
CASE STUDY 3

An Exploration of Student Growth through Assessment: Modular Redesign to Incorporate Problem Based Learning, Self-Directed Assessment and Personal Reflection

Discipline: Occupational Safety and Health (OSH)
Student Numbers: ~20 Postgraduate (part-time adult professional students, full-time international students and elective full-time postgraduates from other programmes)



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Introduction and Context

There were two specific reasons for the re-design of this module to become more self-directed. While student feedback on the module was good it was not brilliant and there was a distinct disconnect between how the students viewed the in-class experience and the assessment strategy. The students also could not see the links between the assessment strategy and the module learning outcomes.

The redevelopment of the part-time MSc in Occupational Safety and Health into a full-time MSc available to Irish and international students required a curriculum review and overall assessment strategy re-design for the programme. The internationalisation of the programme necessitated that this module would increase in size but now with a newly diverse cohort. It was also considered that this would be an opportunity for elective postgraduate students to take this module also and increase the diversity within the student cohort.

The assessment strategy for the module aimed to have a focus that is strongly linked to the practicalities of the subject of Human and Organisational Behaviour while also incorporating the principles of Universal Design. Providing a specific purpose to each form of assessment linked to the learning outcomes of the module added value for the students. Learning through action is far more effective than learning by simple instruction (Pryor and Crossouard, 2008). When approaching a curriculum design from the outset, irrespective of the delivery innovations i.e. blended learning and problem based learning (PBL), it is the assessment of students' learning which often proves most problematic (Schwartz et al., 2001). Ensuring the assessment strategy was aligned with the learning outcomes was considered to be essential.

Developing a new assessment strategy focusing on two phases of the module, each with a specific purpose but with self-direction at its core, became the basis of the assessment strategy that ensured student buy-in to the redesigned module (North, 2016). The overall objective was thus to redesign the module teaching strategy in partnership with its assessment strategy so that it would be appropriate for this new more diverse cohort while also delivering an enhanced student learning experience with decision making over their own assessment. The assessment strategy allowed them to demonstrate their learning more effectively than before.

Initiative Design and Implementation

Module Restructuring

The module was re-designed in the summer of 2017 prior to its relaunch in Semester 1 of 2017-18. The re-design was successful and has continued into 2018-19 with successful student evaluations so will continue as it is.

The student cohort is approximately two thirds part-time second year professional adult students (approximately 23 to 60 in age range) and one third full-time international students (approximately 23 to 30 in age range). Less than five elective students have taken the module since it was redesigned.

The module examines human and organisational behaviour in the context of safety and health at work, and requires students to apply this knowledge to the improvement of the working environment and the promotion of safe work practices. As each student approaches this with differing levels of work experience and different work environments the assessment needs to be adaptable for each student to complete and link to the module learning outcomes.

The module was broken into two phases of learning:

- Phase 1 – How humans fit into their working environment (ergonomics); and
- Phase 2 – How humans interact with one another in their working environment (organisational management).

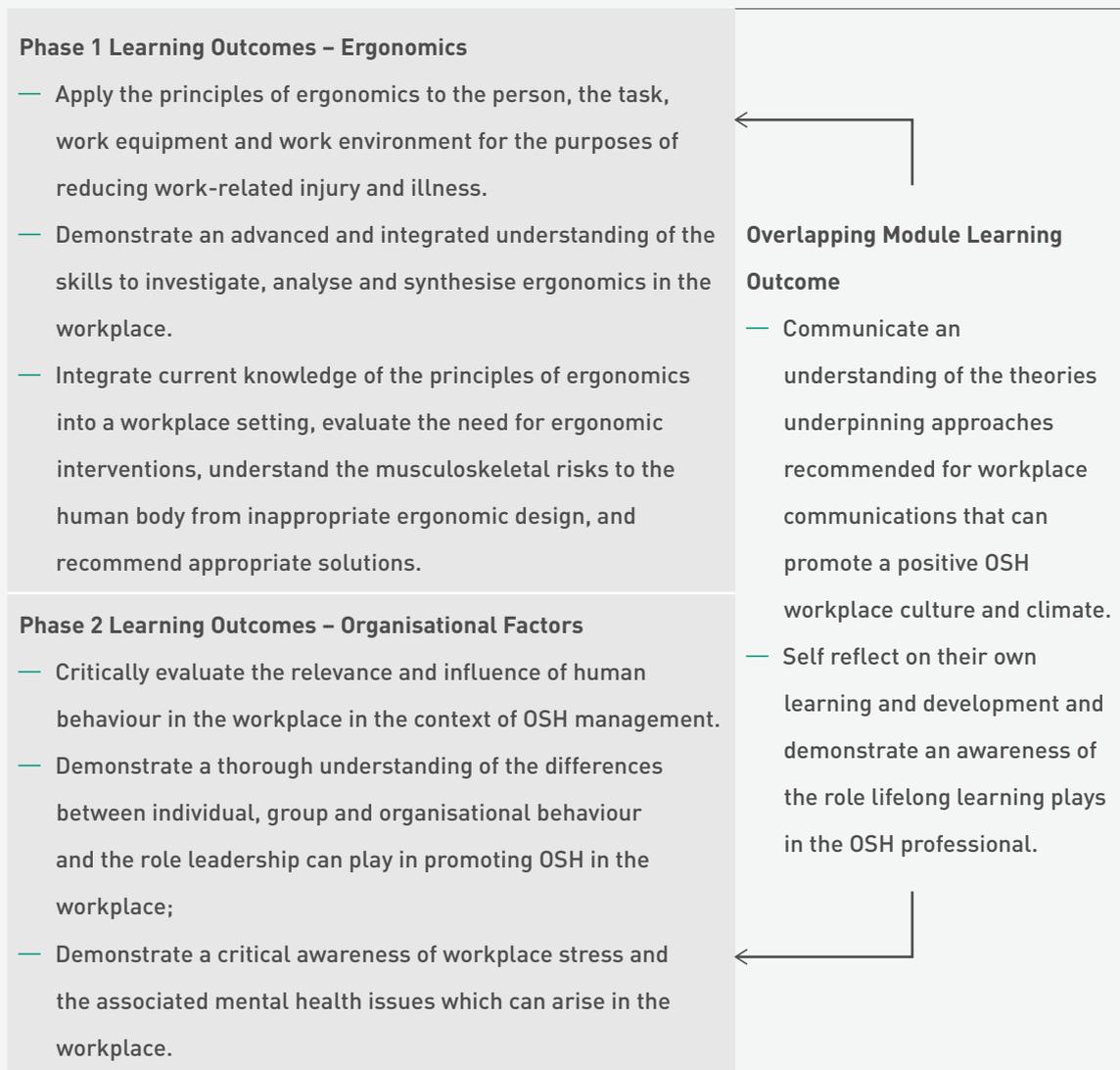


Figure 1. Module Learning Outcomes by Phase.

Pedagogy Redesign – Active classrooms led by student participation

The module was interspersed with three active class participation problem based learning workshops that delineated the phases:

- Week 1 Workshop 1 – Re-imagining your learning to become a lifelong learner;
- Weeks 2 to 5 Phase 1;
- Week 6 Workshop 2 – Becoming a Leader in your workplace;
- Weeks 7 to 11 Phase 2; and
- Week 12 Workshop 3 – Empathy and Empowerment in your workplace.

Week	Learning Phase	Assessment
1	PBL Workshop 1	
2	Learning Phase 1 - Ergonomics	Individual Workplace Ergonomic Risk Assessment
3		
4		
5		
6		
7	Learning Phase 2 – Organisational Psychology and Behaviour	Individual Learning Portfolio
8		
9		
10		
11		
12	PBL Workshop 3	

Figure 2. Module Structure.

The workshops were designed to engage the students in new ways of thinking about their learning, sharing their knowledge to encourage peer-to-peer learning, pushing them outside of their comfort zones and interacting with students outside of the classroom as well as confronting their own internal biases.

The workshops were supported by a flipped classroom format through the development of specific e-lectures for the students to watch on the Virtual Learning Environment (VLE) prior to attending the workshops. Each workshop was three hours long and held in an Active Learning Environment space (a room with round tables arranged to facilitate discussion and interaction) . Each workshop was framed at the start by using a cartoon relevant to the topic to inject humour into the classroom and engage with the students. Three ‘Calvin and Hobbes© by Bill Waterson’ cartoons were utilised.

Workshop 1 was designed to demonstrate innate individual learning abilities as well as group learning via two fast challenges including the ‘Lego Duck’ challenge (Figure 3) and the ‘Marshmallow Spaghetti Tower’ challenge (Figure 4). Both exercises were designed to engage the students with active learning and inject fun and creativity into the classroom. This then provided the context to the students that the module would be very focused on their individuality and how they directed their own learning.

Workshop 2 allowed the students to recognise their own leadership traits as well as how a workplace can develop its own leaders when an organisation's culture allows workers to flourish. The students created their own definition of leadership and then considered good and bad leadership traits (Figure 5). As part of this workshop students were encouraged to leave the confines of the classroom and interact with UCD community members to further their understanding of what leadership means to a wider cohort. By the end of the workshop the students in teams of five and six developed what they considered to be the ideal leader.

Workshop 3 focused on unconscious bias and discrimination in the working environment and how potential occupational health impacts could arise from workplace stress. The students progressed in teams through case studies provided by the Dublin Rape Crisis Centre on workplace bullying.



Figure 3. Lego Duck Challenge.

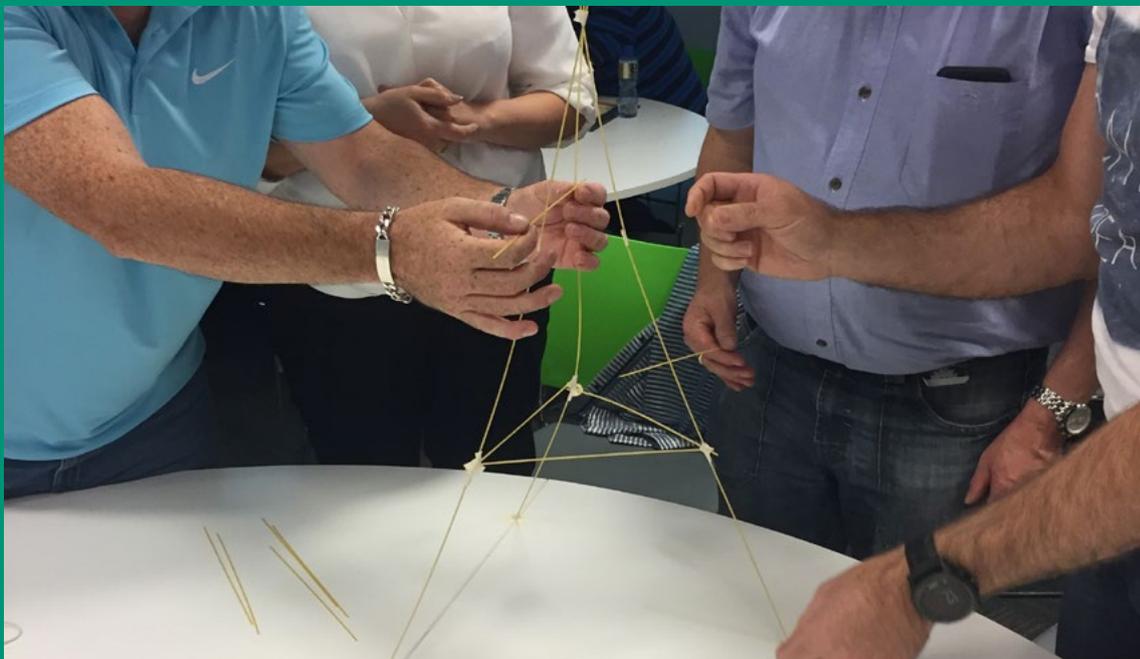


Figure 4. Marshmallow Spaghetti Tower Challenge.

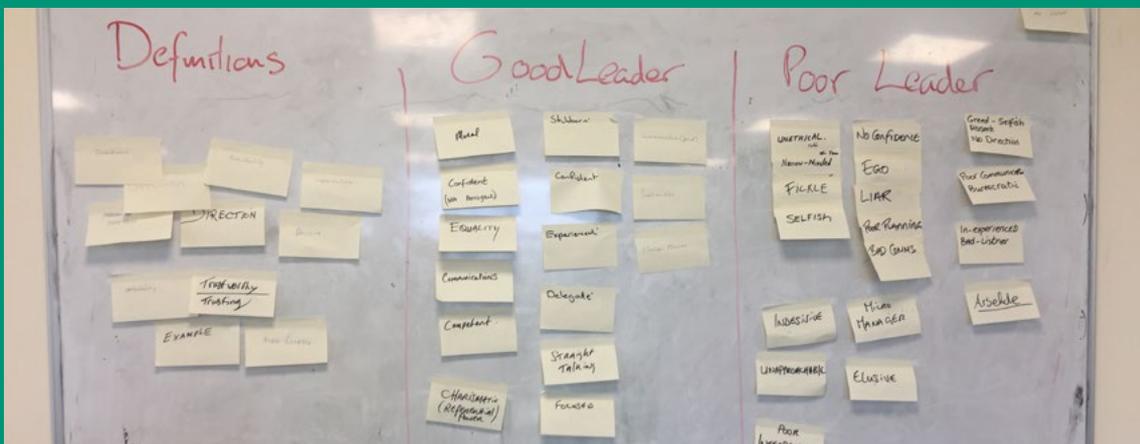


Figure 5. Leadership Traits.

Self-Directed Assessment

The adage 'assessment drives learning' has been universally acknowledged as an essential aspect of postgraduate education, characterising assessments with the scope of educational tools almost as specified learning activities designed to contribute to the learning process rather than merely to evaluate a student's progress in meeting learning outcomes (Wood, 2009). Ensuring that the assessment strategy drove the students' individual learning was a core objective of the re-designed module. By dividing the written assessment into two components and eliminating the end of semester exam, the workload for students and the module coordinator became more manageable (REDUCTION of assessment). Both pieces of assessment require self-reflection (student EMPOWERMENT).

Your Learning, Your Choice.

The most effective forms of learning are when we display a passion and interest in the topic we are studying. When given autonomy, students can become self-directed learners and develop their own research skills. It is thus imperative that all students be given the opportunity during their studies to self-direct their own assessment and demonstrate they are achieving their learning outcomes in a manner that allows them to become self-directed learners.

For the Human and Organisational Behaviour module the overriding focus of the assessment is for you to demonstrate you have achieved the learning outcomes yourselves, rather than being tested against specific criteria.

Each phase had a single piece of written assessment associated with it, linked to the module learning outcomes (VARIETY of assessment). In phase 1 the assessment focuses on a working environment chosen by the student within which to conduct an ergonomic risk assessment. (student CHOICE / AUTHENTIC assessment). Through online discussion students indicated their chosen workplace and their rationale for its use and then received initial thoughts and feedback from the Module Coordinator (Table 1). Formal written feedback was provided three weeks after the assignment was submitted (TRANSPARENT) so that it could be used to assist the student progressing through their second assignment.

In order to engage students with autonomous learning and exercise their self-direction, they were tasked with creating a learning portfolio for Phase 2 of this module (Table 2). This type of assessment focused on their personal growth and individual learning as they progressed through the module. A rubric was provided to the students in advance so that they could understand the expectations of what they should be able to achieve through a portfolio. Students could also discuss their ideas for demonstrating their learning innovatively via the online discussion forum. Snadden and Thomas (1998) derived the term 'portfolio learning': 'Portfolio learning is a method of encouraging adult and reflective learning for professionals. Derived from the graphic arts it is based on developing a collection of evidence that learning has taken place' (p. 192).

Portfolios have found their way into scientific and professional education, not only as tools for assessment of performance in education but also for professional practice in the workplace and in particular as tools to stimulate learning from experience (Van Tartwijk and Driessen, 2009). Ensuring that a learning portfolio achieves what it is meant to do in an educational setting depends on how much initiative and resources the students invest in them, and this is entirely dependent on if the portfolio is graded or not: essentially the assessment drives the learning (Driessen and van der Vleuten, 2000).

The decision to utilise a learning portfolio necessitates a good relationship and clear communications between the student and the module coordinator as it requires a continuous process of dialogue as the module progresses for the assessment to be invested in by the student. Thus the utilisation of online discussion is crucial. When students can see that their educators support and invest in these practical educational changes and value this type of learning approach, students are empowered to assume ownership of it in partnership with their educator. In order to ensure that the students 'buy-in' to the portfolio and that they can see that their educators are also investing in the process, an online briefing session was provided via e-lecture embedded into the VLE.

Assessment Value	45%
Word Count	Minimum of 1,500 words. Maximum of 2,500 words.
Assessment Type	Report
Topic	<p>This assignment is based on the ergonomic oriented learning outcomes as described in your module descriptor (Figure 1), please read them carefully. In order to successfully demonstrate you have achieved the learning outcomes of the module you must present the knowledge you gained over the course of the ergonomics phase of module in this report. When conducting your Ergonomic Risk Assessment (based on the demonstration of ergonomic toolkits in Week 4 and 5) consider the following statement in the context of your chosen workplace.</p> <p>‘Knowledge of hazards associated with ergonomic risk can lead to behavioural change in the workplace’.</p> <p>Consider how knowledge of ergonomic hazards, the principals of ergonomic design as a form of control measure and the associated musculoskeletal risks to the human body can influence worker behaviour, with reference to your own workplace. Discuss this concept with regard to the principals of ergonomics and a research evidence basis to support your argument.</p> <p>Please only utilise appropriate references from the year 2000 to present, with a minimum of fifteen and a maximum of thirty individual references. Also include an additional Personal Reflection (200 words not counted as part of the assignment word count) – this is a self-reflection on the process of learning rather than the content of what you learned.</p>
Student Learning Objectives via Assessment	<ul style="list-style-type: none"> — Evaluate a workplace of your choice from an ergonomic perspective. — Conduct an ergonomic risk assessment of that workplace. — Develop a critical understanding of how the ergonomics of that workplace can influence individuals and their interaction with their working environment. — Become aware of the ergonomic stressors that an inappropriately managed environment can have on workers.
Associated Learning Outcomes	<ul style="list-style-type: none"> — Apply the principles of ergonomics to the person, the task, work equipment and work environment for the purposes of reducing work-related injury and illness. — Demonstrate an advanced and integrated understanding of the skills to investigate, analyse and synthesise ergonomics in the workplace. — Integrate current knowledge of the principles of ergonomics into a workplace setting, evaluate the need for ergonomic interventions, understand the musculoskeletal risks to the human body from inappropriate ergonomic design, and recommend appropriate solutions.

Table 1. Assignment 1 Instructions.

Assessment Value	55%
Word Count	Minimum of 2,000 words. Maximum of 3,000 words.
Assessment Type	Learning Portfolio
Topic	<p>This assignment is based on your learning outcomes as described in your module descriptor (Figure 1), please read them carefully. In order to successfully demonstrate you have achieved the learning outcomes of the module you must present the knowledge you gained over the course of the module in a learning portfolio. A learning portfolio is a flexible, evidence-based process that combines reflection and documentation. It engages students in ongoing, reflective, and collaborative analysis of learning. It focuses on purposeful, selective outcomes for both improving and assessing learning. In essence you catalogue your learning and justify it with an evidence base as your progress through your learning. For this module a learning portfolio needs to demonstrate the learning outcomes of the module i.e. demonstrate to the reader that you understand what each of the learning outcomes is and document your knowledge as your progress on a week to week basis. In this regard an ideal learning portfolio for this module would document what you learned each week from the lectures and workshops and associated reading and research you conduct relating to the lectures or workshops. This would be supported by evidence from literature in the form of references and a personal reflection on which of the learning outcomes you consider that week's learning was linked to. As a guideline, you should do this each week to make steady progress over the twelve weeks of the module. If you leave it all to the end of the module you may have forgotten material you learned at the start. In considering a structure for your portfolio there is no specific way to document your progress, it is entirely up to you. However, a good example would be constructed as follows:</p> <ul style="list-style-type: none"> — Introduction (200 words); — Summary of each week (Weeks 1 and 6 to 12 of the module only) linking to specific learning outcomes (between 300 to 400 words each week with between 3 to 5 references as supporting evidence); Personal Reflection (200 words) –this is a self-reflection on the process of learning rather than the content of what you learned; and — Bibliography.

Student Learning Objectives via Assessment	<ul style="list-style-type: none"> — Develop an understanding of how organisations can foster a culture of openness. — Consider your own leadership capabilities and how you can influence your workplace safety culture. — Become aware of workplace psychosocial stressors and their impact in terms of occupational health. — Self-reflect on how learning on this module is shaping you. — Effectively demonstrate your learning over the course of this module.
Associated Learning Outcomes	<ul style="list-style-type: none"> — Critically evaluate the relevance and influence of human behaviour in the workplace in the context of OSH management. — Demonstrate a thorough understanding of the differences between individual, group and organisational behaviour and the role leadership can play in promoting OSH in the workplace; — Demonstrate a critical awareness of workplace stress and the associated mental health issues which can arise in the workplace. — Communicate an understanding of the theories underpinning approaches recommended for workplace communications that can promote a positive OSH workplace culture and climate.

Table 2. Assignment 2 Instructions.

Results and Feedback

The module redesign managed to re-orientate students to the concept that assessment is learning. Most of the students at the outset of the module think assessment is merely a task that must be done to get a grade to achieve a qualification (expressed via a Hopes-Needs-Concerns in class exercise in Workshop 1). By explaining to the students on day one of the module that the assessment strategy was their journey and their chance to display their passion and interest in relation to the topics being taught, it created a different sense of purpose in the students. The line of questioning about the assessment was very different to other modules with very active engagement online in discussion fora. Instead of seeing the assessment as a task, the students saw this piece of assessment as an opportunity to demonstrate their growth and their capability for learning.

The students enjoyed the new assessment strategy more and the PBL workshops enhanced their learning experience so they could clearly see the links between assessment, classroom experience and the learning outcomes and ultimately how they can be lifelong learners.

The initial problem was to ensure buy-in from the students. Accustomed to being given explicit assignment instructions, they were now given much more choice and freedom to demonstrate their learning and this proved a daunting experience for many initially. Explaining the rationale to students at the outset of the module, and again half way through, allayed those fears.

Student feedback in class at the final workshops alongside the formal student evaluations online noted this positive impact. Figure 6 outlines a series of small quotes from the students that have participated in the module over the last two years. More detailed examples from student evaluations in terms of what they liked about the module are provided below:

'I enjoyed the course and found the workshops to be quite good as they were based on real life scenarios rather than abstract ones some were reinforced by lectures, the learning portfolio was worthwhile revision';

'Liked workshops and continuous open assessment'

'Workshops and group work were very good'

'Good idea, well executed, refreshing'

'That I learn better when making my own judgements on experience – then looking at actual learning'

'Workshops were deadly. Active participation was excellent. Group interaction worked well. Module deadly';

'Workshops organised by Dr Buggy, Ergonomic Assessment Assignment, Completing the Learning Portfolio helped keep me motivated';

“More Calvin and Hobbes!”

“It was good to have a new learning process. Got me thinking differently”

Workshops very important because of practical learning experience”

“Lego ducks were a brilliant example”

“Very relevant, worthwhile and thought provoking”
“Good learning process.

‘I thought the case study was a better assessment than a thesis which suited me and I’d assume more students also’

Figure 6. End of semester student anonymous in-class quotations.

'The self-reflection assignment was very helpful to my learning as it allowed me freedom to research different aspects of the course without having to focus on passing an end of semester exam';

'Working in groups. The learning and reflecting. This module has helped me think about what I do now rather than not thinking before I leap. I really enjoyed the freedom of the learning portfolio. The variety of lecturers was good. The workshops worked well'; and

'The workshops are very beneficial. Being able to take risks and explore new avenues helped me develop a greater interest than if I just attended passive lectures'.

Advice for Others

Securing an active learning environment room for the duration of the module is essential. Opening up to the students by injecting humour into the teaching as well as providing personal context to deliver authenticity was crucial in gaining the students' trust for this learning process – particularly for mature adult part-time learners. Being active on online discussion fora with students to encourage their ideas and guide them is technically more contact time but it does benefit the students and they greatly appreciate it.

References

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