Anatomy of Assessment

Two-Part Group Consultancy Project

Faculty: Business School
Department: N/A
Module name: Managing Innovation
Degree: BPES
Level: Undergraduate (Level 6)
Academic Years: 2020-21 and 2021-22
Format: Group work - slide submissions and presentations with peer feedback
Approximate number of students: 60
Delivery mode: Online submission of presentations with peer feedback
Weighting: The group project weights 50% of the final grade. The group project grade is calculated as follows: the Part A comprising the Tech Scenario (20%), the Part B comprising the Advice (50%), and Final Oral Presentation and Q&As (30%)
Module ECTS: 5
Module type: Varies (elective for some departments, more embedded into the programme for others)

Insights colour key

Educational Developer

Inclusivity

Learning Designer

Registry

Careers

Assessment overview

This is a two-part assessment, where teams work in groups. Part A is a creative task, where students develop a scenario describing a small company that developed an invention in an emerging technology area. Students deliver their scenario in the format of a 4-slide presentation, following a provided template.

These scenarios are then distributed to another group which will work on said scenario in Part B, the consultancy task. The task is to advise the company in the scenario on how to successfully launch the innovation. (All groups receive another group's scenario). The groups submit their advice as a 4-slide presentation which they present (and defend) to their `client' (i.e. another group).

Design decisions

Rationale for the assessment

The assessment was selected as it is an especially unique way to test students' engagement with the taught material. In addition, students are able to highlight their own personal interests and preferences and self-select into technology domains of interest, from which to come up with hypothetical yet realistic inventions.

The ability to choose own area of interest is a great example of inclusivity in action; according to Universal Design for Learning principles, students should be presented with the opportunity to integrate their own interests or their own unique problems to be solved. Watch this video on giving students choice.

This it considered when they are allocated to groups. This enables the students to translate their personal scientific curiosity into a basic product or service concept, i.e., invention. This makes it a very interesting, assessment for the student who will work in groups. The second part of the assessment, the Consultancy Task, includes groups of students acting as clients and consultants to each other, which is not seen across other assessment types. Students apply the course's key conceptual frameworks, developing reflection, critical analysis, teamwork, and communication skills. The main goal of the Consultancy Task is to help the client group to move the invention to the market and society, that is, to transform the invention into an innovation. Additionally, there is much student interaction, both within and between the groups, which makes for an engaging and fun assessment.

Student disengagement is a risk with any course. However, this type of assessment makes it interesting and personal for students as they are able to select into the kind of technology/invention/innovation they would like to work on. Often this is closely related to their field outside of the classroom, as this is a Business for Professionals of Engineering and Science (BPES) course, meaning, a course at the business school, that engineering and science students are able to enrol in. Students become engaged as their client group is standing in front of them, and the client is interested as they want to find weaknesses in what is presented and follow-up with questions

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Students are more likely to engage with the client-facing assessment setup, as it very much resembles the tasks that they will be asked to perform as professionals. Taken together with the overall duration of the task, this is a solid example of authentic assessment that values the process derived from team working and effective communication and delegation of activities between team members, as well as valuing the end product of the group activity. It also seems like the longitudinal nature of the assessment ensures that engagement is more sustained instead of, for instance, having one large assessed piece of work at the end of a 3 or 4 week taught period.

about how to better apply the module's frameworks for the proposed invention-to-innovation roadmap. This creates an engagement and dynamic that would not exist if everyone was simply working in individual groups with equal tasks on an assigned topic. In terms of class dynamics with this assessment, there is much more engagement with the topic, and between the students.

The assessment was designed to keep students interested and motivated following a practitioner-oriented heuristic. This helps with their attention span in class, as students know they will be applying the coursework to a very concrete example, as the link to coursework is quite strong. Student feedback is important to help resolve any problems in the future.

This assessment is unique in that students are allowed to choose areas of particular interest to them. Students in Part A of the assessment think of a project (tech scenario), propose it, and then projects are executed in a team format, involving students with similar interests. Every group is a consultant and a client at the same time, so client groups in the first 3-4 weeks of the term are tasked with coming up with some kind of innovative, futuristic yet realistic technology (e.g. things seen in their labs, perhaps) and its potential applications in the market and society through a new venture. They can think about what they are interested in, with general areas of potential interest e.g. AI, machine learning etc. identified in a list that is continually broadened (see example in this sheet), and students self-select into their areas of interest and write up about the technology in 4 slides.

The assessment allows students to develop communication skills and learn how to manage conflict in a group. The assessment is designed in such a way that the team is likely to come up with different views so they will have to reframe what they are presenting which is quite reflective of what they have to do in a workplace when they're dealing with multidisciplinary teams who come from different backgrounds. Students having to defend and validate their ideas is something that commonly seen in management consultancy interviews for pharmaceuticals and banks - students are asked to present an answer to a problem and then they are quizzed by the interviewer as to why that they have chosen that particular route or pathway which is what this assessment asks them to do.

Fit with other assessments and the programme/ module

Following Part A in the assessment, in Part B the consultant groups are tasked with making a business case about it (with the consultant-client pairs based on interests, but no direct cross-over in pairings to avoid quid-pro-quo marking. Meaning, if Group 1 is acting as the Consultant on the technology suggested by Group 2, then Group 1 will not also act as the Consultant for Group 2. Rather, Group 1 will consult for Group 3, etc.). The business case looks at how they would take it to market by accelerating adoption, how they would prevent or prompt disruption, the timing of entry, how to protect their IP, among other frameworks discussed in the Module. At the end, they go back to client groups with what they have produced. The client groups (from Part A) then have two days to come up with questions they may want to ask the consultants following their in-class presentation, with some questions occurring live, and some sent in advance to be answered by the consultants. It is an especially interactive assessment among groups, and across course content, as the assessment progresses over the entire term.

This assessment does not take concern with regards to how it fits within other modules in the programme, as it is unwise to rely on all students having taken the same prior courses. This is a standalone course and assessment. Given the students' background in engineering or science, a learning objective of this project is to teach students to translate scientific curiosity into an innovation concept. Additionally, to learn to analyse the market

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potential (challenges and opportunities) of these new products or services (Part A of the assessment), and develop strategies to help maximise their adoption, profitability and impact are key analytical skills the students will be learning (Part B of the assessment).

Practicalities

Preparing students for assessment

In any module that relies heavily on group work it is important to establish common ground rules around group work as well as to be alert to where a tutor might need to step in and reassert rules of engagement.

Work throughout the course is done to make certain the students are on track with the assessment. Discussing the assessment early in the course is paramount so the assessment does not fall behind after Part A, leaving not enough time to complete Part B. Thus, this includes making sure students are where they should be at set week milestones. Students are always encouraged to come forward with questions. In addition to the assessment brief, it is prudent to also supplement with management-specific resources students may look at from the library. The teaching team have tended to give students ideas of places they can go to get the information they need.

When introducing group work some consideration needs to be given to how students with specific learning needs can be successfully participating in group interactions. All students involved should benefit from inclusive practice this means that inclusivity considerations can be embedded within standard practice around preparing students for group work. This can be done through discussion around the allocation of roles and better understanding how others, including those with specific learning needs such as dyslexia, autism, dyspraxia etc learn and communicate. Individuals should be mindful of that and think about the delegation of individual tasks that are appropriate to what individuals can do. Therefore part of preparation for group work is considering how others can be mindful and empathetic towards other group members.

Exemplars can be a brilliant way to illustrate benchmarks to students, particularly when the assignment can produce a variety of different – but equally acceptable – outputs. Benchmarking and keeping on track is a good way of sustaining student motivation and interest to not only complete the task, but to complete it to a good standard as well.

Examples are provided only if students ask, as projects are meant to be creative, and not a carbon copy of one shown as an example, replicated on a different topic. In the past examples were shown, and it tended to end up a disservice as students produced a less interesting output. Instead, the lecturer is more apt to take a preliminary `quick peek' and let the students know they are on track.

Organisation of the module

When choosing an assessment diet for the course it is important to consider the ECTS value. A 5 ECTS course requires 125 hours of effort. It is important to reflect whether the proposed number of assessments is appropriate for the amount of effort indicated by ECTS. This is especially the case with group work that in some cases requires more work than an individual assessment.

The module follows this timeline:

- General Instructions are given on Day 1 (Oct 13);
- A google sheet/survey is shared on Week 2 (Oct 20) for students to input their preferences regarding the Technology Domains to address;
- Detailed Instructions are given on Week 3 (Oct 27) via a Document and Submission Template;
- The deadline to form Groups is Week 3 (Oct 27) and these Groups are ultimately allocated by the Programme Team based on the above student preferences;
- The Tech Scenario (Part A) is submitted by 14 November (beginning of Week 6, after Session 5);
- Instructions for Part B are given at the end of week 5 (November 11)

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- The submission for Part B is by 5 December (beginning of Week 9)
- Final Presentations are on Week 10 (15 Dec).

Having appropriate equivalents is very important to allow for mitigation. What needs to be considered is ensuring that the same skills are being assessed. If this is not possible then the marking scheme needs to be adjusted to account for any differences in the mode of assessment.

Marking arrangements

The marking criteria is typically designed by each individual module lead. There is a rubric, which makes marking easier. A further advantage of a rubric is if the course is passed on to a different lecturer, they have a baseline from which to start, and can amend as they see fit given how they will be teaching the course and running the assessment.

As mentioned in the Introduction, this Group Project weights 50% of the total grade for the Module. The specific marking components for this Group Project includes the Tech Scenario of Part A (20%), the Advice of Part B (50%), and Final Oral Presentation during the last session (30%).

Some considerations should also be given to how the questions are organised. For example, one strategy could be pausing after a presentation and ask others to write down the questions to the presenters so that they have some time to prepare. This helps with the auditory processing side of things, i.e. not being able to recognise what needs to be done quickly by impeded understanding of what's being said; that is often present in a lot of disabilities. Speed of response is something which is part of a lot of neurological conditions.

With presentations, especially in cases where every student is expected to present, some considerations have to be given to adjustments for students who might not feel comfortable to present. A short presentation shouldn't be challenging to many students yet, some students, for example those with severe autism might struggle. Having an alternative such as a short video, or as in this case a viva would enable to the student to deliver something which didn't mean they had to stand up in front of the group and do it. Such alternatives could potentially take the stress out of presenting. Providing students with choice is providing them with the option that suits their learning best or limits the impact of their disabilities.

Broken down further, individual points were given for each of sections as per the following table:

Scenario - Description of technology history and recent developments	10 points
Scenario - Quality of invention description	10 points
Advice - Quality of market adoption analysis - Q1	10 points
Advice - Quality of value capture analysis - Q2	10 points
Advice - Quality of timing of entry analysis - Q3	10 points
Advice - Quality of overall advice	10 points
Advice - Quality of sources and adequacy of referencing	10 points
Presentation - Adequacy of judgement and usefulness of advice	10 points
Presentation - Organization, clarity and structure	10 points
Presentation - Quality of client questions	10 points
Presentation - Quality of rebuttal	10 points

There is a co-marker involved from outside of the class (usually the TA), in addition to the lecturer. Both co-markers sit in for the oral presentation, where the students highlight the most important elements of advice (Part

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Awarding a group mark resembles practice in the workplace as if the group fails then the whole project will fail with the consequences for the whole team. A good way to bringing an individual element to group work is including reflection that could be independently marked. Marking reflection, however can be difficult. For more information on this see Reflective essay case study.

Peer review is a great example of how to assess the process behind completing the task, and it is designed to ensure that all students are accountable to one another for completing their delegated tasks within the assignment. Peer review could be incorporated alongside some form of tutor-led process-checking mechanism as peer review can at times be tricky to implement effectively without the risk of some students attempting to 'game the system'.

B), marking on a group basis where the markers only have a group number, not any particular student names. Both markers mark the presentations, and afterwards exchange notes and discuss any situations where they are completely divergent, and why. If there are any adjustments to be made they re-adjust. The average of both marks is taken as the final mark for this Group Project.

One thing has been considered for the future, as a response to any free-riding within groups. One way to do it is everyone puts a tentative mark on other group members. If someone is significantly marked lower than the others, the lecturer may look into it. This can be used to help assess the criteria. For example, if everyone is scored 100%, there is no issue. In the prior year, there were free-riding issues in one group alone.

If there is variance in the group and if one person is consistently marked very low, well, a peer review can be run with the programme team. A, programme review can be run to get more data and investigate further. Modules in the Business School encompass group work as standard, and it is assessed to incentivise engagement. This is to prepare students for working after they graduate and because students' learning can be enhanced by working with others. It is not always popular with all students, and there are concerns raised about free-riding, but the principle of it being valuable for life after graduation means that it is retained even if students raise concerns. For all group assessments, lecturers have the option of asking the programme administration team to run a peer survey to indicate any concerns about effort of a groupmate. This can then be reviewed by the programme academic director and the module lead, alongside any other information on extenuating circumstances or similar, to determine if any individual's mark should be lower than the assigned group mark. The default is that all members of the group get the same mark, and this is what happens in the vast majority of cases.

Overall, it has been a very positive experience with this assessment. There are approximately 10 teams, as usually this module is 60 students, which is manageable. Students select their projects based on interest. It is not randomly allocated, so they are interested in the subject area, and if they do not declare a preference, then they are allocated into an existing group. This drives more motivation and interest in the assessment.

Feedback arrangements

A template is provided to the students in advance of the assessment which provides a breakdown of various marking sections of the client scenarios and consulting teams' presentation and report, as has been provided above. This provides information as to what the students will be assessed on, and how many marks students will receive. During presentations, the teaching team sits with these same templates, and this is where the marks are put in.

Markers mark on paper/ on their own laptop in the presentation, and then the feedback is uploaded to the Business School Marking System and

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This example of group work is a more sophisticated two step process. This means that there is a strong dependency between the groups – one group has to submit on time for the other to make their contribution. If the deadline is not respected, it could have a wider impact on everyone else. It is important to manage this kind of dynamics. Creating formative deadlines can encourage timely submissions. Ensuring that there is space between submissions to account for potential extensions without an immediate impact on students is also important. Finally, a strong teaching presence is crucial – making sure there is a TA that can follow up with students and help resolve any issues.

shared with students by the Programme Team via Insendi. Besides the mark, there is written feedback for each Group.

Online adaptations

During Covid the assessment was run remotely, so there is no issue in running the assessment online or in person.

Advantages of the assessment type

- It makes it easier to assess as you are assessing students on two parts. (1) Creativity in coming up with the client technology/invention/ company information in Part A. (2) Part B which assesses student understanding, and ability to apply the concepts that they've learnt;
- It is an excellent assessment due to certain general skills students acquire. For example, in the presentation taking questions, students don't know what questions will be posed which simulates a real-life scenario;
- It is an easy assessment to tell who is very engaged. For example, client groups from Part A should have many questions for the Consultancy Group in Part B. In addition, hopefully other questions will come from the rest of the class. If this is not the case, then the burden to keep the presentation energised falls on the lecturer and the TA to ask appropriate questions. To make sure `silence' doesn't fall, it is suggested to encourage the consultancy group to send their slide deck to the client group a week or so in advance, to aid the client group in having time to come up with plenty of quality questions after the presentation;
- The assessment remains dynamic when there are enough interested individuals who are participating, which makes for a fun course. Participation and engagement is very important and actually it is graded in this Module;
- One additional value is the assessment can be run year to year without having to re-write the design, given that the question/topic comes from the students, and they have to be able to present/defend it orally, so copying from others (e.g., a prior year project) or from the internet is hard to do;
- It's a great exemplar for actively engaging students in all aspects of the assessment process, starting from choosing their own interests as assessment topics, as well as by selecting their group membership (self-selecting);
- The topics on offer seem to be calibrated for real-world applicability which is great, and the role-playing element that accounts for any 'eventuality' (e.g. client/advisor) is a fantastic way to simulate real-world processes and applications within a 'safe' context;
- Heavy group work component allows students to be both leaders and followers and develop skills that will be useful for the workplace;

Limitations of the assessment type

- One challenge is the group that creates the scenario utilises hypothetical technology, which it is not yet on the market. This is difficult to assess within some of the core module's frameworks, and

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it could be difficult for the consultant group to assess. It is a risk on the scenario side, because if it is a bit futuristic, then the consulting team will be missing some of the scientific principles, and technological and engineering principles of how this technology might work. If this is the case, on the consulting side, the students may be assessing technology that is probably not yet ready. Therefore, the challenge could be that they are choosing the wrong frameworks to assess the technology in terms of the advisory work part of the assessment. Essentially this is the call of the lecturer – do you want to provide full creative license, or do you want to limit scope but ensure key principles are employed properly. Overall, this has worked in the past as the students are required to use white papers, technology reports and news media articles (The Economist, Financial Times, The Scientific American, Wired, etc) to inform their Tech Scenarios and related inventions;

- An additional challenge in group work, especially in undergraduates, is freeriding, that is, when people do more work than others. This is a challenge when you are doing team-based project as there might always be students more committed than others;
- The biggest technical difficulty is if a student group's PowerPoint submission will not work, or something being presented does not work in class. To avoid this, it is recommended that the lecturer receives all student presentations in advance, so all presentations are pre-loaded on one computer/ laptop. Thus, when a group comes up to present, it is there. In theory, there is always the risk of power loss, and the inability to project, but that would be the same with any presentation-based assessment. Having all slides from groups in one place makes things easy to manage;

Advice for implementation

- The assessment must be done in tandem with what is being taught in class, as the assessment is running the same time as the module. Be conscious at any given point in time, do the students have enough information to complete parts of the assessment;
- It is recommended to be very prescriptive. For example, the class is told by week 4, X should have been achieved, by week 6, Y should have been achieved, by week 8 and 10. In tandem, make certain in the course students are introduced to the necessary topics allowing them to finish the assessment. The lecturer clarifies issues and doubts during lectures and via Insendi;
- Keep in mind any course drop rates. You cannot accurately form teams if people are dropping the course. The lecturer has handled this in the past by being very frank to the students they should discuss amongst their formed groups if anyone is thinking of dropping, and letting the students working it out for themselves. Monitoring and co-ordination of the group formation at conception of the assessment is very important. If not, for the coordination of the formation of the teams on time, with a quick turnaround of receiving scenarios submissions and questions from the client groups, the assessment would not work;
- It's useful to put in place some aspect of evaluating or rewarding/marking the process as well as the final output;
- It is great to see a rubric utilised as a tool for benchmarking and grade allocation, what is also useful is for the rubric to also take into account the milestones students meet in the process running up to the final presentation;
- You might wish to consider using exemplars, but these have to be used with caution
- Ensure that enough time is spent to allow students to form successful groups and establish rules of engagement amongst themselves. This case study has some great ideas for activities that help students develop different aspects of group work.
- When preparing students for group work ensure there is some discussion around specific needs neurodivergent members might have;
- Ensure there are assessment equivalents for students who require adjustments and those who need mitigation.