Design Week: A Simulated Design Exercise

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Abstract

"Design Week" is an assessed group-based project in the Department of Mechanical Engineering at Imperial College London. It is designed to enable second year students to experience the entire design process in one week, and apply fundamental knowledge gained from the first year and a half of their undergraduate (UG) studies. This includes coping with uncertainty created by a more authentic and deliberately, less defined brief. This paper explores the design and delivery iterations of Design Week, and the motivations and educational rationale behind this format, including critical consideration of how to take into account the different student emotions that experiential learning can provoke. During Design Week, all other educational activities (lectures, tutorials and labs) are suspended to allow students to work in groups of four to develop a concept (proposed by a fictional client) in an immersive 'full-time' mode. A member of academic staff is assigned to each group as a facilitator to guide the students in their decision-making, but not give direct advice. Assessment of students' learning over Design Week comprises four elements: daily submissions which are compiled into an oral presentation at the end of the week (30 %), individual engineering logbooks (30 %), a group poster presentation (10 %), and an individual conduct of task mark (30 %). A peer-feedback system is implemented to aid accountability between students. Our experience gained from iterations of this module and student data offer insight into the ways in which students navigate this challenging process, building self-efficacy as they do so. This more authentic approach replaces a typical assessment (e.g. coursework or summative exam) and instead provides an insight into what a real-life design project might look and feel like. It is a successful, alternative means of assessing which is received favourably by students and staff.

Introduction

Engineering Design as a subject is studied and taught in many different forms, and design modules are prevalent in engineering degree programs. Engineering Design classes typically revolve around theory relating to design, manufacturing techniques, and student performance is usually evaluated using some form of project-based assessment. These projects usually span the course of a term and run parallel to other modules. There is sometimes a perception by engineering students that design is not as technically demanding when compared to some of the more traditional, theoretical, technical subjects, e.g. Mathematics and Fluid Mechanics. However, irrespective of sentiment to the subject, it is often commonly accepted that design takes time and effort, and that a significant proportion of time needs to be dedicated to perform well, which students can then see as distracting from their other subjects and examination preparation. Design is the culmination of all subject matters in engineering and gives students the opportunity to show their flare, engineering prowess, understanding of complex concepts and most importantly how to apply theory to a real-life scenario. However, the perception from students and even some faculty members does not always reflect this. To address concerns typically associated with the engineering design modules and to give students the time to fully dedicate to design, an innovative approach to design teaching was implemented in the Mechanical Engineering Department at Imperial College London. Design Week was created to provide an experiential and immersive learning experience for students.

It is an assessed, group-based exercise which is the sole focus of students for an entire week and embedded into the curriculum. This project occurs in the second year of a four-year undergraduate integrated Master's program in Mechanical Engineering (typical of engineering degree programs in the UK). The structure of this integrated Master's course is prescriptive in the first two years, with more flexible options for students to choose in their third and fourth years.

The Design and Manufacturing (DMF) pathway in the Department of Mechanical Engineering at Imperial College London starts in the first year whereby students are introduced to key terminology, concepts, approaches, and manufacturing techniques. This pathway is compulsory for all students and runs in parallel with the other compulsory technical pathways (Solid Mechanics, Thermofluids, Mathematics and Computing, and Mechatronics) that students must follow in the first two years of their undergraduate degree. In the DMF pathway, the students are introduced to technical drawings, design development, component selection, Computer Aided Design and are trained how to use machinery such as lathes and mills. This provides the students with a solid foundation and appreciation of engineering design before entering their second year. In the second year of their studies, the compulsory design module comprises of a term-long group project in which students have to go through the entire design process from ideation, embodiment design, manufacture, assembly and testing (this group project has previously included gas propelled vehicles, winches, and an electric scooter). This project precedes Design Week which takes place in the Spring term of the second year. This curriculum leads to an academic year long group project in the third year known as DMT (Design, Make and Test), whereby students work in sub-teams in the development of a larger, super project (super projects are typically formed of three sub-teams).

Design week has been curated to the meet the curriculum requirements, whilst addressing common concerns associated with design courses such as time demands. The intended learning outcomes (ILOs) of the second-year design module are that, on successful completion, students will be able to:

1. Discuss and apply an appropriate design process to a specified design challenge
2. Suggest appropriate production processes for a range of metal, polymer and composites
3. Apply a range of product styling principles
4. Explore a fuzzy brief and determine areas for definition
5. Develop a detailed product design specification
6. Manufacture a range of mechanical components using machine tools to appropriate precision
7. Produce solid models and associated production ready technical drawings to enable production of a product with interacting components
8. Develop the detailed design and interactions of a series of machine elements
9. Apply a range of creative methods to a given problem to generate a range of alternative solutions
10. Plan and manage a project, cooperating within a design group, to meet specified milestones and deliverables.
11. Collaborate to communicate the project work outcomes.

Design week addresses the aforementioned ILOs (apart from the manufacturing aspect) and this is achieved by use of multiple deliverables and learning opportunities across the week.

This paper presents Design Week, an intensive, immersive week-long assessment that has been iterated (now in the sixth year) and honed into a successful, engaging and challenging learning experience for our undergraduate Mechanical Engineering students. It explores the design and delivery iterations of Design Week, and the motivations and educational rationale behind this format, including critical consideration of how to take into account the different student emotions that experiential learning can provoke.

Design Week

Design Week is an assessed group-based project and has been designed to emulate the entire design process in one week so that students are able to fully engage without other distractions in an immersive, 'full-time' mode. This week-long assessment is in lieu of the traditional, default summative examination observed in most engineering disciplines. Design week was first introduced in 2019, and has been through multiple iterations – the development of this curriculum has been guided by the below underlying research questions:

- What are students' experiences of Design Week?
- What factors contribute to students' experiences and how do these inform decisions to make this a more educationally valuable experience?

All other educational activities (lectures, tutorials and labs) are suspended for the week to facilitate this exercise for second year Mechanical Engineering students. As noted above, the curriculum allows for this as students enrol in a specific degree program which is heavily prescribed and does not offer elective optional modules in the first two years (i.e. the timetable for Mechanical Engineering students in the second year is the same and is governed by the Department as the program is self-contained; this would be much harder to achieve in degree programs that are less rigidly structured such as those in the USA and Europe). Students are expected to apply the fundamental knowledge gained from the first year and a half of their undergraduate (UG) studies to tackle the project and meet the numerous daily tasks that they are assigned. The groups are supported by design tutors throughout the week. Design Week gives students the opportunity to achieve their goals in a time-pressured environment.

As implied in the name, Design Week is a week-long, simulative exercise. It commences on a Friday afternoon (Day 0), and finishes the following Friday (Day 5) afternoon culminating in a poster exhibition and celebration event for students and staff as shown in Figure 1. The focus of Design Week is to design a prototype (to meet the needs and design requirements of a fictional client) for mass manufacture with an estimated initial production run of 10,000 units. Design Week involves ~ 180 students and ~ 15 members of staff.

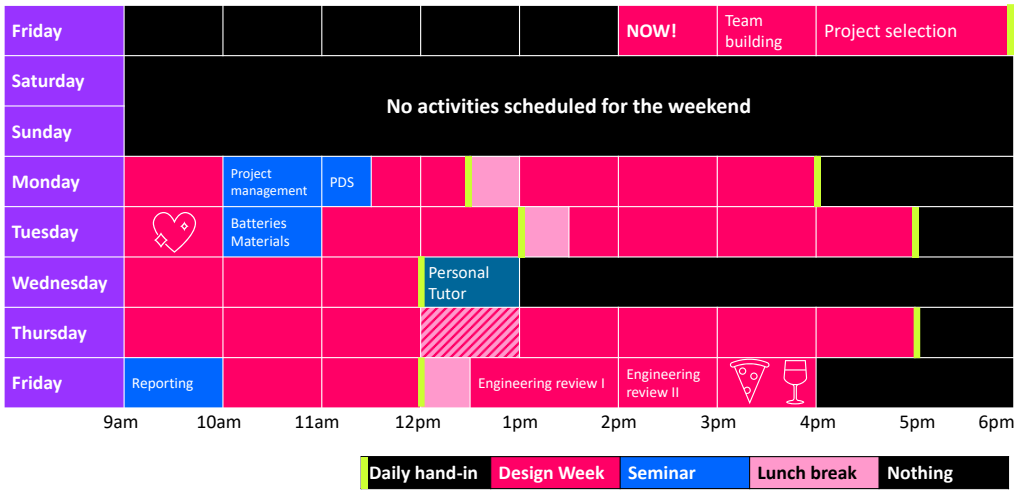

Figure 1. Timetabled overview of Design week which is presented to students on Day 0.

Structure

Day 0 involves a briefing session in which students are introduced to Design Week, ground rules are set, the rough format of each is day outlined, expectations for the week are set, design tutors supporting the week are introduced as well as the student groupings. Five different project titles and short descriptions are presented to the students, and they create a shortlist of the projects that they would like to bid for. As part of this exercise, students assume the role of an engineering design consultancy working on designs to solve problems presented by fictional clients. The projects are related in that their componentry is comparable (e.g. must include a drive train and be battery powered), but the functions and form can be drastically different. A list of the client projects that were on offer in Design Week 2023 are shown in Table 1.

Table 1. Project and allocations in Design Week 2023.

Project #	# groups allocated first choice (2023)
Playing cards dealer	24
Toast buttering device	11
Adjustable ratchet wrench	9
Toilet hydro-generator	3
Slug collector	1

The project briefs are deliberately less defined to encourage and promote student creativity, and to support their learning with respect to fuzzy criteria and ambiguity. The deliverables throughout the project are specific and clear, but the path to navigate from brief to deliverable is not. Uncertainty is a feature that students will have to face throughout their careers, and this learning experience allows students to explore this area in a structured manner. The ability to deal with uncertainty is an important skill to develop and the ways in which students successfully learn this skill and how it can be scaffolded is something that should be better understood in engineering higher education settings [1].

The students at Imperial College London are motivated, high-performing and typically innately competitive, which had previously led in the early years of Design Week to some students working excessive hours, and not sleeping and eating properly. Competition exists between individual groups and sometimes between students in a team too, and this is typically motivated by wanting to achieve the top marks, which can often translate to working very intensely for long periods of time. As the assessment has been refined, ways to dissuade this behaviour and negate these effects have been introduced. For example, periods of work are confined to typical working hours (09:00 – 17:00) and this is communicated to students well in advance (~ 4.5 months) of the exercise. Brief absences throughout the week due to reasonable outside work commitments can be tolerated. Assignments are released at the beginning of a session with deadlines at the end of the morning and afternoon sessions; this encourages students to take a suitable lunch break and not work through the evening to the early hours of the morning. Such educational design also highlights the human element of engineering and seeks to explicitly challenge behaviour that should not be tolerated nor normalised. This approach means that the social aspect of being a student is not encroached upon (e.g. playing sports or other personal commitments) and acknowledges concerns in engineering education about the negative effects of excessive academic workloads student wellbeing [2]. Despite this, a small number of students do try and predict the upcoming tasks based on previous years' projects and attempt to get a head start on tasks. Most attempts at this are futile as the submission requirements are changed with each yearly iteration of Design Week. For example, one year the Thursday task required the use of CAD while another year, only hand drawn sketches were accepted. Similarly, another year the Friday task was a report submission, but this has now been changed to a deck of slides which the students present orally. Design Week 2024 will see a group's design tutor choose the final concept that the students must deliver, as opposed to letting students choose their preferred concept. This is to encourage students to develop three excellent, viable concepts, as opposed to predetermining their concept of choice and focusing solely on this without giving due attention to the required, two other initial concepts.

Some students also lack the confidence in their own judgement of when to know that 'enough is enough', and are continually seeking perfectionism. This attitude can be detrimental to their education and learning journey. By having many time pressured deadlines, students are encouraged to make educated decisions quickly without deliberating too much. This helps them to shift their focus from the perfect solution, to an ideal solution that is based on informed compromise.

Students typically work in groups of fours. Rationale for groupings change but is either randomised, or as in recent years, students have been grouped together based on their previous design peer-assessments, i.e. like-minded individuals are grouped together. After the initial briefing session, a team-building exercise is held so that the students can start to get to know each other. Previously, a pub-style quiz has been used with Imperial College London trivia, engineering trivia, and trivia relating to staff in the Department. Staff also engage with this activity with the intention to demonstrate the buy-in and enthusiasm of the Design tutors for the upcoming week of activities. As part of this team-building exercise, in the latest iteration, a hands-on building challenge is used whereby groups compete to build the largest free-standing tower from recycled lecture notes in a fixed period. After this, the students are tasked with their first assignment which is to allocate team roles and submit their project bid.

Design Week is divided into the sections below and there are associated deliverables with each session. Students are required to complete a number of tasks including to develop a Product Design Specification (PDS), ideate and develop three concepts, embody the preferred concept, produce computer aided design (CAD) models and engineering drawings, specify components (e.g. motors and batteries), and demonstrate a consideration for mass manufacture.

- Day 0 afternoon: Project selection & Team roles
- Day 1 morning: Product Design Specification
- Day 1 afternoon: Concept development
- Day 2 morning: Final concept
- Day 2 afternoon: Towards embodiment design
- Day 3 morning: Design critique & Failure analysis
- Day 4: Detail design
- Day 5 morning: Project wrap-up & Client presentation

Deliverables for each session usually include:

- A set of slides as defined by the deliverable template, which are combined into the final presentation at the end of the week
- A discussion between the design tutor and the group or group member

For example, the requested deliverable for the Day 2 morning (2023) was a:

> '*Presentation of the final concept with justification of the key design decisions*'

Students are expected to apply the knowledge which they have gained thus far in their degrees and apply the key principles that they have learnt about in design. Seminars are run throughout the week on topics such as project management, reporting, batteries, and materials selection. In the weeks leading up to Design Week lectures are given on numerous mass manufacturing techniques from staff and guest lecturers from industry. Themes and assessment criteria throughout the week explicitly draw on the key content from these lectures.

Student perspectives

As part of a larger research project exploring the role of emotion in university learning and teaching in STEM disciplines, data was collected from 38 students who each represented an Engineering Design team (a future study will attempt to seek emotion-related feedback from each individual student, although it should be noted that emotions could also be inferred from peer assessment commentary (see below)), via a questionnaire mid-way through Design Week. The questionnaire asked them how the module made them feel, why they thought they felt this way, how this feeling impacted on their learning and how they thought peers and teachers felt and why. Recent research [3], [4] highlights the growing interest in understanding emotions in engineering education and this data gave valuable insights into this experience from the student perspective, including their varied responses to educational design choices and iterations. Illustrative responses are grouped within key themes:

Scheduling

Students found the experience intense cognitively and emotionally, with many of them referring to interacting mixed feelings of excitement and stress, largely created by the Design Week brief and deliberate time pressure:

"It feels thrilling. A little stressful, but the good kind of stress."

"Stressed but also a large adrenaline rush."

From a neuroscientific point of view this is not surprising as both stress and excitement are experienced as increased physiological activation. Some psychologists suggest that we then interpret this as an uncomfortable emotion (stressed) or positive emotion (excited) [5], or in this case oscillating between both and it is important for emotional wellbeing that many students recognise this dynamic. Even some of those reporting only negative emotion could see the activating effect of this week's design on their learning:

"It doesn't put me off from the design project because it's a group effort and everyone else is putting in effort for their grade. However, it has impacted my studies of other modules."

Although this could have a perceived impact elsewhere.

A number of students appreciated this practical focus and found the break from lectures, the change of pace and the contrast of working hard all day and resting in the evening a refreshing change from the norm:

"It is definitely activating. Practical work is more engaging than theory. This is the "innovative" part of engineering, in other words."

Others found that the pressure negatively impacted on their performance and found it hard to recalibrate to not studying after class:

"As mentioned, the assignment is meant to be stressful but after it is done at 5 pm, I don't have enough energy to study or socialise. This leaves me feeling guilty of not using my time better."

This is not necessarily an issue and could be framed as opportunity for students to develop more nuanced time management beliefs and approaches.

Some students commented on the sense of progress, achievement and pride that working on an ambitious brief in an intensive timeframe gave them:

"It is very fulfilling and rewarding to work hard and see that your work builds up to something impressive."

Uncertainty

The open nature of the task was identified by some as contributing to the sense of stress in a negative way:

"A lot of things to think about with vague guidance creates a lot of stress"

Some saw working out why things don't work as being a waste of time, rather than an inherent learning process in engineering:

"The nature of daily deadlines, time pressure is inevitable, especially when we end up wasting a large part of a day on a concept which we eventually find won't work"

Tutors are considered a strength of this week in terms of the support they provide. They are clearly briefed that they should not tell students the 'answers' but rather guide them towards asking their own good engineering questions. This results in discomfort for some tutors and mixed evaluations from students, some of whom do recognise that:

"he [tutor] can become frustrating but on the end of the day, he is this way to serve as a learning opportunity, as he wants to replicate what real Life is like"

and others who do not yet recognise this transition to more independent decision-making, and conclude:

"He increases the unknown factor by not specifying most things"

Team working

Overall, the students typically enjoy Design Week and there is an excellent sense of camaraderie and collegiate spirit which develops between the cohort during this exercise. There is a usual sense from some students that their peers are not pulling their weight and from others that they feel unable to contribute due to their perceived lack of knowledge or skills compared to their peers. Some report recognising and making use of their differing strengths, but that the time pressure may limit learning opportunities:

"We have a good dynamic, each person has their own strengths and we can really make use of that in an accelerated design week. Although it's a little sad also, because we are always trying to work in our comfort zones. So we don't really get a chance to do things we are bad at because otherwise it will be a big waste of time."

Such perspectives may point to a need to encourage more inclusive team working, to balance a focus on getting the 'best' outcome in the available timeframe.

As well as sharing knowledge and workload, some students also recognise the emotional benefits of teamworking:

"A good team relationship helps with the overall dynamic of the group. Things such as having a second opinion helps greatly in terms of feelings within the group."

Emotion and sense of wellbeing

All students are individuals and although, based on experience, we can anticipate the range of emotions provoked by this intensive educational design and seek to design unhelpful aspects out, we cannot control students' emotional reactions. Indeed as a teaching team we recognise that some so-called negative, uncomfortable emotions such as confusion are important for learning [6].

Our observation, that aligns with a widely held conception of emotion within the field of psychology [7], [8] is that students' emotional experiences are related to their goals. These goals may be academic and/or relational, focussed on the task and associated assessment, or more future and even identity focussed. Those students who could articulate their goals in terms of how Design Week was making them feel seemed to benefit:

"[I feel] stressed but entertained. I feel like a useful human being. It is very time pressured and it is also very similar to real Life scenarios as an engineer"

The time pressure was a deliberate part of the educational design and although many students found this challenging, some, recognised the purpose of this and its alignment with professional development and direction. For others it provided a mid-way motivator, refocussing their attention on the longer term goal:

"Good, makes me enjoy the course more. Nice to have a break from lectures. Reminds me why I chose to study mechanical engineering"

Some saw the cognitive and emotional challenge of this intensive learning experience as creating the sense of accomplishment, as well as it being useful for guiding future direction and choices:

"Very accomplished as my brain is fried at the end of every day and it helps a lot [to] see what you do and don't like from engineering and working in a group"

It was pleasing to see that others felt the educational design enabled them to balance academic, social, and professional goals:

"I think it is a balance between aiming for a good grade and just having fun with the project. Therefore, I feel under a lot of pressure, but am able to cope due to the fact that I know this is a simulation of real life."

Support is offered to students in numerous ways. Each student has a personal tutor that they can reach out to, as well as any other member of staff that they feel comfortable talking to, the Department's wellbeing advisor, and of course each other. In discussing communication, they are reminded in particular of the value and importance of talking with each other for professional and academic benefits, but also for their own personal benefits. In some senses, this pressured yet supported opportunity enabled some students to start to overcome existing academic and emotional challenges:

"I hated design before this week. For the first time, it felt like this time there were actual ways of helping our mental health and our happiness working on the project. Seeing teammates and tutors and Marc regularly was a lot better than the term long projects we've previously had."

The student quoted below highlights the insecurities many STEM university students have about not being knowledgeable enough or not comparing favourably enough with their peers in a way that can make them feel inferior [9]. It also illustrates the value of opportunities like this for building students' awareness of what they can do and what knowledge is applicable to recall. It also reminds us that it takes time for students to work through these psychological processes involved in complex university learning. Finally it highlights the importance of social and emotional dimensions that can be developed through collaborative work with peers, but also that collaboration itself can be a challenging negotiation. For example:

"Because I have last done Design more than a year ago, the archaic memories of my former expertise only began surfacing gradually as design week progressed. In the meantime, I felt inferior, overwhelmed by the sheer number of little details and calculations that has to be done, and instead having to rely upon my friends and teammates for support.... However,

once I started focusing upon what I can do, and slowly explored what I used to know, I felt more confident in my abilities to contribute to the group. If I had prepared before, I'd say design week would have been a better experience. However, the big stress is balanced out by the friendships made during this experience."

Assessment

Design Week is in lieu of a traditional exam and is advertised as a week-long project/assignment; however, may be perceived by some students as a week-long examination. The grade assigned in the Design Week is worth 60 % of the second year Design and Manufacturing module. The final project mark is composed of a group mark (40 %) and an individual mark (60 %).

Throughout the week there are eight principle submissions which are all summative. The submissions are slides which get compiled together at the end of the week to form an oral presentation. This contributes to 30 % of the total project mark (75 % of the group mark). Each group is also required to produce a poster to summarise their work, and present the poster orally to assessors at the poster exhibition which contributes 10 % to the total project mark (25 % of the group mark). The individual component includes a Conduct of Task and Engineering Professionalism assessment by the Design Tutor worth 30 % (50 % of the individual mark) which is based on tutor – student interactions throughout the week. The grade breakdown for Design Week is shown in Figure 2.

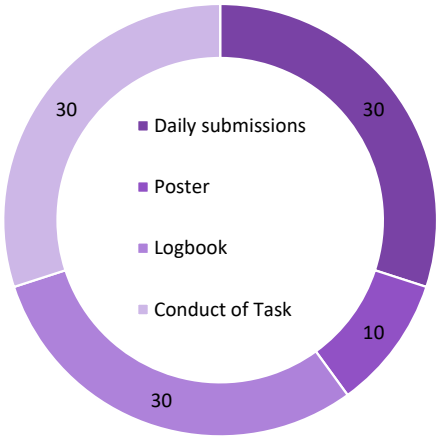

Figure 2. Grade distribution of Design Week marks by task.

Assessment of students' learning over Design Week comprises four elements: daily submissions which are compiled into an oral presentation at the end of the week (30 %), individual engineering logbooks (30 %), a group poster presentation (10 %), and an individual conduct of task mark (30 %) (see Figure 2). At the end of the week, students are assessed during a 20-minute oral presentation (comprising the components from the daily milestones). This helps to ensure that all students contribute and appropriately manage their workloads as the nature of the assessment prevents work being left to the last moment. As a result, the week can be become intensive due to the persistent pressure of time and multiple deadlines. A peer-feedback system is implemented to aid accountability between students. The week is concluded with a poster exhibition, which allows the students to showcase their work to their colleagues, staff and the wider academic community. The students enjoy the

exhibition as it gives them the time and space to show their work and celebrate their successes with their peers.

The staff workload is relatively high during Design Week due to the requirement to meet multiple groups of students (typically, 3 – 4 groups are assigned to each tutor), in addition to their normal workloads (timetables are not suspended for the other year groups). However, the overarching sentiment is that tutors like this simulated exercise, due to the interaction with students, helping students be innovative with their approaches and seeing the development of their designs throughout the week. There is a strong buy-in to Design Week from the tutors involved and the Department is wholly supportive of the endeavour. Design Week has had a profound impact on the learning experience of students and has contributed to overall student success in the degree program. The emphasis on a multidisciplinary approach throughout the week gives life to subjects that students might have previously viewed as solely theoretical, and also provides them with additional lenses to approach their studies. It provides a foundation for the larger group-based, design module in the third year of the degree program and creates an environment whereby students need to be efficient with their time and decision-making processes.

The daily submissions, in conjunction with the oral and poster presentation have been curated in order to achieve strong constructive alignment with the ILOs outlined at the beginning of this paper. For example, students are asked to produce a detailed design of a drive train which allows them to meet ILO 8.

Peer-assessment

As part of the process, students must assess the performance of themselves and those that they worked with. Feedback is provided by a numerical score from 1 to 5, whereby 1 is ‘Improvement needed’ and 5 is ‘Excellent’, and free text is used to comment on the performance of their teammates. This process is facilitated using FeedbackFruits, a learning management integrated tool suite. The peer-feedback scores compliment the overall assessment of the students and can be used to either scale up or down the grade of a student (the allowable amount is set by Imperial regulations at ± 5 % points).

Four aspects (equally weighted) are assessed numerically:

- Group engagement
- Technical contribution
- Project contribution
- Support for others

Students also have the option to provide written feedback about their peers in the form of either a compliment or a suggestion. This feedback is not shared directly with students, but is used by staff to assess group dynamics and performance throughout the week. Sharing this with students could provide useful insight, allowing students to evaluate how others perceive their strengths – providing yet another learning and reflection opportunity. This feedback can also be used to infer the general sentiment of students throughout the week as there is perceived to be an emotional interdependence within the group that a student is assigned to.

It was noted that the groupings for Design Week are based on like-minded students and overall, this has shown to have positive impact on peer assessment scores. The variation in

responses in a given group relating to Design Week is reduced when compared to group responses in the preceding design project. There are many factors that could contribute to this, but it is likely that students have a higher degree of self-efficacy when surrounded by those that are similar to them which can aid reducing feelings of inadequacies. The outcomes of Design Week suggest that most students are very good at working in teams when pushed to do so.

Students are often concerned when working in groups about the performance of peers, and how their contributions might be perceived by others. The use of peer assessment, in addition to encouraging reflection amongst students, can be seen as an insurance policy. It is reassuring for some students to know that if other members do not contribute, there is an avenue for them to express their concerns. There is always the risk that students may choose to discriminate against others in their team; however, we have not seen evidence of this in Design Week.

Design Week will continue for the foreseeable future due to the positive feedback received. As the program is further developed more data will be collected from students to better understand their experiences and allow the exercise to be refined further. Different approaches to grouping may be explored, we may introduce looks-like prototypes to add another dimension to the exercise, and there is even the possibility of embracing and incorporating generative AI into the process.

Conclusions

Design Week has been presented in the context of the broader curriculum in the Department of Mechanical Engineering at Imperial College London. It is an immersive, week-long, assessed group project which emulates the intensity and process of a ‘real-life’ design project, including interactions with clients and advisors. It provides students with the opportunity to achieve their goals in a time-pressured environment and dedicate their energy to a singular focal point.

The module has been through multiple iterations, which coupled with student data, has offered insight into the ways in which students navigate this challenging process, building self-efficacy as they do so. This more authentic approach replaces a typical assessment (e.g. coursework or summative exam) and instead provides an insight into what a real-life design project might look and feel like. It is a successful, alternative means of assessing which is received favourably by students and staff, and as such has become deeply embedded into the framework of our degree programme.

Teacher observations and student feedback suggest that the module design both evokes and supports a range of emotional experiences that are expected in intensive learning situations. It is important that students and tutors are made aware of this and offered appropriate support. It is good to see that much of this support comes from the peers themselves. In this way Engineering Design offers an active opportunity for students to learn to work with their own and peers’ emotions in a way that is beneficial for future academic and professional challenges.

Design Week has proved to be a successful, experiential learning experience for students that is well received.

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