Anatomy of Assessment

Reflective Essay

Faculty: Natural Sciences
Department: Centre for Environmental Policy
Module name: Innovation and Entrepreneurship for Sustainability (B&E Option) and Infrastructure of Urban Environments (USE option)
Degree: MSc in Environmental Technology,
Options: Business & Environment (B&E) and Urban Sustainable Environments (USE)
Level: Master's level
Academic Years: 2019 - present
Format: Individual essay, submitted electronically on Blackboard
Approximate number of students: 20-26 per option
Delivery mode: In person
Duration: Spring term
Weighting and credit:
B&E: 100% of the Innovation and Entrepreneurship for Sustainability module (33% overall Spring Term)
USE: 50% of the Infrastructure of Urban Environments module (16.5% overall Spring Term)
Module ECTS: 7.5 (B&E) and 7.5 (USE)

Insights colour key

Educational Developer
Inclusivity
Learning Designer
Registry
Careers
AI

Assessment overview

A reflective essay is a piece of writing, where students are expected to describe and reflect on their experiences regarding a module's activities and learning outcomes (for example, field trips, or consultancy experience). The reflective essay was designed as a term-long activity and as an end of term assessment to incentivise students to describe and critically analyse their learnings, experiences and contributions to group discussions, whilst consolidating knowledge and reflecting on activities conducted during the module.

Design decisions

Rationale for Reflective Essay

The assessment is embedded into two modules Business & Environment (B&E) and Urban Sustainable Environments (USE). The reflective essay was inspired by the convenor's experience as a student of the B&E option and has been chosen as an assessment to facilitate revision of module contents, and to consolidate knowledge, while providing a mechanism for students to self-reflect, emphasising students' preconceptions and critically analysing their own thought-process, challenging what they have learned. And for the USE option, the reflective essay was chosen to adapt the Infrastructure of Urban Environment module to COVID-19 restrictions in place at the time, and their impact on the field trips.

Alignment with other assessments and the programme/ module

This assessment contributes to distinct intended learning outcomes in both options. For B&E, the reflective essay particularly contributes to 'work effectively as individuals and as a team, taking responsibility for your own and group learning and performance', while for the USE option, the assessment contributes to 'Take field notes and transcribe summaries efficiently and clearly' and to 'Gather, analyse, and synthesise and critically evaluating information in an appropriate way'.

The reflective essay is complementary to the other assessments in the option's modules as it requires the review and consolidation of knowledge on such themes as consultancy-based projects, group presentations and peer-assessment feedback.

Practicalities

Preparing students for assessment

For the B&E option, the preparation for the reflective essay is on-going during the Spring Term. Students have three daytrips to companies with a high sustainability performance. After this, students are given the opportunity to write a 400-word (limit) critical reflection to see how their thinking has been challenged by the day trips. This constitutes the first assessment, which is purely formative, giving students the opportunity to receive feedback from the Convenor and practice for their final submission. These are followed up by informal Friday discussion sessions in a safe zone

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Role: Convenors for the Business & Environment and Urban Sustainable Environments options of the MSc Environmental Technology.

to help prepare for the reflective essays.

Similarly, in the USE option, the Infrastructure of Urban Environment module is based on between six and eight field visits, alongside practical sessions that provide technical context. These are supported by weekly Friday discussion sessions lead by either by one of the option Convenors or one of the teaching assistants.

Marking & Feedback arrangements
For this assessment, in the B&E option, the marking rubric has been replaced by a standard marking scheme co-created by the students and staff.

In the USE option, an adapted marking rubric is used to allow for additional flexibility and for the inclusion of subjective assessment criteria.

Online adaptations
The reflective essay is easily implemented online. Indeed, in the case of USE option, this assessment was chosen because it was better suited considering COVID-19 restrictions.

Advantages of assessment type
- The reflective essay contributes to developing self-reflection skills, which could support life-long learning and understanding of their own process of meta-cognition (i.e., the process of learning from individual experiences, creating connections with practical knowledge), engaging with experts on the field and producing strategies and scenarios to think about the future from a professional standpoint.
- A personal development plan is something that many employers ask that employees do throughout their career as part of their annual appraisal hence asking students to reflect on it as part of the assessment is closely aligned with transferable skills for the workplace.
- With the co-creation of assessment criteria, there is also an increase in student engagement and ownership over their learning process, as students are asked to think about their previous learning experiences and compare how and what they want to gain from their current learning experience. F
- Students improve their revision and consolidate their knowledge, as well as enhancing their

understand the social value of discussion seminars.
- The assessment helps students think deeply about what they are learning, helps reinforce the experiences they have and helps them evaluate them.

Limitations of the assessment type
- It is a possibility that certain academic backgrounds (e.g., liberal arts or humanities) could give a competitive advantage to students from different disciplines. For that reason, subjective criteria have been included in the marking scheme, allowing to capture individual students' learning processes and skill development.
- B&E requires conclusions to be drawn from the essay narrative and used to develop a personal development plan. It appears that students find it easier to reflect than to develop meaningful future-oriented actions
- From a convenor's perspective, there is an increased workload associated with the refinement and testing of assessment criteria over the term (normally around three times) but it's fun finding out how students really want to be assessed.

Advice for implementation
- Designing a reflective essay assessment and feedback scheme is a long process (3 months for B&E) that requires effort and dedication from staff members, and open communication between staff and students. Being patient is key to achieve a well-designed and well-thought-out assessment.
- It is useful to consider embedding reflection points across the programme, especially if reflection is an important part of professional practice that the programme aims to develop. This would allow several points of practice across the programme and offer continuous feedback resulting in better developed skills and clear communication of the importance of those skills for the profession.
- Staff members should be cautious about finding a good balance when it comes to assessment criteria
- For students, keeping un updated diary of their experiences is essential, so is reading and reflecting upon is essential to practice critical

thinking and to have material to refer back when writing the essays.

- Drawing on the point above, those diaries are best kept electronically for ease of access with MS One Note being recommended as a good, College supported tool.
- While most development plans are about skills as opposed to motivation and understanding of what you might do in the future, a personal development plan that includes an element of thinking about what to do and explore next that could add further value to the reflecting experience.
- The clarity of the process and the assessment criteria is a very important consideration that needs to be given when designing similar assessments.
- Students may find reflection difficult therefore appropriate preparation and scaffolding is key. Embedding formative points where feedback can be obtained that can feed forward to the summative submission is a recommended strategy.
- On top of that students could be presented with some guiding questions to direct their attention to the depth of reflection required.
- An additional level of preparation can be done through exposing students to different theories around reflection, looking at examples to help them analyse the strengths and weaknesses of different reflective approaches, practice reflection on basic things or provide them with reflection templates.
- Consider whether written reflection is important and whether the same criteria could be satisfied by allowing oral reflection as reflective writing can be difficult for students from science backgrounds. Some students might find it easier to be reflective when speaking so it is useful to consider how oral reflection, for example submitted via video, could be an option for reflective assessments.
- Students on the autistic spectrum might find reflection challenging. Understanding personal motivations and awareness of how learning journey had happened can be difficult for these students to flesh out. Students should be offered individual support from the Specific Learning Difficulty Tutors.

- It is important to clearly outline to the students what is permitted and what is not permitted when it comes to AI. The College encourages staff to create opportunities where students' AI literacy can be developed. College's approach to the use of AI for assessment is outlined in "AI tools in teaching and assessment" document.
- It is important to design in opportunities for students to develop AI literacy. This can be done through: explaining what Large Language Model systems are, how they work and what their strengths and weaknesses are, how to use prompt engineering, how AI can be used on the programme to support student learning and where other tools can offer a similar support, showing some examples of effective applications of AI to support learning
- Writing distinctive marking criteria across grade boundaries can be tricky as finding the right vocabulary to show clear distinctions is a challenging task. AI can be utilised to analyse the current rubrics, see where ambiguities, vagueness and overlaps are and suggest better ways to describe performance according to each criteria at different levels. This was done on this programme. The output generated by AI was then reflectively and critically used to create the final rubric.

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