and delivery.

A/Prof. Hagen delivered the content in a very impressive and modern way. He actively guided the students through the lecture which was logically extremely well structured employing different technologies, asking questions, and giving real life examples and referring to recent publications.

Prof Thilo was a highly engaging speaker, and his passion and enthusiasm for the subject helped in engaging the students' interest in the subject. He was able to connect to the students with relevant anecdotes and often walked around the LT to ask questions.

3. Faculty member's knowledge of the subject matter in relation to the content and intended learning outcomes of the module.

The faculty member had an excellent knowledge of the subject matter which became obvious when explaining the content and when responding to student questions.

He is a highly accomplished molecular and cell biologist, and his knowledge of the matter was evident in his content as well as his ability to answer queries from the students. In the class, he was able to distill concepts and use topical examples from research papers as well as current news to make the learning more authentic, showing how a line of reasoning was used in research to come to a conclusion.

4. Degree of student engagement facilitated by the faculty member within the constraints of the class size.

A/Prof. Hagen permanently, actively and successfully engaged the students. That was particularly difficult considering the large class size. Therefore he repeatedly walked into the audience and directly approached students with questions. In addition, he used software tools such as polleverywhere to ask questions, asked students to search in databases such as the proteinatlas, and performed a quiz using Luminus. Though the students were rather shy in verbally answering questions, they appeared to be highly engaged during the question and answer sessions where they actively discussed with their classmates and where about 80 to 90 answers were recorded.

The students were highly engaged, a testament of Prof Thilo's dynamic delivery as well as judicious use of interactive polls during class. By walking around the LT, he was able to ask questions to engage students with questions, while using scaffolding hints to guide them towards possible answers.

5. Faculty member's ability to show the relevance of the day's topic, its relation to other topics within or outside of the module.

The relevance of the lecture topic was demonstrated in an exemplary way: he discussed data from research publications, explained techniques, demonstrated the relevance of research findings in animal experiments and on human performance (videos), and provided real life examples where athletes abused such findings for doping during Olympic Games. In addition, he impressively explained the relevance of the discussed pathways and mechanisms in a broader context.

He used recent research papers as an anchor to demonstrating how experimental cell biology data is interpreted, building a narrative around the question of regulatory processes influencing muscle endurance. This was linked to recent news reports of the use of drugs in sports to illegally boost performance, thus highlighting the relevance of the study of cell biology to a wider context.

6. Faculty member's ability to encourage students' thinking.

He did an excellent job in encouraging and facilitating students' thinking: e.g. in order to answer the polleverywhere questions, the students had to apply knowledge from the previous lectures and had to correctly apply and interpret additional information including schematic drawings and data from research publications. That worked very well and the majority of students gave the correct answers. Students' thinking and learning was also facilitated by the MCQ testing itself as they received various types of feedback: 1. A feedback from their peer while discussing the answer options, an immediate feedback from the system after submitting their answers, and finally a feedback from the faculty discussion the answer options.

Prof Thilo provided ample opportunities to encourage students' thinking, by asking questions during the lecture and using the polleverywhere system for formative quizzes to test how students interpret experimental data. He often did not just provide answers, but paused to ask questions, getting the students to think for themselves before the answer is discussed.

Additional comments to align with your own Department/Faculty/School's practice.

I was very much impressed by the way A/Prof. Hagen delivered his lecture and indeed got a lot of inspiration for the design of my own lectures. He is an excellent teacher.

Prof Thilo's interactive teaching in a large classroom is exemplary of how content delivery and use of interactive technologies can be aligned to teach a large classroom more effectively and to stimulate critical thinking.

7. Currency and relevance of the teaching materials (textbooks, readings, cases etc.) for the intended learning outcomes.

The teaching materials represent an excellent blend of readings, cases, research papers, and videos allowing the students to get a very comprehensive overview and to classify the acquired knowledge in a broader context.

The teaching materials are highly relevant, incorporating recent research data as well as contemporary resources that illustrate the scientific thinking behind cell biology experiments.

8. Emphasis on application of knowledge as well as independent thinking and learning in the teaching materials.

In this module, the students gain important and relevant knowledge on the one hand, and on the other hand they learn how to classify and apply this knowledge to problems and questions. Where appropriate, detailed examples are provided. This way, the students get a good overview plus understanding of details without being overloaded with information. They learn how to critically analyze research data and to synthesize information from research studies.

The students are given resources for self study, and the classroom setting is used to illustrate how the knowledge gained through pre-reading can be applied to interpret and evaluate experimental data.

9. Usefulness of information technology (IVLE, Internet, software, videos, animations etc.), if applicable.

For this module A/Prof. Hagen employs the whole array of available information technologies including IVLE, Internet, software tools, videos and animations. The use of these technologies is absolutely appropriate and facilitates student learning and thinking.

Prof Thilo uses a blend of different teaching material (e.g. videos to illustrate concepts) as well as assessment methods (Polleverywhere for formative quizzes, and in-class summative quizzes). These served to engage the students by providing a mix of different media to reinforce a learning point, and increase the level of interactivity in a large classroom.

10. Appropriateness of the continual assessment tasks (essays, tutorials, projects, practical exercises, etc.) and/or final examinations in achieving the intended learning outcomes.

Very useful combination of 8 in-class IVLE quizzes, the 5 best of which are counting, student assignments, with an open-book CA exam and a final exam.

The in-class summative quizzes were aligned to the learning objectives, focusing not on rote-learning but on the application of concepts. As the quiz was open book, this also stimulated discussion among students, each seeking to clarify their doubts with their peers.

11. Effectiveness of the continual assessment tasks and/or final examination in differentiating students with differing accomplishments.

The assessment tasks are very efficient in the way they represent a successful combination of individual assessment inspired by peer feedback during the in-class quizzes, team-based assessment during student assignments, and solely individual assessment during the CA and final exam. This combination considers individual student performance and the students' ability to work in a team.

The in-class quizzes were geared towards testing higher order thinking (understanding/analyzing), and provided discriminatory power to distinguish between students who merely memorized the facts versus those who understood the concepts and were able to answer questions that were interpretative in nature.

12. Appropriateness of the assessment tasks in challenging the students to think independently and to apply knowledge effectively.

During the in-class quizzes, students are assessed individually but have the chance to discuss their answers with their classmates. The feedback from their peers improves the learning effect. They are challenged with questions which are able to answer combining previous knowledge with novel information and logical reasoning.

The in-class assessment was challenging and did not rely on mostly recall type questions. The questions were challenging and provoked discussions among students.

Additional comments to align with your own Department/Faculty/School's practice.

The array of different teaching and assessment tools employed in this module is impressive and I consider using a broader spectrum of methods for my own modules.

The assessments were geared towards higher order thinking by Bloom's taxonomy, and is aligned to the department's and school's drive to provide our students with skills to critically interpret data and form reasonable conclusions.