Experiential Learning Vignette 4: Negotiated Work-Based Learning

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Negotiated Work-Based Learning and Assessment at Heriot-Watt

The assessment for Heriot-Watt University's (HWU's) Graduate Apprenticeship (GA) courses in the BEng (Hons) Engineering: Design and Manufacture (EDM) programme is comprised of two types of assessments: class tests/assignments and Work-based learning (WBL) assignments. Typically, a minimum of 80% of the assessment is work-based with the remainder coming from the class tests or assignments.

WBL assignments are done in the workplace, where possible as part of the apprentice's regular duties. Unlike the traditional Vocational Qualifications (VQ) assessments, these GA WBL assessments are not mapped against a rigid set of outcomes: there will be some defined learning outcomes, but it is up to the learner, Work-based Mentor and Personal Tutor to devise ways that the apprentice can demonstrate the required outcomes in terms of knowledge, skills and competencies to the appropriate level. Some of this assessment may be similar to VQ assessments in the sense that it amounts to "has the learner demonstrated competency in using a procedure or piece of equipment to the required standard", but many will look like traditional academic assessments, in terms of the "how and why" and the link to fundamental theory, but contextualised to the workplace of each learner.

Outcomes

Each learner will produce unique evidence for their work-based learning assessments based on the available activities of their workplace, the selection of which requires learners to develop the skills of meta-cognition in order to recognise and learn from these activities. The development of these meta-cognition skills can be difficult for the learners to achieve but extremely beneficial for them as it allows them to link the learning to their work.

An all-year time-frame gives the learners all year to work on their work-based learning assessment, we create enough space to allow learners to attain what is most valued in learning whilst allowing them to exercise their right to succeed or fail. The all-year nature of the courses also serves to defeat the compartmentalisation of learning, which arises when courses are fully delivered and assessed within one semester with no requirement or expectation to revisit or build on that learning. This also serves to help learners to recognise that real-world engineering problems are multi-faceted and can rarely be

Why negotiated learning?

Pedagogically there are a myriad of issues surrounding the use of end-point assessments and examinations such as their encouragement of short-term learning and poor work habits (Gibbs, 1992; Dysthe, et al., 2007). Instead, the assessments in HWU's GA programmes encourage deeper learning and a higher level of learner autonomy and responsibility as advocated by the Quality Assurance Agency (QAA) in their quality code document (QAA, 2018).

The WBL assignments in such courses require learners to situate their learning using contextualised examples of the skills, knowledge and/or theory delivered as part of the course to demonstrate their competence against the learning outcomes. This is just like the apprentice tailors studied by Lave (1988) who observe that apprentices gradually participate fully in the practices of the profession over the course of their apprenticeship. Building on the process described (c.f. Stein 1998, after Lave 1997) as "way-in" and "practice", could this be described more clearly as "observe-try-practice-perfect" with the first half taking place in the classroom and the latter half in the workplace. For some learners this might flip to "observe, practise, reflect, perfect" explaining concepts in the classroom they have previously seen in the workplace but not fully understood.

Wider context of negotiated learning

The Engineering Council's [Engineering Gateways](#) degrees allowed flexible pathways to becoming a professional registered engineer, often with the use of negotiated learning (called Learning Contracts) – see their [toolkit](#) for relevant ideas. Further information can be found via the Engineering Council website on [Work-based Professional Engineering degrees](#).

Negotiated learning is used in other apprenticeship programmes, such as Open University's IT: Software Development, and Cyber Security. Further details from a QAA Scotland Enhancement Project can be found via this [OU written paper on negotiated learning](#).

tied to a single learning outcome. As multiple courses are running in parallel in this case, learners are actively encouraged to link their learning together with the learning from other courses, integrating and deepening their understanding and decompartmentalising their learning. This allows the learners to economise on their long list of required work-based evidence by matching complementary requirements into a smaller number of activities, which in turn facilitates a deeper approach to learning as students forge stronger links between different parts of the course theory.

Recommendations for others

Each learner will produce unique evidence for their work-based learning assessments based on the available activities of their workplace, due to this it is helpful to develop a common set of guidelines and marking rubrics in order to help both learners and instructors. These must incorporate sufficient detail and examples to ensure a level of consistency between different learners. Support sessions as ever are **essential**, as learners, especially in their first year, do not always read instructions!

One must also recognise that real-world engineering problems rarely arise to a schedule that matches a traditional degree programme; extending assessment deadlines beyond the standard semester dates helps to get the best from our learners.

Further information

More information about the Heriot-Watt approach to negotiated assessment in their Graduate Apprenticeships programme can be found in this [paper](#).

References

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