Industry engagement in delivering online education in TUS

Case Study of engaging full-time Industry Practitioner Tutors in the conception, design, validation/accreditation and delivery of an online postgraduate diploma for work-based learners.

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1   Background

1.1   The REAP Project

The Regional Enterprise Academic Partnership (REAP) project, funded under the 2018 HEA Innovation and Transformation call, is a University of Limerick (UL) / Technological University of the Shannon (TUS) / Mary Immaculate College (MIC) higher education strategic institutional partnership to develop a best practice framework in the engagement and governance of external/practitioner tutors delivering blended/online professional education programmes, and the development of targeted upskilling to improve the quality of teaching by external tutors in online delivery methods.

1.2   The practitioner/external tutor

In the REAP context, the "practitioner/external tutor" is the experienced industry, professional services or public sector subject-matter expert who is contracted part-time by the HEI, to develop and/or deliver modules for flexible/online professional education programmes.

2   Basis for development of new programmes in TUS

This case study will focus on the application of the REAP project in three post graduate programmes in the Technological University of the Shannon Midwest by the Department of Mechanical and Automobile Engineering and Flexible Learning. The Department of Mechanical and Automobile Engineering provides courses at Craft Apprenticeship, Higher Certificate, Degree, Honours Degree and the Postgraduate Degree levels in Mechanical Engineering, Precision Engineering, Automobile Engineering, Facilities Engineering and Agricultural Engineering. The Department of Flexible Learning in TUS has responsibility for flexibly delivered programme be they online or face to face part time. In September 2019 the Departments of Mechanical Engineering and Flexible Learning began a process to develop the three following industry focused post graduate diplomas:

- Postgraduate Diploma in Science in Process Validation and Regulatory Affairs (Medical)

- Postgraduate Diploma in Science in Process Validation and Regulatory Affairs (Pharmaceutical)

- Postgraduate Diploma in Science in Process Validation and Regulatory Affairs (Food & Drink)

All three programme are 60 ECTS and full calendar year in duration and delivered fully online. All three are funded under the Higher Education Authority (HEA) Human Capital Initiative. In total there are 72 students enrolled on the programmes.

Following discussions with programme teams and the Explore Engineering[1] talent group these programmes were chosen as being suitable for development due the demands of the Midwest Region.

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[1] Explore Engineering is an Industry-HEI network within the Midwest region of Ireland which aims to increase the quantity and quality of engineering talent in the region.

The Mid-West accounts for 9.3% of employment in Ireland (213,300 persons) (Solas, 2020)[2] . Of the workforce of 213,000, 36,800 work in manufacturing industries, including prominent Medical, pharmaceutical and food & drink multinationals, Abbot, Stryker Orthopaedics, Boston Scientific, Johnson and Johnson and ABP.

3   National and international context to industry engagement

At the core of this case study is the relationships between industry, academia and government, Estowitz (2002) titles this relationship as the Triple Helix model.
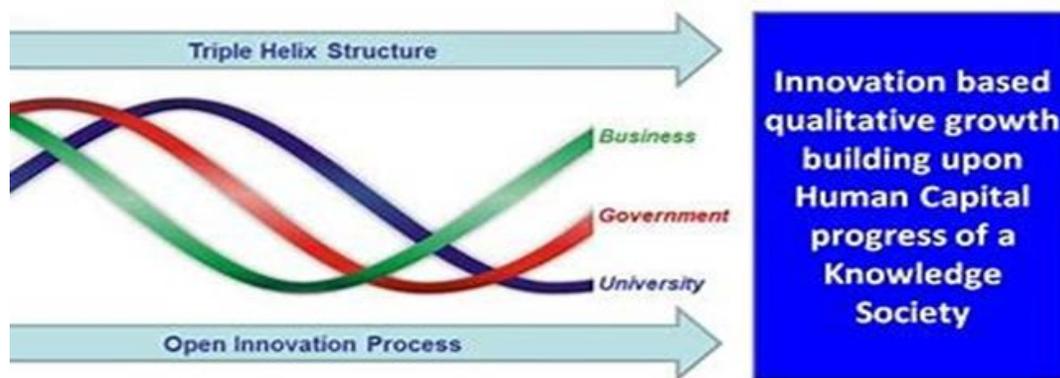

Figure 1Triple Helix model (Estowitz,2002)

Industry–HE partnerships have been in existence for some time (Ankrah & Al-Tabbaa, 2015), serving a common goal (Edwards & Coulton, 2006) to prepare future economies (Alexander et al, 2019), upskill a workforce and provide graduates with access to special expertise, to "connect students to the cutting edge ideas and practices of the professions" (Beaton and Sims 2016, p. 2).

The agenda for the modernisation of Europe's HE systems prioritises industry-HE alliances in order to enhance the contribution of HEs to jobs and growth (European Commission, 2011) and enhance the potential for innovation in Europe (Edmonson et al, 2012).

All three elements of the triple helix benefit by recognising each other's strengths, inspiring each other and contributing to economic advancement. Etzkowitz (2008) outlines that the original mission of the higher education has changed from knowledge conservation to knowledge creation to the application of this new knowledge.

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[2] (https://www.solas.ie/f/70398/x/621e6384e0/15499_solas_slmru_info_2020_midwest.pdf)

Within the Irish context, Ireland's labour supply is expected to grow by 6.9% over the coming decade (CEDEFOP, 2019); with this comes the need to upskill the labour force to adapt to redefined roles and prepare for emerging job roles that require different skillsets. This has also been identified at European level through the agenda for the modernisation of Europe's HE systems (European Commission, 2011) which prioritises industry-HE alliances in order to improve quality and relevance of HEIs, and to enhance the contribution of HEIs to jobs and growth and enhance the potential for innovation in Europe (Edmonson et al, 2012).

The National Strategy for Higher Education to 2030 states the importance of partnerships between academia and industry, and suggests "exposure of industry employees to institute programmes supports and facilitates progression and the raising of NFQ levels of the workforce" (Hunt 2011, p. 49). The recognised skills shortage in ICT, Biopharma, Smart Manufacturing and Finance as stated in Ireland's National Skills Strategy 2025 (Department of Education and Skills, 2016) provides an opportunity for flexible learning solutions between industry, research and higher education that can support innovation for economic growth, and the development of lifelong learning skills.

The REAP Project and Industry Engagement

The research team are part of the Regional Enterprise-Academic Partnership (REAP) project which aims to establish best practices in building HEI capacity by engaging practitioners in the design and delivery of online and blended learning. The REAP project will also propose a framework to structure this engagement of practitioners, based on research into international best practice. The Making Industry University Partnerships Work report advises that leadership for collaboration should be prioritised within HE institutional strategies. This is the case within the institutional strategies of Mary Immaculate College (2015), the University of Limerick (2017), and Limerick Institute of Technology[3] (LIT Strategic Plan, 2018).

The REAP Project focuses on nurturing partnerships with industry and the public service and community sectors, through formalising processes that govern the collaborations between industry and academia and supporting the professional development of practitioner-teachers within HE to build long term sustainable relationships where experts on both sides can work together.

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[3] The Limerick Institute of Technology (LIT) changed it's name to Technological University of the Shannon (TUS) in 2021.

4 Process of engaging Industry practitioners in programme development

This case study presents details of Irish industry practitioners and Irish (HEIs) engagement in conception, design, accreditation and delivery of online programmes, the interventions to support this engagement and to formalise processes and systems to embed and scale-up this collaborative practice, to bridge the gaps between industry and academia. While industry practitioners are increasingly more prevalent in the delivery of programmes in Higher Education, but little research exists on the role of industry practitioners can play in being involved in teaching and learning and the complete lifecycle of programme development.

Having identified the academic programmes to develop the programme team identified industry practitioners who were keen to become involved in the development process of the programme. These industry practitioners were already known to the programme team through industry networks. They came from several of the biggest pharmaceutical and medical manufacturing employers in the region. These industry practitioners now became part of the academic development process. The standard/traditional process of academic development in TUS, is outlined in figure below:
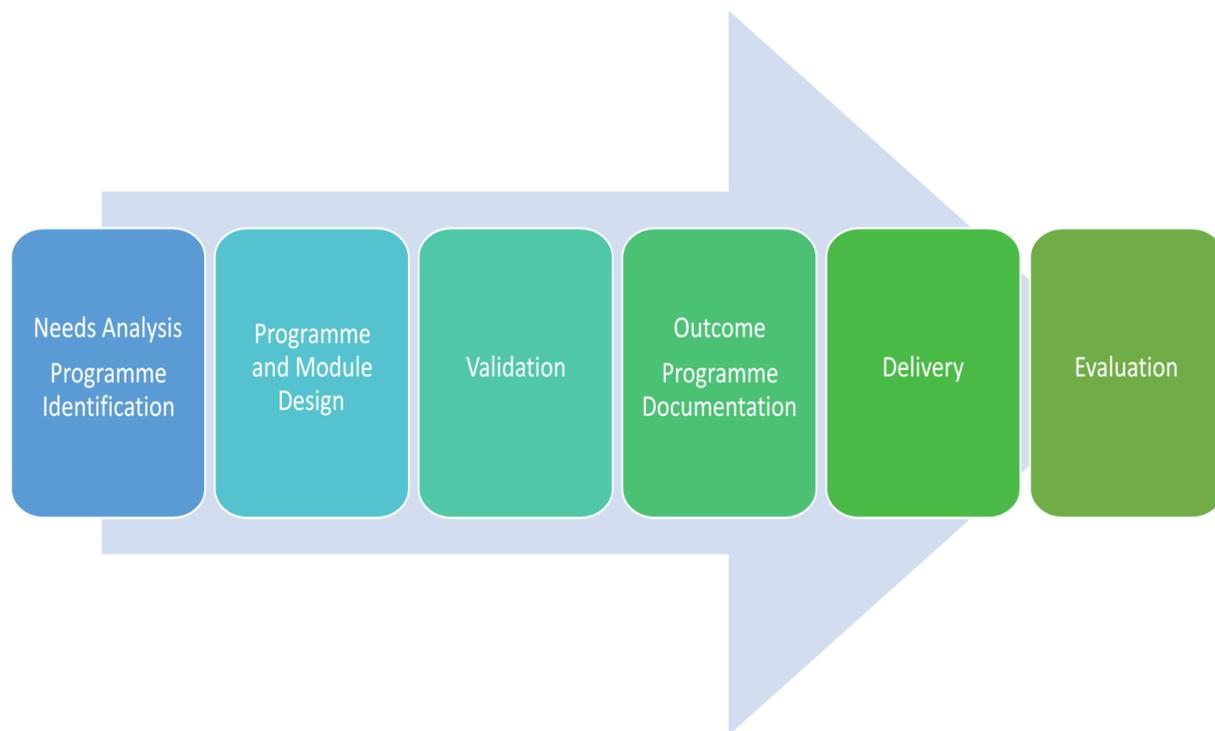
Figure 2 Standard/traditional process of academic programme development

This standard or traditional model follows set steps of needs analysis programme identification, programme and module design, programme validation, programme documentation and finally delivery and evaluation. This traditional model with TUS Midwest, had practitioner involvement in the stage 1 needs analysis where industry practitioners would suggest courses to develop, in stage 3 validation where industry representatives sat on the validation panel, in stage 5 where industry practitioners deliver guest lectures and finally in the final stage of evaluation where industry is surveyed on their experience of the programme during programmatic review every 5 years.

In the model used by the REAP project, Industry practitioners became involved as core contributors in each of these stages as a part of the programme teams. A comparison of the traditional model of programme development and the REAP model is presented in table below:

Programme Development Model	Traditional Model Industry engagement	REAP MODEL Industry Engagement
Needs Analysis – Programme Identification	Seek input via interviews and surveys	Collaborative research of industry colleagues. Recruitment of Practitioner Lecturers
Programme Design and module design	Limited input	Round table involvement and development of full programme
Validation	Participation in the Verification Panel	Advocates for the program reporting to the Validation Panel
Outcomes	Programme Documentation approved through AC	Programme Documentation approved through AC
Delivery	Nil or limited input (guest speaker)	Delivered by Practitioner Lecturers with supervision
Evaluation	Every 5 years	Annually

5 Feedback from Industry Practitioner experience in programme development and delivery

All three programmes began in September 2020 and finished in December 2021. In June 2021 the above programme development lifecycle was reviewed internally to gain insight from the programme team as to how they felt this process worked. Focus groups were held with the programme team – on their experience in designing developing and delivering on the programme.

Interviews questions were structured using the three guiding principles of the BLASST framework. The programme team which included four sessional/industry practitioners and the programme leader who was a permanent academic member of staff were invited to attend these focus groups.

The BLASST Framework

The BLASST framework (Harvey, 2014) is national (Australian) benchmarking standards to systematise good practice for learning and teaching with part-time or sessional staff. Three guiding principles underpin the Sessional Staff Standards Framework.
1. Quality Learning and Teaching
2. Sessional Staff Support
3. Sustainability

The BLASST framework has been adapted and localised for the UL (and TUS/MIC) context by the REAP project. As a benchmarking tool it provides insights for Faculty Flexible Learning Units into current practices for managing and supporting external/practitioner tutors and serve as a guide to plan targeted improvements.

Question 1: Upon reflection, what elements now are you going to modify in a second course delivery. What areas of strength and areas for further development around Sessional Staff issues can you identify?

Responses: All four industry practitioners agreed that they all needed improvement in time management. Despite being guided by experienced academic they didn't realise the amount of work involved

A common theme from all respondents was the need for more formal T&L training and support, specifically they wanted support in:

- developing interactive material, particularly for online delivery
- support in to better interact and engage learners
- training on developing assessment

Question 2: Did being involved in the course design and validation help you with delivery?

Responses: All agreed that being involved in the design did help because they had already digested and considered the sub-elements of the whole module and thought about what makes up those high level learning objectives and how they would be constructed. Sample responses included:

Absolutely helped, had a full understanding of what I wanted to present, was able to translate content to the learning.

When you have designed it you understand the whole curriculum, what is the story you want to tell, helps you to hone in and provide direction around it. Thinks it is very beneficial and is key to making sure you have a robust course to start with.

Question 3: Did being involved in the validation panel add to the experience, witnessing the robustness of the validation process?

Responses: All respondents agreed they learned valuable insight from the validation process e.g. why are you limiting numbers, what about groupwork – questions that maybe hadn't been considered by the team beforehand – very good input at the validation panel and challenging them to defend what they had put together which was very worthwhile.

The programme leader added that, *..in regards to defending the programme, because the team all had such expertise in their specific areas it was hard to challenge them back.*

Question 4: What has this experience bought to your own professional development? Would you recommend this action for other industry colleagues?

Responses: All responded yes to recommending involvement to an industry colleague. A sample response was as follows:

People in industry can be very narrow-minded about how things work and what we think is right and I can see it with people I work with, that they forget what it's like to be a student again, they forget that there are people coming in and they don't know everything and it opens up people's mindsets to new ideas, new learnings and that's good. Even just getting involved, doing one set of lectures, being a guest lecturer think it's important to bridge the gaps between education and industry.

6 Summary of Findings

6.1 Findings

The findings are summarised under each of the headings of the three guiding principles that underpin the BLASST Standards Framework.

Principle 1: Quality Learning and Teaching

- Formal T&L training and support, on assessments, ways to engage students - essential
- VLE/tools training, different technologies/tools to help with student engagement - essential

Principle 2: Sessional Staff Support

- Access to Ed-Tech design + tools support essential
- Availability of on-demand resources
- Access to programme admin/IT support
- Programme leader (TUS permanent) – essential

Principle 3: Sustainability

- Significant Time commitment!
- On content development, working with Moodle, answering e-mails, assignments, assessing and giving feedback, meetings.
- "absolutely huge time commitment over and above the subject matter, almost also like a second full-time job"
- Appropriate incentive structures need to be in place – monetary and professional recognition

6.2 Key learnings for TUS

- Industry engagement throughout programme lifecycle hugely beneficial
- Induction stage vitally important
- Practitioners want to learn but in short, focused sessions
- University leadership in engagement and throughout the process of validation and delivery very important.
- Partnerships built through existing and developing networks
- Programmes must be designed sustainably

6.3   Enhancements from the project for TUS

The TUS Midlands flexible learning department have applied the following key practices to their management of sessional staff involved in programme development and delivery.

1.   Programme Leader role - TUS permanent staff
2.   Teaching and Learning Essentials for external practitioner staff has become mandatory
3.   E –Moderator training mandatory for all programme moderators
4.   Human Resources Induction mandatory for all external practitioner staff
5.   The Quality Assurance review for the Flexible Learning Unit each year now based on BLASST framework

The following diagram presents best practice flow chart for Industry practitioner engagement in programme delivery and development.
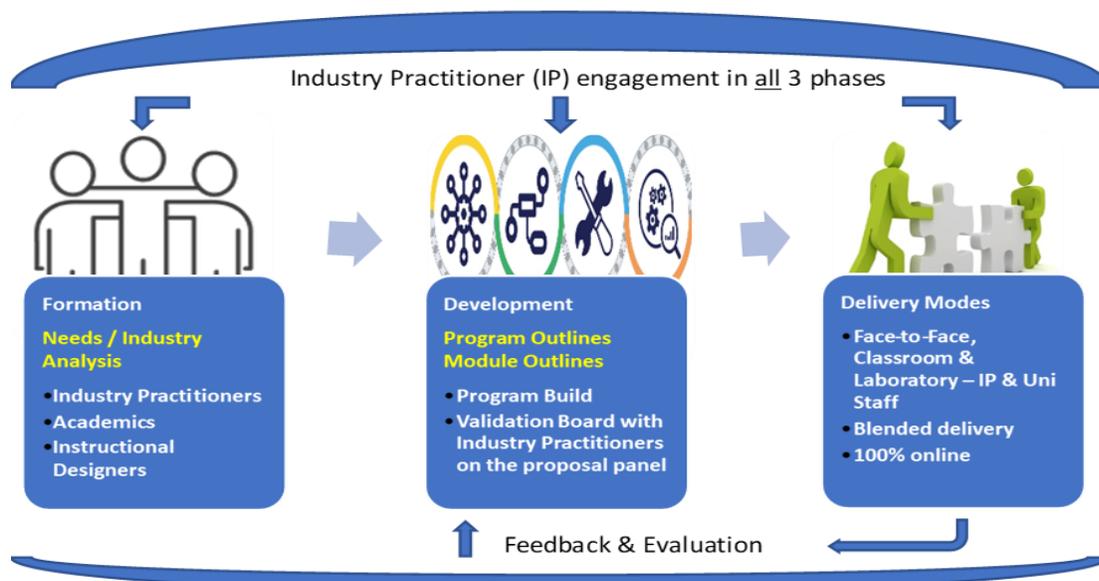

Figure 3 Best practice flow chart for Industry practitioner engagement in programme delivery and development.

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