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CASE STUDY 4

# Where Universal Design, Inclusive Assessment and Adult Education Principles Coincide: Professional Skills and Authentic Assessment

Authors

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Discipline

Occupational Safety and Health

Student numbers

17-20



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## Introduction and Context

This case study describes how inclusive assessment strategies emerged from the process of introducing mixed-methods authentic assessment in a module, designed using adult education principles, for working adult students with a diverse range of qualifications, professional backgrounds and experience.

Most students on the Level-8 Higher Diploma in Occupational Safety and Health (OSH) in University College Dublin (UCD) are men (average 75%), with ages ranging from mid-20s to mid-50s, and almost all work full-time. Typically, students have substantial work experience and professional and domestic responsibilities. Highest previous educational levels are diverse and range between Levels 5 to 7 on the National Framework of Qualifications.

The module described in this paper was developed in response to two regulatory requirements:

- i An historic academic regulation that required elective module options for all undergraduate degree students, when the Higher Diploma comprised the early part of a Bachelors' degree; and
- ii a professional body requirement to develop specific professional skills.

The goal in developing this 'Professional Skills' module was to provide content that wasn't core to the curriculum, to allow for situations where a student might choose a non-OSH elective (theoretically possible, but practically impossible for most because of timetabling). Opportunities were therefore sought to create a module that facilitated students to acquire or further develop skills that, depending on their involvement/experience in OSH practice, were personally and professionally desirable, but not OSH-specific. Because of the wide variety of prior qualifications and experience among students, assessment needed to be flexible, to include choice for individuals, and to tolerate error so that less experienced students were not at a disadvantage. Authentic assessment was ideal because such students value collaborative, real-world and transferrable outcomes (Ashford-Rowe et al, 2014).

Knowles et al (2015) describe Conti's Principles of Adult Learning Scale (1978), which identifies factors used in teaching adults, which include:

- a learner-centred activities, i.e. encouraging students to take responsibility for their own learning;
- b personalising instruction, i.e. supporting rather than lecturing;
- c relating to experience, i.e. planning learning so that its relatable to students' own activities;
- d climate building, i.e. eliminating learning barriers and encouraging interaction in a friendly informal setting; and
- e allowing students flexibility for personal development, i.e. facilitating learning rather than providing knowledge.

These teaching factors grounded in adult learning principles were at the core of module and assessment design. The module had formal OSH-related learning outcomes (table 1) and the OSH-related objectives sought to give students opportunities to use individual and team-based activities and peer-critique to:

- a collaborate and learn from one another;
- b review, assess and critique real OSH systems outside of their own experience;
- c prepare and deliver professional documentation;
- d learn to sell the OSH message and to market themselves professionally;
- e identify, recognise and acknowledge their professional strengths and weaknesses;
- f identify and develop a plan for continuing professional development; and
- g to do all the above in a safe instructional climate.

**Table 1: Module Learning Outcomes**

**At the end of the module students will be able to:**

- Identify work-based learning opportunities;
- Demonstrate work-based learning, which captures a range of activities that contribute to the student's development as an OSH professional, including, but not limited to:
  - a preparing an up-to-date professional CV
  - b delivering a professional presentation
  - c documenting and reflecting on continuing professional development activities
  - d reflecting on a multidisciplinary ethical dilemma.

In practice, the module uses a problem-based assessment approach to provide space for students to reflect on their personal skill-set and career aspirations, and to identify personal and professional growth and development needs and opportunities in the context of their individual experience and involvement in OSH. Because of the diverse student characteristics (age, work / life experience and responsibilities, professional qualifications and sector of industry) inclusivity was important. Assessment was designed using adult education principles to include a variety of assessment types, choice within assessment components, and where possible to grade students against self-set objectives (Knowles et al, 2015).

## Design and implementation

An assessment-driven elective module with minimal didactic content was designed and moved through iterations to reach its final format. Ultimately, students are assigned four assessment tasks and given multiple relevant online resources but few classes; the module schedule provides physical space and time-tabled opportunities to work together. In all activities, the instructional climate is supportive and flexible. Key personnel involved in module delivery include:

- i UCD Careers Office;
- ii Programme industry liaison manager;
- iii Experienced OSH alumni who host placement students and/or provide expertise for the job application processes; and
- iv OSH academics who facilitate role-play presentations.

The four key tasks comprise:

- a A short work placement (20%)  
Because students work full-time, they undertake a one-day work placement. They select a worksite from a menu of organisations (often hosted by UCD OSH alumni), ideally targeting an unfamiliar sector to maximise learning. They set personal learning objectives in advance of the visit. They learn through meeting with the OSH manager, and with other personnel holding senior OSH responsibility. Students write a critical review of the OSH arrangements, which is sent to the local OSH manager for information, and they reflect on the professional learning experience of the visit. Grading and feedback are equitable by taking account of the student's self-set objectives.

**b Job application process (20%)**

Students go through the process of applying, and being interviewed, for an OSH role, choosing one of two recently-advertised real-life job descriptions. They gain experience in:

- i** developing a CV (for many this is a first experience);
- ii** seeing the output of a (mock) application and short-listing process; and
- iii** being interviewed by a two-person panel, comprising an experienced senior practising OSH professional and academic staff with experience in OSH practice.

Students receive immediate and authentic verbal post-interview feedback, and a take-away rubric giving feedback on the CV, a blank copy of which is provided in advance (Figure 1). Students' presentations are judged on individual performance and not in relation to one another – i.e. multiple students could end up being eligible to be offered the same role.

**c Group and presentation skills applied to an OSH ethical dilemma (40%)**

Students self-allocate into teams and take part in a role-play presentation scenario that requires each team to propose a solution to a different work-based OSH ethical dilemma, based on published real-life case studies. Each team member takes on a different OSH role (e.g. employer, OSH manager, local manager, trade union or safety representative, employee or community representative) for both problem-solving and the presentation. All team members present (representing their allocated role) and are questioned on the rationale for their professional decisions by an audience of academic staff and peers (i.e. their fellow students, who are OSH professionals). An immediate and authentic feedback discussion takes place verbally between the audience and the team. Through the process, students learn how to give and receive feedback and students with limited presentation experience are supported by the team approach to design and delivery. Individual students later receive a completed presentation-related rubric from the judging panel (staff) (Figure 2).

<b>CV criteria</b>	<b>Poor</b>	<b>Fair to Good</b>	<b>Very good</b>	<b>Excellent</b>
Grammar and spelling	Writer makes numerous errors in grammar and/or spelling.	Writer makes some errors in grammar and/or spelling.	Writer makes virtually no errors in grammar and/or spelling.	Writer makes absolutely no errors in grammar or spelling.
Capitalization and punctuation	Writer makes numerous errors in capitalization and punctuation.	Writer makes a few errors in capitalization and punctuation.	Writer makes virtually no errors in capitalization and punctuation.	Writer makes absolutely no errors in capitalization and punctuation.
Neatness	CV and cover letter are typed but are very unprofessional in appearance. They look like they were done in a hurry or improperly proofed and formatted.	CV and cover letter is typed and but is somewhat unprofessional in presentation. They look like they were proofed and formatted with undue care and attention.	CV and cover letter is typed, professional in presentation, and is easy to read with no distracting error corrections. They appear to have been proofed and formatted with care.	CV and cover letter is typed, very professional in presentation, very easy to navigate and appears to have been proofed and formatted with great care and attention to detail.
Format	Complies with less than 75% of the requirements for a CV and cover letter.	Complies with more than half of the requirements for a CV and cover letter.	Complies with almost all the requirements for a CV and cover letter.	Complies with all the requirements for a CV and cover letter.
Content	The CV and cover letter seemed to be a collection of unrelated ideas. It was very difficult to figure out the chronology and/or qualifications, skills and experience of the applicant.	The ideas were somewhat organized, but were not very clear. It took more than one reading to figure out the chronology and or qualifications, skills and experience of the applicant.	The ideas were expressed in a pretty clear manner, but the organization could have been better.	The ideas were expressed in a clear and organized fashion. It was easy to figure out the chronology, qualifications, skills and experience of the applicant.
Application	The application was not submitted exactly as prescribed			The application was submitted exactly as prescribed

**Figure 1: Rubric for CV**

	Poor	Fair to Good	Very good	Excellent
Organisation	Audience might not understand presentation because there is no sequence of information.	Audience could have difficulty following the presentation because student jumps content around.	Student presents information in a logical sequence which audience should be able to follow.	Student presents information in a logical, interesting sequence which audience can easily follow.
Subject knowledge	Student displays only a very superficial or generic knowledge of subject and/or of the wider OSH context.	Student displays a surface knowledge of subject and/or of wider OSH context.	Student displays a reasonable knowledge of subject and/or of the wider OSH context	Student demonstrates a deep knowledge of subject and/or the wider OSH context.
Evidence base	Information is only partially complete and/or is inaccurate with limited, inadequate or no sources provided	Information is partially complete with some inaccuracies and limitations in sources	Information is mostly complete and accurate with some primary and some secondary sources	Information is complete and accurate and cites relevant and appropriate primary sources.
Visual aids	Student uses superfluous visual aids or inadequate visual aids. Presentation has numerous spelling and/or grammatical and/or technical errors.	Student uses visual aids that don't adequately support the presentation. Presentation has some grammatical and/or technical errors.	Student's visual aids are relevant to the presentation. Presentation has few or no spelling and/or grammatical and/or technical errors.	Student's visual aids explain and reinforce the presentation very professionally. Presentation has absolutely no spelling and/or grammatical and/or technical errors.
Eye contact	Student makes minimal eye contact and/or over-reads from notes and/or turns back on audience.	Student occasionally uses eye contact, and relies heavily on notes. Turns back on audience on a number of occasions.	Student maintains reasonable eye contact, and does not turn back on audience. Refers to notes in an appropriate way.	Student maintains eye contact across the audience, and does not need to rely on notes.
Verbal technique	Student mumbles and/or incorrectly pronounces terms, and/or speaks too quietly / quickly for audience to hear.	Student's voice is low and/or incorrectly pronounces terms. Audience members have difficulty hearing presentation.	Student's voice is clear. Most audience members can hear presentation.	Student uses a clear voice and correct, precise pronunciation of terms so that all audience members can hear presentation.

**Figure 2: Rubric for Presentation**

#### **d Professional Reflection (20%)**

A key design-feature of the module is that students are given space to reflect on their careers, and at the end of the module each student submits a professional portfolio that includes:

- i** An inventory of career trajectory and development to date;
- ii** An inventory of continuing professional development activities (with evidence) from the past three years;
- iii** a career plan for the forthcoming three years.

Items i) and ii) are a requirement for professional body membership, so students leave with either a personal gap analysis, or much of the work completed, for a membership application. The module coordinator grades the professional and career reflections. Students receive, about 6 months before graduating, bespoke individual confidential feedback and career advice, that takes account of their performance on the module and the personal professional information they risk providing.

While the grading process and the final grade are compliant with the University's grade descriptors, in the placement, job-application and reflection components students are assessed and given feedback against self-expressed goals and aspirations, which promotes confidence-building for less experienced students.

## **Evidence of impact**

Historically, this module solved the challenge of providing an elective non-OSH module in a packed curriculum for students with limited contact time; however, it has become established as an important core and popular module. Feedback indicates that it achieves the goal of providing students with authentic experiences for professional skills development in the safe environment of their own community of learners. Unstructured positive feedback from students is visible through good engagement in all activities, and unsolicited feedback (and gratitude) via email, sometimes long after a student completes the programme. Peer-learning emerges as a key feature; for example, many students did not know how to prepare slides while some were experts, and most students found an area where they excelled and could share a skill. Structured feedback is collected using data from the university's online feedback

system (a 5-point Likert scale from Disagree [1] to Agree [5]), which achieved mean response rates of 60% and mean scores  $\geq 4.0$  over a four-year period (Tables 2 and 3). Open comments are equally positive and/or constructive (Figure 3).

**Table 2: Evaluation statements**

Q no.	
<b>Q set by</b>	Statements (Response via 5-point Likert Scale from 1 – strongly disagree – to 5 – strongly agree)
<b>1. University</b>	I have a better understanding of the subject after completing this module
<b>2. University</b>	The assessments to date were relevant to the work of the module
<b>3. University</b>	I achieved the learning outcomes for this module
<b>4. University</b>	The teaching on this module supported my learning
<b>5. University</b>	Overall, I am satisfied with this module
<b>6. Programme</b>	Reflection: This module encouraged me to reflect on my professional career plans
<b>7. Programme</b>	Relevance: This module was relevant to my professional needs

**Table 3: Module Evaluation 2013-2017 Quantitative**

Year	Class N (Response %)	Q1	Q2	Q3	Q4	Q5	Q6	Q7
2013-14	13 (69%)	4.6	4.4	4.4	4.4	4.1	4.6	4.2
2014-15	17 (59%)	4.1	4.1	3.9	4.1	3.9	4.5	4.4
2015-16	16 (56%)	4.7	4.4	4.3	4.6	4.6	4.6	4.4
2016-17	18 (61%)	3.9	4.2	4.0	4.1	3.8	3.7	3.8
Mean	16 (61%)	4.3	4.3	4.2	4.0	4.1	4.3	4.2



**What  
helped your  
learning?**

Figure 3: Module evaluation qualitative (sample comments)

- The importance of documenting what you have experienced and achieved so far in your career when applying for a position. The importance of being professional and record keeping. I did find presenting the reasoning for a good safety and health culture in an organisation very helpful.
- Up to date and relevant learning. Variety to module which covered the variety of OSH sectors in which students worked or would like to work in. Very good and constructive feedback on each assignment.
- 1: The way the module built up step by step.  
2: Good communication and repetition by lecturer of core learnings.  
3: Presentation section was excellent for confidence and reflective writing was very thought-provoking.
- I liked being made do a presentation (out of my comfort zone and experience). I think it was a great idea for the work experience and completing the learning portfolio.
- Helped us prep CPD and CVs...always useful! Great to start thinking about chartered status of [professional body] in advance of course completion.
- The portfolio assessment has really helped me to understand the importance of CPD in OSH.
- At the start I thought this module was a waste of time, however I changed my mind and got benefit from it seeing as how I have not been interviewed in over 10 years, similarly my CV had not been updated during this period, likewise I knew nothing about CPD
- Academically I'm not the strongest, however making contacts and bringing people along with me is something I'm good at. The feedback I received has reassured me of this.

The comments from [tutor] were instructive and helpful. The discussions, disagreements, and compromises surrounding our debating really made the topic of ethics come alive. I not only saw ethics come alive but I also saw how the team players supported and adapted to my own learning difficulties

Initially students may be wary of exposing themselves by presenting in teams and being interviewed by potential employers; however, staff have witnessed most students increasing in confidence as they progress through the module. Occasionally, individual students provide feedback that the module was of limited value to them, and a waste of their time and fees.

## Discussion and conclusion

Staff, external examiner and student feedback confirm that this assessment-based module provides authentic learning, assessment and feedback for students, within a community of fellow-learners / OSH practitioners, in a supportive instructional climate that allows choice within each component, tolerates error (by being mostly process-driven), permits objective-setting where possible thus making grading equitable, and allows space for students to identify areas for personal professional development and receive bespoke career advice. Thus, in retrospect it is obvious that inclusive assessment was built-in from point of design (Keating et al., 2012), although it was not recognised or labelled as such during design.

The inclusive assessment principles, which are so visible in the module now, emerged over time from an instructional design that was based on the principles of adult education, which are compatible with the principles of Universal Design. Universal Design in higher education considers a wide range of characteristics of the non-average university student, including age and prior educational experience (Burgstahler, 2012); the premise is that design benefits all students, not just those that tick a 'minority box'. Appendix A shows the authors' retrospective application of the CAST Universal Design framework (CAST, 2018) to the learning activities / assessment components on this module. It confirms that module assessment addresses the domains of Multiple Means of Engagement and two domains of Multiple Means of Action and Expression, and that Expression and Communication is achieved more so at holistic (module) level than in individual components.

The main challenge in this module has been that almost every year, a student reports in anonymous feedback that some, or all, of the activities are a waste of their time. Further feedback through class small-group discussions suggested situation-specific reasons for very experienced individuals, but didn't pinpoint any single component or issue, so there was no obvious fix. Reviewing this issue now from the perspective of inclusive assessment principles, it may be feasible going forward to consider introducing an option for bespoke alternative assessment for professionally-senior students who can provide evidence that they don't need to develop the skills that most of the students' value, but that still meet the module learning outcomes.

Anyone who runs a module with a practical application, where students are, or shortly will be, working, should consider whether Universal Design principles are already embedded; and if not, it may not take much redesign of components of the module to meet the key criteria. In this case study, the complementary collective principles of adult education, Universal Design and inclusive assessment became evident over time. Together they provide students with professionally authentic assessments, that provide opportunities within assessments to address individual work and career needs, making the experience meaningful and authentic to students as learners and as professionals.

## References and Resources

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3. CAST (2018). *Universal Design for Learning Guidelines version 2.2*. (graphic organiser). Wakefield, MA. Retrieved from: <http://udlguidelines.cast.org>
4. Conti, G.J. (1978) *Principles of Adult Learning Scale: An Instrument for Measuring Teacher Behaviour Related to Collaborative Learning – Learning Mode*. Retrieved from <http://robert-vroman.com/resources/pals.pdf>
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## Appendix A:

### Application of CAST criteria to module assessment components

CAST Design principles	Recognition networks 1. Perception; 2. Language & Symbols; 3. Comprehension.			Strategic networks 4. Physical Action; 5. Expression & Communication; 6. Executive Functions.			Affective networks 7. Recruiting Interest; 8. Sustaining Effort & Persistence; 9. Self-Regulation.		
	1	2	3	4	5	6	7	8	9
	Provide Multiple Means of Representation			Provide Multiple Means of Engagement			Provide Multiple Means of Action & Expression		
Module level application					5.1	6.1	7.1	8.1	9.1
						6.2	7.2	8.2	9.2
						6.3	7.3	8.3	9.3
						6.4		8.4	
<b>Assessment component level application</b>									
Work Placement						6.1	7.1 7.2	8.1	
CV & Interview						6.2	7.1 7.2 7.3	8.3 8.4	9.3
Ethical prep (teamwork and roleplay)						6.2	7.2 7.3	8.3	
CPD and Career Development						6.3 6.4	7.1 7.2 7.3	8.1 8.4	9.1 9.3

**CAST Legend for Design Principle:** Numbers from 1 to 4 in coloured cells indicate the numbered checkpoints (e.g. 5.1, 5.2 and 5.3) from the CAST UDL Guidelines Graphic Organiser. (Universal Design for Learning, CAST v2.2, 2018)

5.1 Use multiple media for communication

8.1 Heighten salience of goals and objectives

6.1 Guide appropriate goal-setting

8.2 Vary demands and resources to optimise challenge

6.2 Support planning and strategy development

8.3 Foster collaboration and community

6.3 Facilitate managing information and resources

8.4 Increase mastery-orientated feedback

6.4 Enhance capacity for monitoring progress

9.1 Promote expectations and beliefs that optimise motivation

7.1. Optimise individual choice and autonomy

9.2 Facilitate personal coping skills and strategies

7.2 Optimise relevance, value and authenticity

9.3 Develop self-assessment and reflection

7.3 Minimise threats and distractions

