Employability in Programme Development: Establishing a labour market to higher education feedback loop drawing on local labour market intelligence

ERASMUS+: Employability in Programme Development (EPD) Project

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Intellectual Output title: Best practice toolkit for HE employability

Document title: A portfolio of 23 case studies published in English language reports and made accessible in a web portal

Contributing authors: *Kristinn Hermannsson, *Deirdre Kelly, *Dickon Copsey

Author affiliation: *University of Glasgow (UoG)

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Kristinn Hermannsson, Deirdre Kelly, Dickon Copsey
College of Social Sciences
University of Glasgow

1. Introduction

The aim of gathering the collection of case studies was to compile a guidance framework to support administrative and academic staff engaged in programme and course development to embed employability into case design. We began by drawing up a series of criteria about the type of case studies we were looking to collect. These criteria were derived from a number of different sources including; Information obtained from the literature review in Output 1 (including feedback from the associated multiplier event); experience of university career professionals on the team and analysis of existing AdvanceHE case studies AdvanceHE 2020

2. Methodology of case study collection and curation

I. **Establishing criteria.** The team then established a list of case study criteria, divided into Essential and Desirable components. These are outlined below.

Essential

- Include examples of employability activity within core, credit bearing teaching at either course or programme level
- Have explicitly used labour market information to inform their design and development of course and programme content
- Support the development of graduate employability attributes and workplace skills through their teaching
- Be both practical and transferable (and scalable)

Desirable

- Include a robust assessment or evaluation of the impact of the activity on student skills development and/or labour market outcomes
- Include reference to the processes and mechanisms that allowed these initiatives to take place
- Include an explicit focus on the development of skills and student employability
- Be part of an institutional wide or systemic approach to course or programme development and enhancement

The criteria, and document format required were then published on the project website and people were invited to send in submissions. Very quickly we realised early on that getting appropriate submissions from individuals was going to be a difficult process as it demanded quite a time commitment from those involved , what was needed was an intensely pro-active approach that relied on approaching contacts directly .

II. ***Directly contacting potential submitters***. We then began a process of contacting as many possible sources of case studies as we could. This included,

- Existing professional contacts
- Submissions from project partners with contact suggestions for other global case studies
- Suggestions from Employability Policy Partners (EPP group)
- Researching and curation of appropriate published case studies that fitted the criteria AdvanceHE 2020 and proceedings from the 2022 AGCAS conference AGCAS conference 2022

III. ***Engagement and commitment process.*** This involved speaking directly to contacts to establish interest, talking them through the key criteria, format required. Case Study Criteria, Format and Submissions as well as detailing the selection process For clarity and transparency see the process for selection.

IV. ***Co-creation of final submissions.*** The team then worked iteratively with individual submitters, to produce final submissions that not only fitted the criteria , but which explained in depth some of the issues and challenges of their interventions, along with contacts and further links if more information was required.

V. ***Formatting and accessibility*** The approved drafts were then formatted into house style and proofed by the authors prior to placing on the website. Collated Case Studies using LMI in the curriculum

3. Final collection of Case Studies

In the end we managed to get 23 Case Studies finalised, exceeding our original target of 20. We were then able to divide the submissions into four broad categories.

A) Labour Market -informed Curriculum design
https://www.gla.ac.uk/research/az/epd/case%20studies/#labourmarketinformedcurriculumdesign

B) Institution-led initiatives
https://www.gla.ac.uk/research/az/epd/case%20studies/#institution-wideinitiatives

C) Subject/course- led initiatives.
https://www.gla.ac.uk/research/az/epd/case%20studies/#discipline-ledinitiatives

D) Paradigm shifting initiatives.
https://www.gla.ac.uk/research/az/epd/case%20studies/#paradigmshiftinginitiatives

The boundaries between these categories are, of course, permeable and many of our case studies comfortably straddle several categories at the same time. To ensure that the common themes, trends and approaches can be easily identified both within and across categories, we have also developed a system of keywords or 'tags' which the reader can use to chart their own journey through these case studies and quickly find the examples of most relevance to their own particular institution or context.

These tags are:

action plan;	applied learning;	attainment gap;	big data;	careers education;
career focus;	communicating skills;	community engagement;	curriculum change;	diversity;
embedded employability;	employability audit;	employability framework;	employability healthcheck;	employability skills;
employability strategy;	employer advisory boards;	employer engagement;	employer survey;	employer-university partnership;
enterprise and entrepreneurship;	evaluation;	experiential learning;	extra-curricular;	government;
graduate attributes;	graduate outcomes;	industry alignment;	industry challenges;	industry engagement;
institution-wide;	investment;	job requirements;	key performance indicators (KPIs);	labour market information (LMI);
labour market skills;	learning and teaching;	microcredentials;	mission statement;	personal and professional development;
personalised learning;	personal tutors;	placements;	portfolio;	professional accreditation;
professional bodies;	programme development and review;	real-world problems;	reflection;	regional;
research;	senior buy-in;	skills awards;	skills confidence;	skills framework;
skills gaps;	skills mapping;	staff training;	stakeholder consultation;	strategic;
student feedback;	transitions;	university services;	vocational;	widening participation;

work experience;	work-based learning;	work-related learning;	workplace readiness;	

IMPROVING NURSING EMPLOYABILITY THROUGH CURRICULA CHANGE

Generalitat de Catalunya
Government of Catalonia

Dolors Juvinyà-Canal

José Luis Mateos González

Co-funded by the Erasmus+ Programme of the European Union

EPD Feedback Loop

CONTRIBUTORS

DR DOLORS JUVINYÀ-CANAL

Email : dolors.juvinya@udg.edu

DR JOSÉ LUIS MATEOS GONZÁLEZ

Email: jlmateos@aqu.cat

AQU CATALUNYA

SUMMARY

This case study explores the improvement action plan developed by the Interuniversity Council of Catalonia (ICC) —the body responsible for coordinating the Catalan university system (SUC). The plan was compiled using participatory methods (PMs) involving academic, professional and alumni representatives throughout Catalonia and proposes curricula changes to improve the employability of Nursing graduates. The proposed curricula changes address 10 employability challenges identified from Labour Market Intelligence (LMI) drawn from an employers' survey (AQU, 2020). As a result of this survey, 59 actions were proposed to enhance the employability skills of Nursing graduates. The potential benefits of this process are: 1) the implementation of system-level LMI-based curricula changes to improve the employability of recent graduates; and 2) the sustainability and longevity of these curricula changes, based as they are on mutual consensus between key stakeholders. The Catalan University System is founded on the principles of institutional autonomy, and thus, it is individual HEIs' responsibility to implement the proposed curricula changes. Notwithstanding, the ICC has set up a working group to follow-up with and coordinate institutions' activities regarding the improvement plan. This working group will meet for the first time in May 2023. This case study explores the work leading up to this group's establishment.

CONTEXT

In 2019, the Interuniversity Council of Catalonia —the body responsible for coordinating the Catalan university system (SUC)— agreed to establish a working group to identify and address challenges in relation to the employability of recent Nursing graduates, and to propose an improvement action plan. These changes were mostly in the form of changes to the curriculum and were to be implemented by all universities in the SUC.

This working group had several aims (For more information on these aims, see Department of Research and Universities (in press). Informe: Grup de Treball per a la Millora de la formació dels estudis de Grau en Infermeria. Barcelona: Generalitat de Catalunya) in relation to the improvement of Nursing education but one aim was specifically related to the employability of recent Nursing graduates:

"To review the curricula of Nursing degrees to ensure that graduates attain the necessary skills [...] demanded by health institutions and organizations." (Department of Research and Universities in press, p. 5)

To explore this aim further and to identify the associated challenges and solutions it was necessary to interrogate local Labour Market Intelligence (LMI). Specifically, the group analysed the responses of an employer (See AQU Catalunya's Employers' opinion survey website: https://www.aqu.cat/en/Studies/Surveys-and-thematic-studies/Employers-opinion) survey carried out by the Catalan University Quality Assurance Agency (AQU Catalunya) targeted at hospitals and health centres that had recruited recent Nursing graduates (AQU Catalunya 2020). This survey, which is conducted periodically on a three-yearly basis, seeks to identify which skills are lacking or should be improved among recent graduates. The survey found that Nursing employers perceived gaps in the professional skills of recent graduates in the following key areas:

·Capacity to evaluate the Nursing needs of patients and to plan and carry out adequate interventions.
·Capacity to use critical thinking in Nursing interventions and to seek continuous improvement.
·Capacity to use scientific evidence in the development of Nursing interventions.
·Capacity to communicate with patients and their families effectively and empathically.
·Capacity to provide comprehensive care in Nursing interventions.

Additionally, employers also reported the need to improve the following soft skills:
·Problem-solving and decision-making
·On-the-job training
·Work responsibility
·Autonomous working
·Teamwork

To come to agreement on the curricula changes that might address the deficit in the skills above, a group of Heads of Nursing Departments at Catalan universities (known in Catalonia as Deans or Directors) lead by Dr. Dolors Juvinyà-Canal, developed a working methodology based on Participatory Methods (PMs), which is explained in the section below.

[1] See AQU Catalunya's Employers' opinion survey website: https://www.aqu.cat/en/Studies/Surveys-and-thematic-studies/Employers-opinion

METHODOLOGY

The proposed curricula changes were agreed upon by groups of selected stakeholders using Metaplan techniques (CIPAST, nd). This qualitative technique is 'a facilitation method for groups and as a communication model, in which opinions are developed, a common understanding is built and objectives, recommendations and action plans are formulated to focus on a problem and its possible solutions' (ibid.). The key Nursing education stakeholders —70 participants including academics, employers, and junior staff (recent graduates)— were then distributed across 6 different groups based on geographical location to ensure that different perspectives from non-metropolitan and metropolitan regions were fully represented. These groups were tasked with finding solutions to the two main challenges formulated in the context section above by drawing on the available LMI. Namely:

1.How to improve Catalan Nursing University Education, taking into consideration employers' opinions on the skills of recent graduates?

2.How to adapt expert training in Nursing to respond to the professional profiles most demanded by employers?

These 6 sessions yielded 366 ideas that were transformed into concrete actions following the process shown in Figure 1.

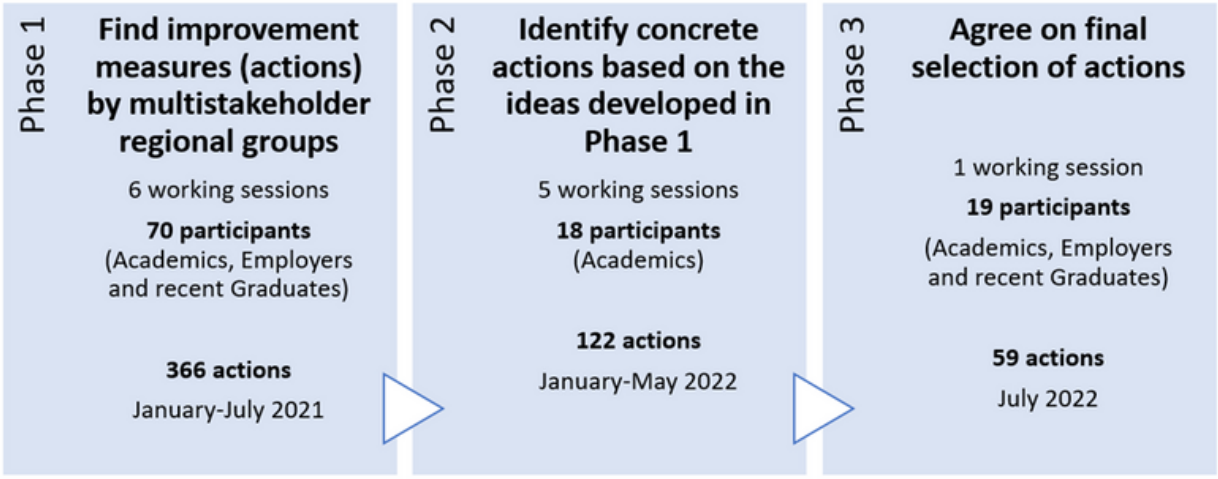


Figure 1. Process of ideation and selection of improvement measures in Nursing education

These actions were then grouped thematically and by order of importance into the 10 challenges that stakeholders identified as the key improvement issues for Nursing education. These actions, grouped by challenge, are outlined below:

Challenge 1. How can universities train Nursing students' team-working skills? Which concrete changes in curricula need to be implemented to do so?

1.1.Foster collaborative projects and assignments (including collaborative mindsets, beyond simply dividing tasks) across the entirety of the programmes and within all modules.

Challenge 2. How to foster soft skill acquisition among future Nursing graduates? How to specifically train communication skills and nurse leadership?

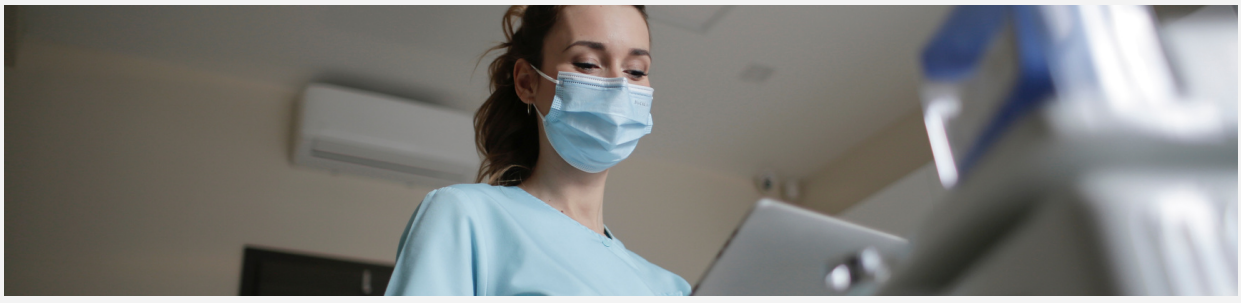
2.1.Greater use of simulations aimed at developing soft skills.
2.2.Focus on case resolution involving the use of soft skills.
2.3.Organise seminars and workshops to help students assess their soft skills and analyse their training needs.
2.4.Plan activities oriented to enhance students' emotional management.
2.5.Develop toolkits aimed at promoting critical thinking and reflection.
2.6.Encourage oral communication skills and argumentation by using presentations as an assessment technique.
2.7.Develop assessment rubrics and materials for soft skill acquisition.

Challenge 3. How to foster research and evidence-based practice (EBP) cultures throughout Nursing degrees?

3.1. Integrate EBP into Teaching Plans for all modules.
3.2. Encourage teaching staff to use updated, contemporary evidence in all modules.
3.3. Increase dissemination of departmental research to students and provide the opportunity to assist in these research projects.
3.4. Create spaces to share research activities between undergraduate, graduate, and doctoral programmes as well as in clinical practice.
3.5. Create reading and reflective practice groups.
3.6. Encourage scientific reading from Year 1 of programmes and have students ask research questions on a regular basis.
3.7. Share examples of applied Nursing research with students, with real testimonials from clinical researchers in Nursing.
3.8. Conduct clinical sessions during the placement period based on cases of care using EBP.
3.9. Encourage students to apply research results to practical Nursing interventions.

Challenge 4. Further promote the role of Advance Practice Nurses (APN)[1] (Schober 2019) and work to consolidate the role across the health system?

An APN is a nurse who has acquired clinical competencies and advanced decision-making skills, through additional education, for expanded Nursing clinical practice' (Schober 2019, p. 63).
4.1. Reach an institutional agreement on the concept, skills, and responsibilities of APNs.
4.2. Incorporate the role of the APN in student placements and ensure that students develop some of their practice under the supervision of APNs.
4.3. Invite APNs to training sessions, case resolution activities and as supervisors of undergraduate dissertations.
4.4. Incorporate content in first-year Nursing modules that foregrounds the role of APNs and promotes their impact on health outcomes.



Challenge 5. How can we maintain a dialogue with employers and work collaboratively to develop the skills that students need to attain, and detect gaps in specialised training?

5.1. Define and schedule periodic meetings with employers, and course and placement coordinators.
5.2. Work with employers to carry out a situational diagnosis of the needs of employers and teaching staff, to explain the expected learning outcomes of placement periods, and to work together on a document that sets out the critical competences that students need to acquire during their placements.
5.3. Work on key skills with associate teaching staff (In the Spanish context, associate professors are individuals whose principal professional activity is outside Academia, with the aim of bringing professional/practitioner perspectives into the classroom) and detect gaps in specialised training.
5.4. Design, together with employers, assessment materials and rubrics to evaluate achieved learning outcomes.
5.5. Promote the participation of employers and students in the processes of monitoring and evaluating the quality of Nursing degree programs. Incorporate student debates and analysis of concrete learning situations into both clinical and university teaching environments.
5.6. Include Nursing and healthcare professionals in the working groups that design curricula.
5.7. Schedule discussion groups with specialized nurses from Health centres, with academic tutors, and with university management to evaluate how to tackle specialization.

Challenge 6. How can we improve professional nurses' supervision of Nursing students? How can we define the role and responsibilities of placement supervisors, and/or mentors?

6.1. Establish a training programme for clinical supervisors tailored to different levels of expertise.
6.2. Improve clinical supervisors' skills in pedagogy and educational tools, leadership, and communication (particularly, feedback to students) and scientific evidence.
6.3. Reformulate supervisors' competency requirements to include student professional and soft skills development, and the modelling of expected professional identities.
6.4. Foster effective communication and greater active participation between academic and clinical supervisors: inter alia, the definition of expected learning outcomes, assessment rubrics, and a shared professional vocabulary.
6.5. Facilitate peer observation between academic and clinical supervisors and encourage the peer-to-peer feedback between the two roles.
6.6. Increase professional recognition of the role of the supervisor.

Challenge 7. How to incorporate emerging Nursing roles[1] in current degree programmes and modules?

During the review process, participants reflected on the need for greater focus on the skills and competencies of emerging Nursing professionals. Participants proposed the idea of establishing a dialogue with employers to identify these roles.

7.1. Include final year student placements with the clinical supervisors that perform these new emerging roles.
7.2. Design degree specializations specifically focused on these emerging new roles.
7.3. Incorporate training in Nursing care from a gendered perspective.
7.4. Include emerging teaching methodologies, such as simulations and role play. These could include, for instance, teleconsultation and emotional management.
7.5. Increase the number of teaching hours on pharmacology, and the prescription, use and authorization of new drugs and health products.

Challenge 8. How to adapt undergraduate and postgraduate Nursing degree programmes to changing societal and employer needs?

8.1. Offer decentralised life-long learning opportunities that respond to the needs of Health centres. Increase training coordination between the University and employers.
8.2. Refocus teaching and learning on emerging Nursing specialities, with an increased focus on placement opportunities.
8.3. Offer training in emerging societal changes, such as cross-cultural communication or LGTBIQ+ care. Teach Nursing care from the perspective of Sustainable Development Goals.

8.4. Reinforce teaching in digital skills to address current and future care needs.
8.5. Develop indicators to understand contemporary social needs in terms of Nursing care.
8.6. Include a final examination in all degree programmes in the form of an Objective Structured Assessment of Technical Skills (OSATS).
8.7. Establish a project incubator to find solutions to current and future societal needs.

Challenge 9. What are the new types of teaching roles required to respond to current learning needs?

9.1. Expand teacher induction plans and training sessions on mentoring and student engagement.
9.2. Offer training in teamwork for teaching staff.
9.3. Incorporate different teaching profiles in decision-making processes about modules, contents, and degree planning. Include associate teaching staff in research projects and in discussions on the improvement of degrees.
9.4. Identify potential teaching talent among healthcare professionals to harness their expertise.
9.5. Design spaces (seminars, workshops, or round tables) to foster dialogue between teaching staff and healthcare professionals.
9.6. Establish new teaching roles and encourage the creation of linked positions (Linked positions are teaching roles that involve both teaching and healthcare practice in University health centres.).
9.7. Boost recognition strategies in the accreditation of teaching staff: recognise healthcare experience in staff accreditation processes.

Challenge 10. How can we boost a sense of belonging in the Nursing profession to achieve the social transformation of the profession? What are the values that should be transmitted to Nursing students? How should it be achieved? What are the actions that can be undertaken to encourage collaborative work as opposed to individualism?

10.1. Encourage person-centred care practices. Humanise care through reading, debating, and the analysis of care practice. Foster ethical and professional commitment from a humanist model.
10.2. Foster values such as professional effort, generosity, service, allegiance, commitment, and responsibility.
10.3. Encourage commitment towards the profession in relation to Public Health and foster active participation in community organisations and institutions.
10.4. Assess students' values prior to entrance into degree programmes. Include the teaching of values in theoretical modules and on placement. Identify role models in relation to professional values and encourage reflexive practice.

REFLECTIONS, CONCLUSIONS & NEXT STEPS

Although it is too early to assess the impact of the process described in this document on Nursing education, it is clear that Labour Market Intelligence can be a catalyst for agreement on system level curricula change that may boost the employability of Nursing graduates. These decisions are much more likely to be both durable, effective, and owned by individual HEIs, stemming as they do from agreement between all key stakeholders. Additionally, the involvement of employers –both in the form of employer surveys but also their key participation in discussions and curriculum design processes—contributes to the professional credibility of degree programmes and the future graduates of these programmes.

Clearly, the next step for this project is to see the effective implementation of curricula changes across all the HEIs involved. As laid out in the initial brief for this project, each HEI is responsible for prioritising and implementing the challenge actions according to their own priorities and capacities. We foresee two main challenges with this process of implementation: firstly, the coordination of curricula changes and interventions across all of the institutions involved in the project; and secondly, the evaluation of the impact of the actions which are ultimately taken. For the time being, the Interuniversity Council of Catalonia has proposed the formation of a new working group with both representatives from the Catalan Ministry of Health, the Ministry of Universities and University management to coordinate the implementation of the proposed actions. The activity of this group will begin this year and the first meeting is scheduled to happen in May, 2023.

It goes without saying that individual institutions may face barriers that may hinder the implementation of curricula changes. As the Catalan University System works on the principles of institutional autonomy, HEIs may face delays in the implementation of curricula changes depending on their priorities and resourcing.

However, the authors of this case study firmly believe that the model of best practice contained within this system-wide curriculum redesign, will represent a source of inspiration to programme designers that seek to incorporate LMI into their decision-making processes. The relevance of this case study extends to all programme designers of degrees leading to regulated professions where coordinated action is required between educators, employers, and policymakers.

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LABOUR MARKET INFORMED DEGREE PROGRAM CREATION AND CONTINUOUS IMPROVEMENT

Janina Robinson **Cody Boomer**

CONESTOGA COLLEGE

Co-funded by the Erasmus+ Programme of the European Union

EPD Feedback Loop

CONTRIBUTORS

JANINA ROBINSON

Manager Degree Quality & Accreditation, Conestoga College

Email : jbrobinson@conestogac.on.ca

CODY BOOMER

Degree Projects Coordinator, Conestoga College

Email: cboomer@conestogac.on.ca

CONESTOGA
Connect Life and Learning

SUMMARY

Conestoga College, in Ontario, Canada, integrates labour market information both into the degree program development process as well as throughout the lifecycle of the program. The Degree Quality & Accreditation department provides support in developing, under the direction of academic areas, both 3 and 4-year degrees. In addition, the department supports the on-going continuous improvement (including maintaining industry and academic alignment) throughout the lifecycle of the degree. Labour market information is a key driver in both the development and ongoing maintenance of degree programs at Conestoga.

Labour market information is incorporated through a variety of resources and received from several stakeholders. The Degree Quality & Accreditation department works collaboratively with stakeholders and program teams adhering to the established policy framework to include and incorporate labour market information with a focus on job readiness. This involves program changes based on responding to industry, academic advances, student feedback, and program KPIs. The main initiatives that incorporate labour market information include:

- New Program Creation
- Program Development Advisory Committees/ Program Advisory Committees
- Focus on Work Integrated and Applied Learning
- Faculty Experience
- Program Renewal
- Annual Program Reflection system (APR)

CONTEXT

Conestoga College was established in 1967 and is one of 24 Colleges of Applied Arts and Technology (CAAT) in Ontario. CAATs are publicly funded colleges that traditionally focus on offering post-secondary education to meet the needs of employees and employers in a changing work environment. All CAATs are required to follow legislation laid out by the Province of Ontario through the Ministry of Colleges and Universities (MCU). CAATs are authorized to deliver baccalaureate degrees under the Postsecondary Education Choice and Excellence Act, 2000 (PSECE). The Post-secondary Education Choice and Excellence Act, 2000 established the Postsecondary Education Quality Assessment Board (PEQAB), whose mandate is, upon recommendation from the Minister, to review applications to offer degree programs and to make a recommendation whether to approve the program to the Minister based on the information provided by the applicant.

Conestoga College aims to develop and amend programs to ensure alignment with the legislative framework and offer comprehensive and in-demand degree programs. The Ontario Qualifications Framework (OQF) establishes an overarching quality standard, regardless of the post-secondary institution type, in offering different credential levels in Ontario. The OQF outlines different learning outcomes based on various credential levels offered in Ontario. In adhering to the OQF, Conestoga ensures it meets or exceeds these benchmarks/standards, which are discussed in more detail in the implementation portion of the case study.

Conestoga is one of Ontario's fastest growing colleges and a leader in polytechnic education, serving approximately 27,000 registered full-time students through campuses and training centers in Ontario.

METHODOLOGY AND IMPLEMENTATION

Conestoga College has ensured degree program relevancy to labour market needs through a variety of processes. These include, but are not limited to:

- Assessment of labour market information during program development phase
- Ongoing engagement with industry and employers through Program Advisory Committees
- Imbedding data related to labour market within the Annual Program Reflection process
- Highlighting labour market data during degree renewal where major program updates will occur

Degree Quality & Accreditation Department: The Degree Quality & Accreditation department supports the development, maintenance and review of degree programs at Conestoga College. Since the role of Degree Quality & Accreditation is focused on degree-level programs, the scope of this case study is focused on the Bachelor and Honours Bachelor degree level. Conestoga currently offers 19 degree programs through Conestoga's different academic schools, including the Schools of Applied Computer Science & Information Technology, Business, Community Services, Creative Industries, Engineering & Technology, and Health & Life Sciences. Additionally, we continue to develop additional degree programs.

Proposing a New Program – Labour Market Information: Labour market information is a key component to both the creation of new degree programs as well as when renewing programs during the ministerial consent cycle. When a potential new degree offering is in the ideation stage, the Degree Quality & Accreditation department works with Conestoga's Institutional Research team to identify current labour market demand for the skillset and career opportunities of future graduates. This process is completed by utilizing National Occupational Classification (NOC) codes, which is Canada's national system for describing occupations. NOC codes are selected based on the potential future careers proposed by the potential program. The Institutional Research Department at Conestoga uses the NOC codes to create the Labour Market Report (LMR). The LMR provides information such as:

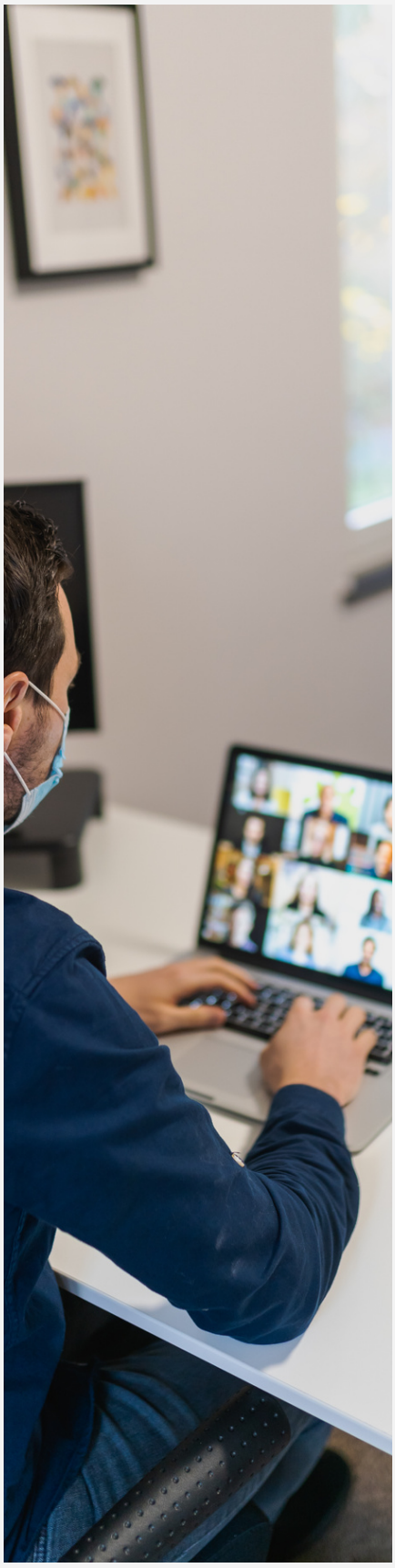
- Number of programs at Conestoga College aligned with the identified NOC codes
- Estimated new local grads over the next seven years
- Local employment count in an identified year
- Projected change to local employment opportunities in the next ten years, and number of unique job postings aligned with the identified NOC codes within the past year

The modeling included in the LMR is generated by an analyst platform that Conestoga utilizes, called the Economic Modeling Specialists International (EMSI). The program team utilizes the information in the LMR to establish a business case and demand for this type of degree program in the workforce.

Once sufficient information has been gathered to establish the viability and workforce demand of a proposed program, the program goes through an internal approval process at Conestoga College ensuring alignment across academic schools and internal stakeholders. Once receiving approval, the Degree Quality & Accreditation department works with the program team to move onto the next stage of program development by establishing a Program Development Advisory Committee (PDAC).

Program Development Advisory Committee and Program Advisory Committee Roles and Process:The PDAC is comprised of internal staff, faculty, industry experts, and external academics within the relevant field of the proposed program. These experts can include external academics and local employers who provide valuable feedback on the proposed program design. Over multiple meetings, the Degree Quality & Accreditation department and Chair of the Academic School present program information to the PDAC for endorsement. Elements of endorsement include: program and credential name, program learning outcomes, curriculum design, co-operative education model, and graduate potential for employability. By aligning all of the above elements with the industry and academic experts that comprise the PDAC, the College ensures that any programs being developed meet the needs of employers and adapts the changing demands of the particular industry and skills required by the workforce.

Once programs have received ministerial consent, the PDAC changes into a Program Advisory Committee or PAC. Where the PDAC's role is to advise on the creation of a degree program, PACs are established to continue to provide feedback on the program as it is being delivered. In addition to industry partners and academic experts who attend the meeting, students often attend to describe their experiences at different levels within the program. PAC members provide advice on topics such as: program design, subject matter/topic relevance, changes/trends in business and industry affecting programs of study, student and graduate success, technological implications of changes/trends, and employment prospects. Each program PAC meets semi-annually, and the minutes of each meeting are saved to help maintain institutional memory of all feedback and proposed potential changes. This process ensures the program continues to evolve to meet the demand of the labour market.



Both the PDAC and PAC focus on utilizing the feedback of industry and employers to align program design elements. This includes curriculum content, delivery sequence, and program learning outcomes. These elements are designed and amended to meet the needs of local employers and to focus on students who graduate job ready, with skills and credentials that are in-demand. The advisement of employers on the PDAC and PACs is invaluable and provides a direct link to industry and insight into the knowledge, skills and attitudes that students and graduates require.

Focus on Work Integrated and Applied Learning: Conestoga delivers an applied learning experience within all degree programs, offering a co-operative education and/or work integrated learning opportunity as part of the design. The Co-operative Education, Career Services & Work Integrated Learning department works alongside the Degree Quality & Accreditation department and program chair to design a program that maximizes the ability for students to meaningfully participate in their field prior to graduation. In Conestoga's degrees, students will have the opportunity to work and learn in at least one paid co-op work term, amounting to no less than 420 hours. Many of Conestoga's degrees include more than one work term, allowing for a student to deeply engage with one employer, or to experience multiple work settings. Some of Conestoga's degrees also include Field Placement courses, which integrate a few hours of engagement within a work setting into a course, allowing for students to truly learn how theory applies to practice. By providing opportunities for students to participate in an applied workforce setting, students are able to develop on the job skills and apply theoretical concepts that are taught in the program. Throughout the work integrated learning or co-operative education semester, students are able to ask questions and receive support from faculty as well as college staff, and are required to complete academic reflective assignments related to their experience. Following this semester, students return to the classroom and have time to reflect on their experiences, ask additional questions, and further develop skills that are required to be successful in their field.

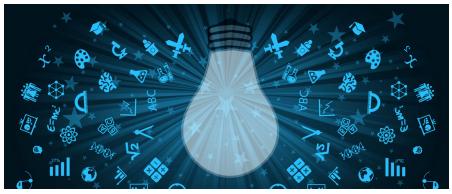
Both students and employers are surveyed following the work integrated learning/co-operative semester. This survey enables employers to provide feedback on the job readiness of students, skills, and employability of students, as well as allows students to outline their experience with different employers. This information creates a feedback loop to further bolster Conestoga's approach to program continuous improvement and ensures that students are being well prepared to join the workforce prior to graduation.

Faculty Experience: Conestoga College values both academic qualifications and industry experience when selecting individuals to hire into faculty positions within our degree programs. When recruiting, potential faculty are assessed on a program-by-program basis ensuring that the recruitment is meeting the needs of the specific course, program and/or School. As Conestoga's degrees focus on applied learning, faculty with industry and professional experience are highly valuable. In this way, faculty provide another industry touchpoint and provide 'real world' exemplars for the students to consider in their curriculum. Many faculty continue to work or consult while also teaching Conestoga's students.

ANALYSIS AND EVALUATION

Annual Program Reflection (APR): The annual program reflection (APR) is the main strategy used by program teams to continue to evaluate and assess their program. This reflection is completed every spring by each program team using an online tool to guide the program team in reflecting on various data points related to allow for a holistic discussion of the program. Some of the data elements that inform this reflection include:

Program learning outcomes
Current program design
Accreditation/Specialty Certifications
PAC meeting minutes
Program Quality Indicators



This information is presented within an intuitive application and allows the program team to effectively evaluate their program and to discuss potential improvements that will improve student learning and job readiness. Program teams are invited to consider graduate preparedness throughout their Annual Program Reflection meetings. This includes reflection on PAC feedback, Co-op work term surveys, and student feedback that the faculty consider in relation to the program design and program learning outcomes.

As noted, student feedback is considered within the APR. Key Performance Indicators (KPIs) are an important piece in assessing the program. In 2022 is a new province-wide Ontario Student Experience Survey was implemented. This new survey was developed by college representatives from across the province with leadership from Colleges Ontario, an advocacy group for Ontario's 24 colleges. The OSSE reports on data garnered from surveys completed by students, graduates, and employers providing feedback on various elements of the program. A snapshot of some of survey question content includes:

Students

- *Overall teaching and learning experience*
- *Program has improved the ability to practice professional behaviours*
- *Satisfaction level that the program has provided the knowledge and skills that will be useful in their career*
- *Quality of the work integrated learning opportunities*

Graduates

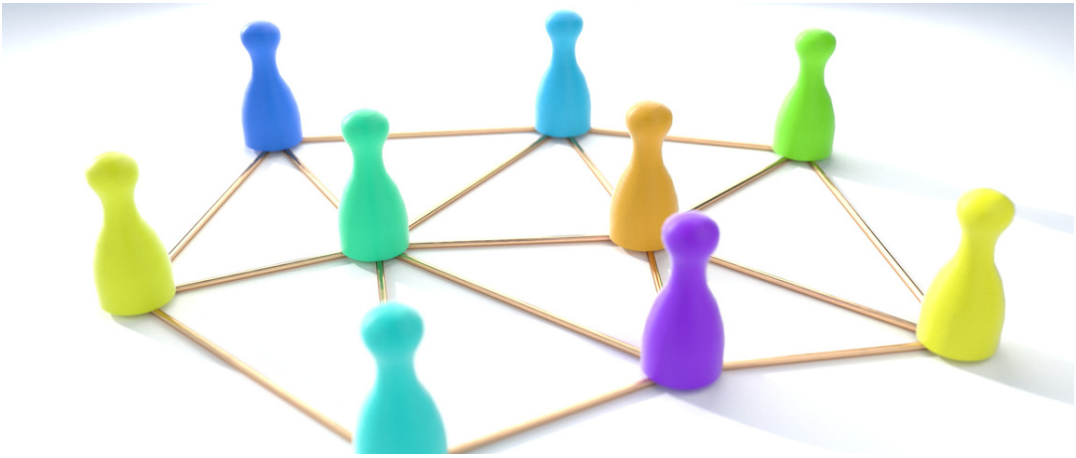
- *Employment rate and employment rate in their field of study*
- *Skills at the college helped secure employment*
- *Overall satisfaction of college preparation for the workplace*
- *Program recommendation*

Employers

- *Employer satisfaction rate*

All of the survey questions are aggregated into various Key Performance Indicators to allow consistent and efficient analysis of the feedback we are receiving from each group.

To conclude an APR, the module triggers the program team to develop an action plan for the upcoming year. This feature allows the team to track their progress and assign responsibility to make any changes or adjustments. This action plan is available during the subsequent APR to ensure adequate changes were made.



Accreditor Alignment: Both during program development as well as on an on-going basis, program team assesses current or future opportunities for accreditation/specialty certification alignment. The Degree Quality & Accreditation department works with the program team to align the program with any industry certifications or accreditation. Many of Conestoga's degrees are aligned with national or international accreditors, providing another layer of recognition for the student. As an example, Conestoga's Engineering degrees are the first college-delivered accredited Engineering degrees in Ontario, accredited by the Canadian Engineering Accreditation Board. This allows students to graduate from an industry accredited program or to pursue a certification based on the experience and information gained from their program. This further enhances student readiness to enter the workforce in their field.

Program Renewal: Degrees are required to undergo a major program review every 5 to 7 years, mandated by the legislative processes outlined above.

During this major program review, the Degree Quality & Accreditation department requests an updated Labour Market Report from Conestoga's Institutional Research Office, to be used in conversations with the program team about any curricular changes that should be considered based on current labour market information, Program Advisory Committee feedback, KPI surveys, trends in academia and other key data points. The renewal process provides an opportunity for a program to consider adjustments to the program design with the intention of maintaining currency and maximizing value for students and their ability to enter and be successful in the workforce. As part of the renewal process, a degree program is reviewed by the Postsecondary Education Quality Assessment Board (PEQAB) as well as two subject matter experts (SME) from an external College or University. This ensures that, for Conestoga's degrees, the renewal process is not simply an internal review, but rather, one with externally mandated standards and expectations a degree program must meet. Meeting these standards, as assessed by PEQAB and the SMEs, allows for continued delivery of a degree.

REFLECTIONS & CONCLUSIONS

Conestoga College values the integration of labour market information into the development and continuous improvement of our degree programs. Operating within a framework designed to focus on employability of graduates, Conestoga has implemented processes to meet quality requirements as well as to provide an efficient and effective method for the program to respond to any industry or graduate skillset changes.

However, a challenge of engaging so many avenues for feedback during the development and delivery of a degree can create competing priorities across the various stakeholder groups. With the varied membership and expertise of the PDACs/PACs, the individual interests of students, and the specialization of faculty, there is a need to balance each specific lens in assessing and analyzing potential changes to the program. By keeping the graduate at the core of all of Conestoga's activity, we strive to achieve Conestoga College's Mission Statement: to create the environments for students to realize their potential and graduate as individuals who can make meaningful contributions to their communities.

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EPD Feedback Loop

PREPARING GRADUATES FOR THE 21ST CENTURY JOB MARKET: COMPUTER SCIENCE SKILLS PROFILING

RUPERT WARD

UNIVERSITY OF HUDDERSFIELD

Co-funded by the Erasmus+ Programme of the European Union

EPD Feedback Loop

CONTRIBUTORS

RUPERT WARD

University of Huddersfield

Email : rupert.ward@hud.ac.uk

Tuba Shamim, University of Huddersfield
Ben Hull, University of Huddersfield
Alan Hayes, University of Bath
James Davenport, University of Bath
Denise Lengyel, University of Bath
Lee Hutchison, Abertay University Dundee
Luke Millard, Abertay University Dundee
Alastair Irons, Abertay University Dundee
Rachael Hogg, Abertay University Dundee
Keith Miller, Manchester Metropolitan University
Tom Prickett, Northumbria University
Julie Walters, Northumbria University
Rakhshanda Ali, Northumbria University
Paul Hanna, Ulster University

SUMMARY

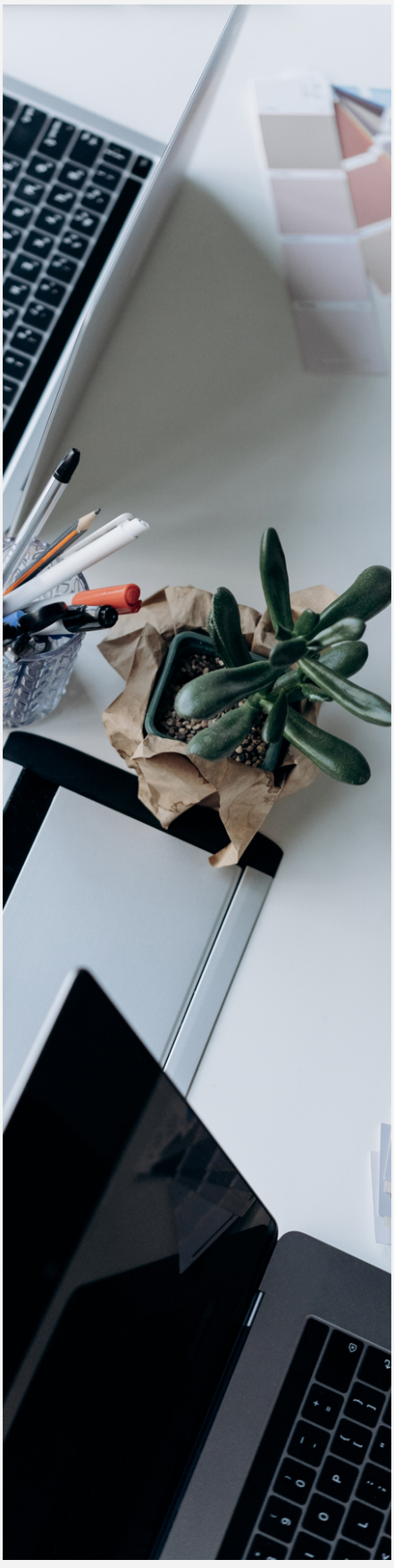
Using a novel skills profiling approach, a set of computer science department courses from six UK universities were translated into 21st Century Skills categories to enable educational delivery to be compared to job requirements. Lightcast labour market information was used to identify 21st Century Skills requirements within relevant jobs. Learning outcomes from our university courses were then translated into 21st Century Skills, and 'skills hours' were calculated using assessment components and their weightings.

The primary aim of this work was to connect the capabilities developed within higher education with the competencies sought by employers, so that learner-earners can better understand themselves and their alignment to a rapidly evolving job market. Our work also enables employers to better understand and differentiate learner-earners. In so doing, this project has demonstrated how stackable badging and micro-credentialing can be used to support more responsive and adaptive learning and reskilling both within higher education and within employment.

CONTEXT

The primary aim of this project was to connect the capabilities students develop within higher education with the competencies sought by employers. To achieve this, the study considered how stackable badging and micro-credentialing can be incorporated into higher education. This process provides a mechanism by which learning can become more granular, bespoke, employer-aligned, personalised and, therefore, more efficient for initial skills acquisition and, increasingly, on-the-job reskilling.

Professor Sue Reece's UK micro-credential model was used to explore different applications of skills profiling to the micro-credentialing of UK higher education courses at both undergraduate and postgraduate level (QAA Quality Compass publication, April 2021). In this particular case study, computer science department courses across a range of UK institutions were chosen, with the aim of comparing and contrasting current approaches to course delivery (including the use of badging and micro-credentialing) and skills profiling.



Skills profiling involves the coding programmes of study into 21st Century skills categories by considering the learning hours, assessments and learning outcomes. The resulting translation provides two skills profiles - one for subject specific skills and a second for transferable skills. These profiles are expressed in terms of the number of skills hours that each 21st Century skill contributes to the programme of study. Whilst clearly an approximation, the approach is very useful in comparing skills within education, within employment and between education and employment. For the latter comparison between education and employment, percentage skills profiles are used.

By comparing a set of similar degree programmes from different institutions whose approaches to quality assurance, course content and alignment to personal and professional development varied significantly, the case study was able to confirm broad applicability whilst also highlighting specific considerations arising from institutional differences.

Another advantage of this approach was that it demonstrated how badging and micro-credentialing from outside of higher education can be incorporated into degree programmes. For example, two of the institutions involved in the study, University of Huddersfield and Northumbria University are global pioneers in terms of recognising LinkedIn Learning for credit within their Masters programmes. It also considered how the increasing prevalence of personal and professional development courses, alongside degree programmes, can be accommodated better within the structures of degree programmes. Indeed, it can be argued that the rise of such courses is symptomatic of the needs for a more adaptive and responsive approach to quality assurance and course content within higher education.

From the labour market perspective, Lightcast labour market information provides a rich dataset of current job roles and skills sought. By categorising these skills using the same 21st Century Skills classification scheme that is used for higher education programmes the skills developed and the skills sought can be compared. This approach clearly has significant benefits for learner-earners, educationalists and employers. Firstly, it enables a direct comparison between what is being sought and what is being taught. Secondly, it enables the educationalist to review academic course content against job roles and reflect (and

perhaps modify) standardised content to better meet employer needs. Thirdly, it enables employers to understand, compare and contrast learners' skills match against their various job roles. Fourthly, it provides a way to personalise learning within the same programme of study by evidencing the same skills to different extents and levels. Finally, through this personalisation, it enables learner-earners to better understand how their education prepares them for employment and highlights career and employment routes based on their current skills, or through reskilling, that would not otherwise be obvious.

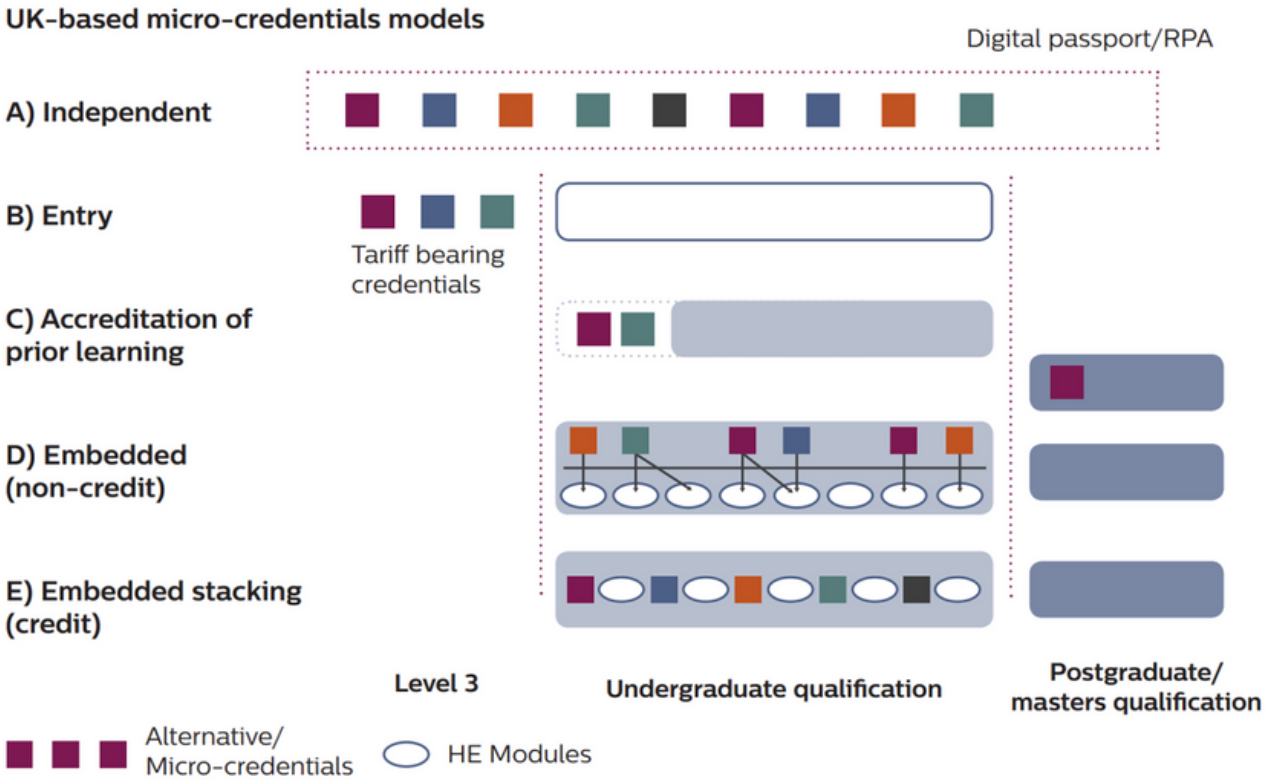


Figure 1 – Professor Sue Reece's five potential models for UK micro-credentialing

METHODOLOGY & IMPLEMENTATION

To support the skills analysis of our existing courses and begin the skills profiling process, six skills themes were used: A) Understanding, B) Context, C) Solutions, D) Delivery, E) Behaviour and F) Reporting. In addition, 25 skills categories (S1A to S6F and T1A to T19F) were used. These categories are laid out in the figure below:

	SKILLS	SHORT DESCRIPTIONS
	Subject-based	
S1A	A – Theory	Theoretical subject area knowledge
S2B	B - Business Requirements and Applications	Business needs and use
S3C	C – Innovation	New subject area approaches
S4D	D - Process and Production	Actions or steps taken to achieve a particular result
S5E	E - Self-Reflection	Contextual analysis within the environment in which the subject area is applied
S6F	F - Technical Writing	Subject-related writing that requires direction, instruction or explanation
	Transferable	
T1A	A - Information Literacy	Integrated abilities encompassing discovery, production and valuing of information
T2B	B - Business Alignment	Recognition of organisational purpose, aims and objectives
T3B	B - Entrepreneurship	Developing and managing business ventures
T4B	B - Numeracy	Use of numbers to solve real life problems.
T5B	B - Analysis	Gaining improved understanding through simplifying a complex topic
T6C	C - Creativity	Creating new things
T7C	C - Problem Solving	Finding new solutions to complex issues
T8D	D - Technical Proficiency	Apply technical knowledge and skills to specialist roles and responsibilities
T9D	D - Self-Regulation	Managing oneself in order to achieve goals
T10D	D - Leadership	Motivating others to perform
T11D	D - Management	Planning, organising, directing or controlling physical, financial, human and informational resources efficiently and effectively to achieve organisational goals
T12E	E - Professionalism	Professional status, methods, character or standards
T13E	E - Ethics	Concepts and principles determining behaviour that helps or harms
T14E	E - Evaluation	Assessing the amount, number or value of something
T15E	E - Risk Analysis	Identifying and analysing potential negative impacts on goals
T16E	E - Sustainability	Maintaining resources in ecological balance
T17E	E - Social Learning	Understanding and applying behaviours within social contexts
T18E	E - Collaboration	Processes where two or more people work together to complete tasks or goal
T19F	F - Communication	Conveying meaning to others

Figure 2 - 21st Century Skills categories (6 subject-specific & 19 transferable)

These categories, drawn from a research study of existing literature regarding 21st Century skills, helped us to translate learning outcomes into the most appropriate subject-specific skills category, with skills hours calculated pro-rata from learning outcomes, assessment weightings and learning hours as shown in the figure below. For example, a 20 credit/200 learning hour module with two assessment components was calculated in the following way:

Module Learning Hours		200			
Asst	Weighting	Asst Learning Hrs	Learning Outcome	Learning Outcome Hrs	Subject-Specific Skills Categories
1	60%	120	1	30	S1A
			2	30	S2B
			4	30	S4D
			5	30	S4D
2	40%	80	2	40	S2B
			3	40	S6F

	Subject-specific Skills Hrs
S1A	30
S2B	70
S4D	60
S6F	40

Figure 3 - Subject-specific Skills Hours Calculation

A similar approach was used for transferable skills, though here several categories can apply to an individual learning outcome, so transferable skills hours are captured as outlined in the figure below:

Module Learning Hours		200			
Asst	Weighting	Asst Learning Hrs	Learning Outcomes	Learning Outcome Hrs	Transferable Skills Categories
1	60%	120	1	30	T1A
			2	30	T2B, T3B
			4	30	T9D, T10D, T11D
			5	30	T8D, T11D
2	40%	80	2	40	T4B, T5B
			3	40	T19F

	Transferable Skills Hrs
T1A	30
T2B	15
T3B	15
T4B	20
T5B	20
T8D	15
T9D	10
T10D	10
T11D	25
T19F	40

Figure 4 - Transferable Skills Hours Calculation

One of the most exciting uses of this approach is in providing increased flexibility in assessment. There are two key ways in which this can be done. The first is through reducing assessment burden by enabling some of the existing assessment requirements to be met in alternative ways. Using this approach, existing assessments are analysed and translated into skills hours as per the example below. Once this has been done, External Learning Resources (ELRs) can be identified which meet some of the skills hours requirements. This means that existing assessments can be reduced and replaced with more suitable ELRs, whilst providing increased flexibility, relevance and student engagement.

For example, if a Cyber Security (CS) module represents 200 learning hours, and has 2 assessments, each weighted at 50%, assessing 3 subject-specific skills, suitable ELRs could replace 120 learning hours, as shown below. Clearly a similar approach could be taken with transferable skills, but for simplicity the examples below consider just subject-specific skills:

CIS2201 Cyber Security			Module Learning Hours			200
Asst	1A	2B	3C	4D	5E	6F
1	67					33
2				67		33
Total	**67**			**67**		**67**

Figure 5 - Example Cyber Security Module Assessments

ELR	1A	2B	3C	4D	5E	6F
1	5		10	5		
2	10	5		10		10
3	5			10		5
4	10			5		5
5	5			10		10
Total	**35**	**5**	**10**	**40**		**30**
Remainder	**32**	**-5**	**-10**	**27**		**37**

Figure 6 - External Learning Resources (ELRs) that represent skills developed in the Cyber Security Module

CIS2201E Cyber Security (ELR)			Internal Learning Hours			80
			External Learning Hours			120
Asst	1A	2B	3C	4D	5E	6F
1	28			22		30
ELRs						
1	5		10	5		
2	10	5		10		10
3	5			10		5
4	10			5		5
5	5			10		10
Total	**63**	**5**	**10**	**62**	**0**	**60**

Figure 7 - Use of ELRs to reduce the number of module assessments

The second, more exciting, application of this approach is in enabling personalised learning and assessment within module studies. This has clear benefits for the learner, who is able to specialise in areas best suited to their interests and aptitudes. It is also beneficial for the earner, who is better aligned to and competent to perform their job roles. Finally, it benefits employers, and indeed society, who benefit from clearly differentiated applicants enabling more effective selection processes, a more productive and happier workforce and more efficient approaches to reskilling and personal and professional development.

In the example below, the same module and ELRs are considered. In this case, the number of assessments remain the same, but the amount of time dedicated to them (the learning hours associated with them) are reduced. This reduction provides space and opportunities for ELRs to be incorporated. By providing choice in which combination of ELRs a learner undertakes, this also means that different skills profiles can be gained and therefore different learner skills profiles can be differentiated. The learner can, therefore, review which skills they wish to develop further and select based on this, or they can consider employment requirements through labour market information and choose ELRs that best meet the skills profiles required for job roles.

For the module under consideration in Figure 8 below, the internal learning hours (from the two assessments) are reduced from 200 hours to 140 hours, with a pro-rate reduction in the skills hours arising from these assessments:

CIS2201P Cyber Security (PL)			Module Learning Hours			140
Asst	1A	2B	3C	4D	5E	6F
1	47					23
2				47		23
Total	47			47		46

Figure 8 - Skills Hours from Internal Learning, based on a pro-rata reduction in module assessments

This then means that the external learning hours can be gained from a combination of the ELRs. Two examples are shown below:

ELR	1A	2B	3C	4D	5E	6F	
2	10	5		10		10	35
5	5			10		10	25
Total	**15**	**5**		**20**		**20**	**60**
ELR	1A	2B	3C	4D	5E	6F	
1	5		10	5			20
3	5			10		5	20
4	10			5		5	20
Total	**20**		**10**	**20**		**10**	**60**

Figure 9 - Two combinations of ELRs to enable the requisite External Learning to be gained.

These two combinations would then result in two different skills profiles for the module as shown below:

CIS2201PL Cyber Security (PL)			Internal Learning Hours			140
			External Learning Hours			60
Asst	1A	2B	3C	4D	5E	6F
1	47					23
2				47		23
ELRs						
2	10	5		10		10
5	5			10		10
Total	**62**	**5**	**0**	**67**	**0**	**66**

Figure 10 - A personalised skills profile based on selection of ELRs 2 and 5

CIS2201PL Cyber Security (PL)			Internal Learning Hours			140
			External Learning Hours			60
Asst	1A	2B	3C	4D	5E	6F
1	47					23
2				47		23
ELRs						
1	5		10	5		
3	5			10		5
4	10			5		5
Total	**67**	**0**	**10**	**67**	**0**	**56**

Figure 11 - A personalised skills profile based on selection of ELRs 1, 3 and 4

ANALYSIS AND EVALUATION

Across the range of institutions included in the study, it was found that institutional constraints on numbers of learning outcomes and highly bespoke approaches to defining learning outcomes lead to some variance in what skills were identified through the skills profiling process. There were also many similarities when skills profiling across institutions, and reasonable alignment with labour market information, for example when comparing two similar named degrees at two different institutions there was very good agreement on a skills profile and good alignment of both with future job roles. There was also variation by sub-discipline and differences between what course teams thought was being taught and what was defined as being taught through the learning outcomes.

However, the approach demonstrated that Lightcast labour market information can be mapped onto module and programme learning outcomes through a skills profiling approach. It also showed the broad applicability of such an approach. Indeed, the universality of learning outcomes, as a measure of capability within higher education globally, and the competency focus within job postings, mean that a skills profiling approach can be used anywhere. The issues identified were institutional variations that can be easily addressed locally as and when they present any difficulties.

Beyond this, the skills profiling approach provides opportunities to reduce the assessment burden and to open up programmes to a more skills-based approach, incorporating badges, micro-credentials and external learning resources. It also enables personalised learning to be introduced into higher education and workforce development, promising significant benefits in terms of better employee productivity and fit, more efficient and effective reskilling and workforce development. This approach is likely to also result in happier and more productive learner-earners, who have greater agency over their own lives and careers, and a better understanding of their capabilities and competencies. This should, in turn, enable them to make better life choices.

REFLECTION AND NEXT STEPS

As an approach, the profiling of skills has shown broad applicability within UK computer science higher education sector. Further studies are already underway to expand the contexts in which this approach can be applied such that its global applicability can be tested and demonstrated. Whilst evidence suggests that the approach itself seems sound, it does require a shift in how course teams consider learning outcomes and how they align skills to these. This approach provides a valuable opportunity for course teams to review current provision and provide opportunities to further personalise learning within higher education (Ward, 2020a; Ward, 2020b).

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ASPIRE: A CROSS-INSTITUTIONAL APPROACH TO EMBEDDING EMPLOYABILITY SKILLS AT UWS

Ruth Whitney **Stephen Watt**

UNIVERSITY OF THE WEST of SCOTLAND
UWS

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EPD Feedback Loop

CONTRIBUTORS

RUTH WHITNEY

Senior Lecturer and ASPIRE module co-ordinator

Email: Ruth.Whitney@uws.ac.uk

STEPHEN WATT

Careers and Employability Manager

Email: Stephen.Watt@uws.ac.uk

SUMMARY

ASPIRE is a set of core modules introduced to enhance the academic, personal and professional development of students at UWS. Integrated into multiple degree programmes ASPIRE is delivered via a cross-institutional approach and provides students the chance to take part in a range of activities to enhance and develop their skills and employability. A core part of the University's Strategy 2025 ASPIRE aims to support our students to become world-ready graduates with the skills, mindset and confidence to succeed and thrive, professionally and personally, in a rapidly changing world.

Implemented into the curriculum in September 2022 ASPIRE gives students the chance to shape their own skills development in areas such as team work, communication, entrepreneurship, career management and digital skills, with a strong focus on reflection, goal setting and action planning.

The ASPIRE curriculum is designed to enhance student success and the transition into, through and beyond university.

CONTEXT

In February 2020, the University of the West of Scotland adopted the UWS Strategy 2025 shaping the distinctive course of the next five years of our activity, including shaping the direction for Learning and Teaching with the commitment to: *"develop UWS graduates as the leaders of tomorrow. All students will be supported to gain world-ready meta-skills…".*

To realise that ambition, the Learning and Teaching Thematic Plan contains a key objective:
"Develop a suite of core and common modules across all programmes that develop students' 21st-century skills and attributes and complement the theory and knowledge-based modules."

Alongside the Learning and Teaching Thematic Plan, UWS Curriculum Framework (2022) expanded on this commitment. Each programme will contain a set of common "Personal, Professional and Academic Development Modules". These modules should be central to supporting student success, wellbeing, and employability at levels 7, 8, 9.

The ASPIRE module was developed as a direct response to this commitment and was formally approved in July 2022. Delivery was implemented across 22 programmes, across three schools (Education and Social Sciences, Business and Creative Industries and Computing, Engineering and Physical Sciences), at SCQF level 7 during academic year 2022/23. Roughly 600 students are taking the module in the pilot year and is undergoing evaluation with a view to rolling out to all programmes in 2023/24. At the same time, development of SCQF level 8 and 9 modules are at the design stage with students currently sitting the level 7 module due to take part in level 8 ASPIRE in 2023/24.

ASPIRE is a suite of core modules across all academic programmes delivered at levels 7-9 – each module will comprise 20 credits and run throughout terms 1 and 2 of the academic year. The aim of the module is to support students in their Academic, Professional and Personal Development (APPD).

The ASPIRE module prepares students to make the most of their experience at UWS. Students will have the chance to explore their aspirations for university study and think about how their degree connects to other aspects of their personal and professional life. This module is an opportunity to gain confidence developing the skills, knowledge and personal qualities that will prepare our students for life and work in the 21st century.

This module is delivered over two terms. In term one, students will begin by focusing on core Academic, Professional and Personal skills and attributes. They will also have regular supported reflection sessions with their ASPIRE Advisor (originally lecturers from academic schools at UWS with new Advisors recruited specifically for the role starting in early 2023). By the end of term one students will have created an action plan including keys areas they would like to focus on relating to their APPD in the next term and the future. Work on the module becomes increasingly student-centred, as students increasingly direct their learning in relation to their aspirations, needs and interests.

Group sessions with their ASPIRE Advisor will guide their engagement with a range of learning activities aimed to support them in making the most of their learning experience and in building a network to help them to progress and succeed. Students will learn to use goal-setting and action-planning strategies.

ASPIRE takes a cross-institutional approach to module design involving academic schools, Learning Transformation and Student Services. Through the module students will be introduced to the wide range of student services available to them including Academic Skills, Careers and Employability, and Wellbeing support.

By the end of this module, students will have produced an e-portfolio, which will be used to record and document engagement with the module and their reflective journey, demonstrating their development. The module will:

- ·Create the space for students to explore what they want to achieve while they are a UWS student.
- ·Give students opportunities to engage in activities that will help them to progress and succeed while at UWS.
- ·Help students to build a supportive network and become part of the UWS community.
- ·Promote awareness of how others at UWS can help them in their journey.

Module learning outcomes

On successful completion of this module the student will be able to:

L1. Identify personal values, motivations, and ambitions
L2. Develop an action plan to support progression and success
L3. Select evidence to demonstrate progress against their action plan
L4. Reflect on engagement in a range of learning experiences
L5. Work autonomously and with others in ways that respect diversity and the value of collaboration

METHODOLOGY AND IMPLEMENTATION

Module underpinnings

Underpinning the Level 7 ASPIRE module are five pillars which can be articulated and contextualised in ways that make them sustainable across the academic, professional and personal development (APPD) modules at level 7, 8 and 9. These five pillars, inform the approach to curriculum at Level 7 comprising three strands, namely: core content, supported personal reflection, and self-directed activity.

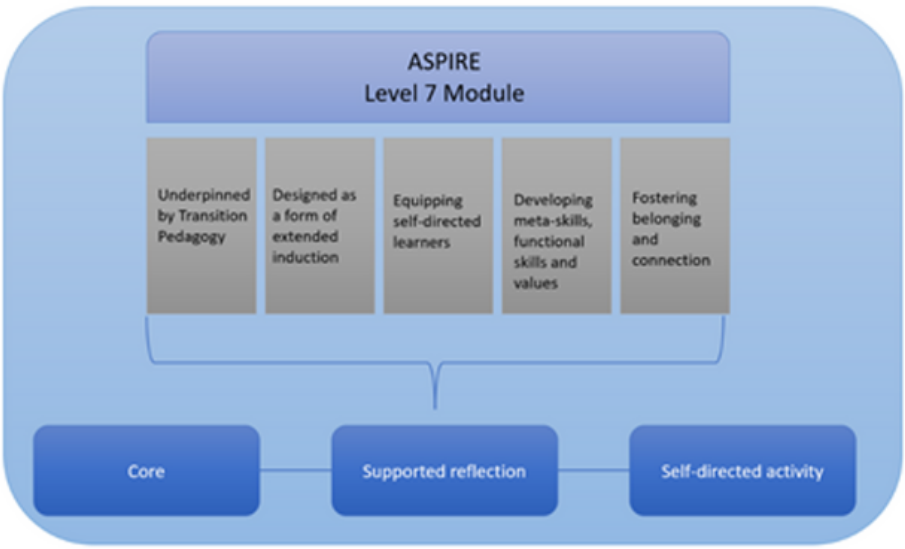

Figure 1: Table1: ASPIRE Level 7 – Module structure

Pillar 1: Underpinned by Transition Pedagogy

As UWS students transition into, through and beyond their university studies they experience multiple and concurrent transitions therefore a transition pedagogy (Nelson, Creagh, Kift & Clarke, 2014), supporting students to navigate transition, will underpin APPD.

Specifically relevant to the development of Level 7 curriculum is a focus on supporting transitions into and through initial experiences at university, and the foundations of what is needed to thrive at UWS and beyond. Four first year experience strategies at a programme level - from Nelson et al.'s (2014) Transition Pedagogy - are core to APPD:

- ·Curriculum that engages students in learning
- ·Proactive and timely access to learning and life support
- ·Intentionally fostering a sense of belonging
- ·Sustainable Academic-Professional partnerships

Pillar 2: Designed as a form of extended and scaffolded induction

This will vary across levels of study, but the Level 7 APPD curriculum is designed, in part, as a form of extended induction to UWS. The planning of content, activities, nature of engagement and contact is shaped by a recognition that our students arrive at UWS 'with a spectrum of preparedness' (Hughes, 2020) and that APPD will support student transitions into university in a timely and relevant manner; with initially greater scaffolding, core content and contact before progressing into more self-directed and flexible engagement that is increasingly student-led.

Pillar 3: Equipping self-directed learners

Recognising the diversity within our student body, central to APPD at Level 7 is equipping students with approaches that support discovery of self, self-reflection, decision-making and informed choice, and perspective-taking on experience, including navigating challenge. Therefore, this curriculum not only recognises the importance of student agency but explicitly and proactively equips and empowers that agency through scaffolding all students to become increasingly self-directed in exploring, identifying, choosing, and reflecting on their development needs and interests to support them to thrive at UWS. As the Level 7 module progresses it becomes increasingly student-led. This provides the foundation for Levels 8 and 9 of APPD where students pursue increasingly self-directed and personalised routes.

Pillar 4: Developing meta-skills, functional skills and values

Within the APPD Curriculum will sit a core framework incorporating meta-skills, functional skills, and values.
Meta-skills: Our UWS Strategy 2025 is committed to developing students and graduates with meta-skills, which can be defined as higher-order skills supporting individuals to adapt and thrive across different contexts for example, creativity or leadership. (Skills Development Scotland, 2022)

Functional skills: Comprise more specific learned abilities related to contexts, roles, and tasks, for example academic referencing or note-taking, or skills directly linked and contextualised within their subject of study, anticipated professional membership or future field of employment.

Values: In addition to the skills focus within APPD, students will be encouraged to reflect on their own personal values and consider the ways in which they align with or adopt the values of different communities to which the join or ASPIRE to join for example UWS community values or professional values.

The APPD framework, will be used by students to support discussions, exploration, alignment, evidencing and reflection on experience, learning and development throughout APPD. The core framework will be aligned with the UWS Graduate Attributes (2018) - defined as "the skills, personal qualities and understanding to be developed through your university experience that will prepare for life and work in the 21st century" - and can also be mapped onto other frameworks such as the Skills Development Scotland Meta-Skills Framework.

Pillar 5: Fostering belonging and connection

APPD will both provide opportunities to foster a sense of belonging through the experience of this curriculum, as well as supporting students to identify communities to which they belong (within and outwith UWS). Enabling students to consider how they become a member of a community or indeed recognise those to which they belong includes - connection to their programme of study, the broader UWS community and groups within, communities of which UWS is part, career and professional belonging, and reflection on connections to groups, organisations, and networks beyond university. A sense of belonging is identified as critical in supporting a perceived sense of integration associated with student persistence at University (Tinto, 1993), and exploring multiple dimensions of belonging identified as particularly critical for widening access contexts and diverse student groups (Thomas, 2012).

Level 7 module structure

The module at level 7 is designed to incorporate three strands -the core, supported personal reflection, and self-directed activity – delivered across the academic year. The core includes asynchronous content created by Academic Skills, Careers and Wellbeing teams. With relation to careers and employability, the Careers Service designed sessions around self-awareness and graduate labour markets, helping raise awareness and increase engagement in careers management and employability at scale and early in the student journey. The third strand of the level 7 module, taken in term 2, allows students the chance to choose from a selection of meta-skills sessions, with choices being informed by their reflections from term 1. This includes sessions on skills such as communication, leadership and enterprise/innovation, while also giving the opportunity to take sessions on developing career management skills, wellbeing and academic skills. Throughout this time students undertake supported reflection with their ASPIRE advisers.

Piloted in 2022/23 across 22 programmes the module is being constantly evaluated to shape the delivery across all programmes at level 7 in 2023/24.

Level 7 module evolution and implementation

The University committed to including common APPD modules in all undergraduate modules due to the increased need for the University to support students to develop skills and attributes required by industry and society. The modules were to take a holistic view of the skills and attributes needed in their academic, professional and personal development. The modules were also designed to allow students to bring in other learning and development. This could include learning and development from a part-time job, extra-curricular activities including involvement in clubs and societies, and other relevant or prior activities.

Assessment

·A formative action plan
Students receive feedback on the action plan, but this is not graded. The action plan assessment allows students to record and reflect on their motivations, values, goals, ambitions and the action they plan to take to achieve their goals.

·Summative e-portfolio
The e-portfolio, using the PebblePad platform, makes up 100% of the assessment for the module. It will contain artifacts relating to the action plan and demonstrating the students' academic, professional and personal development.

Labour Market Information

The UWS Strategy 2025 has a commitment to "…develop UWS graduates as the leaders of tomorrow. All students will be supported to gain world-ready meta-skills…". To address this commitment the ASPIRE module set out to support the development of students' 21st century skills and attributes in line with UWS's own Graduate Attributes.

In influencing the design of the module and our approach to skills development a wide range of labour market resources were consulted. A recent report focusing on student and graduate skills (QAA, Focus on Graduate Skills, 2019) highlighted low confidence in the skills needed for a chosen career, lack of understanding of employer expectations and issues in being able to evidence the skills they had developed. This report also highlighted the need for more skills development opportunities. In addition, a recent survey carried out by Handshake, ISE, AGCAS and WonkHE (Careers 2032) highlighted the lack of student confidence in skills articulation and their preparedness for a graduate job.

In thinking about how to address these issues within ASPIRE cognisance of the results of the ISE Student Development Survey (2021) allowed identification of some of the key skills that graduate employers both demand and in which they report gaps. This includes skills such as career management, leadership, self-awareness, emotional intelligence and commercial awareness.

However, to provide a framework on which to base the design of the module and address the development of 'world-ready meta skills' we have aligned the module content, in particular the self-directed activity in Strand 3, with the Skills 4.0 model of meta-skills (Skills Development Scotland). Defined as 'higher order skills supporting individuals to adapt and thrive across different contexts' we identified a range of skills sessions (including many of the key areas of development as highlighted by industry in the ISE survey) that aligned with the three overarching skills areas identified in the model: Self-management, Social Intelligence and Innovation. All the skills sessions available for students to choose from align with at least one of the 4 noted meta-skills under each of the overarching headings.

As the module develops, we will continue to monitor key graduate labour market information and build communications with sector bodies, industry and employers in keeping the module content relevant and up-to-date.

It should be noted that ASPIRE is not designed to replace or compete with existing employability activities contained within specific programmes – this includes professional practice modules, work-based and work-related learning, or embedded careers education within the curriculum. Instead, it should run concurrently alongside these with the potential to provide an enhanced personalised experience for the students and to make the most of these other activities. As the module evolves there may be scope to see more integration of these employability activities with ASPIRE.

ANALYSIS AND EVALUATION

The module is being and will be evaluated in a range of ways. A student feedback survey was sent out at the end of week 8. Students were asked how they were settling in and what they liked and did not like about the module so far, along with what they wanted less of and more of in the module. The schools ran SSLG (Student Staff Liaison Groups) at the end of term one and feedback on ASPIRE was gathered by schools' colleagues. The marketing and communications team also gathered feedback from students at the end of term one with the view to identifying module 'champions' and to gather student testimonies. Towards the end of the module, standard university MEQs (Module Evaluation Questionnaires) will be used to gather student feedback. Furthermore, focus groups with students are planned for later in this term to gather more in-depth feedback.

As well as student feedback, staff feedback has been and will be gathered. A survey was sent to ASPIRE Advisors at the end of term one to gather similar feedback to that gathered from students. Colleagues were asked how the module delivery was going, what they liked and did not like about the module so far, along with what they wanted less of and more of in the module. Staff feedback is also collected through the APPD working group, boards and other meetings with colleagues. For the development of the Level 7 module and the design and development of the Level 8 and 9 APPD modules, two design days were held in November for colleagues across the university. An additional consultation meeting was held for Programme Leaders in December.

REFLECTION AND NEXT STEPS

The feedback on the module so far has been mixed. The most notable comments from student relate to the delivery of the module. Some students would like the module to be entirely online, others requested more in-person and on-campus sessions and others wanted more synchronous content (either online or on campus). This feedback mirrors feedback received on a range of modules from across the university.

The other area students commented on was the links between the module and their other modules and/or degree programme. This is an area of feedback that was addressed for term two and will also be addressed in the delivery of the 2023/24 module. To address the feedback directly in term two, ASPIRE Advisors were given more control over the topic of the group project to allow them to further contextualise the academic, professional and personal development activities within the subject area.

The next steps are to complete the evaluation of the pilot module and implement any required changes before the 2023/24 delivery. Additionally, the development of the level 8 and 9 modules is in progress with the students currently taking the level 7 module due to take the Level 8 module in the 2023/24 academic year.

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Supporting Documents

UWS Strategy 2025
UWS Curriculum Framework
UWS Graduate Attributes

Co-funded by the Erasmus+ Programme of the European Union

EPD Feedback Loop

BOOSTING EMPLOYABILITY AT EDGE HILL UNIVERSITY:

Embedding Graduate Attributes across the University using PebblePad

Becka Colley-Foster
Edge Hill University

Co-funded by the Erasmus+ Programme of the European Union

EPD Feedback Loop

CONTRIBUTORS

BECKA COLLEY-FOSTER

Head of Careers and Graduate Employability, Edge Hill University, UK

email: colleyb@edgehill.ac.uk

SUMMARY

As part of our employability strategy 2020-2025, 20 graduate attributes were identified that all Edge Hill students would have the opportunity to develop during their studies (see Image 1 below). These graduate attributes were developed in consultation with employers, students and staff, and a glossary of terms was produced to ensure consistency across the University as to what these graduate attributes meant (2022).

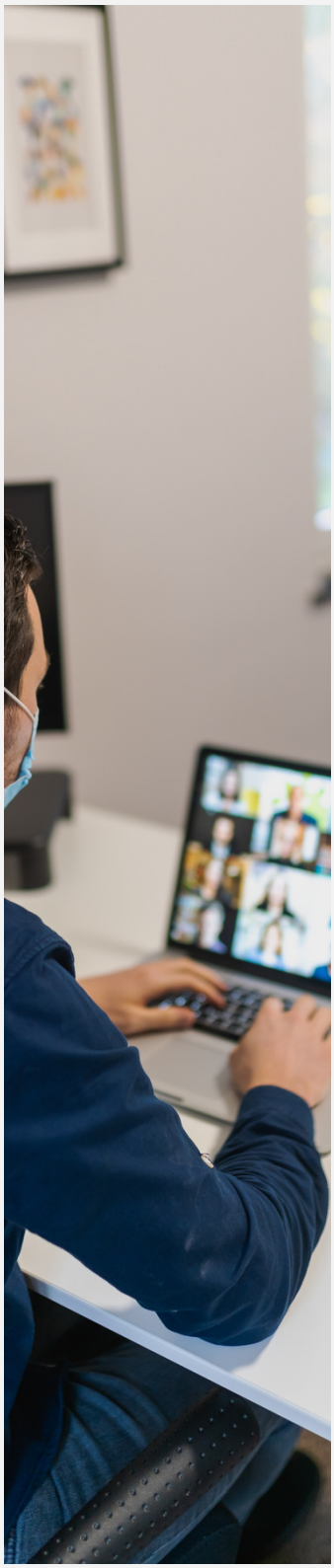
An ePortfolio system (PebblePad) was introduced to enhance the roll out of the graduate attributes process and to provide a coherent framework for reflection. An existing skills and personal reflective tool, SaPRA, was repurposed to provide a structure for the graduate attributes process. Employers, students, graduates, academic and support staff and the Student Union have all contributed to the processes that have been implemented. Even at this early stage, we have seen a positive impact on employer feedback, Graduate Outcomes and improving individual students' stage of Career Readiness (Career Readiness is a process of identifying what stage a student is in their career planning. At enrolment and re-enrolment each year, the Careers team ask all students a series of questions to establish their stage of Career Readiness.).

CONTEXT

Supporting students to articulate their skills and evidence them effectively during the recruitment and selection process remains of key importance to HEIs. The requirement from the Office for Students (OfS) to ensure programmes meet a minimum threshold of 60% progression into highly skilled employment through the B3 metrics (Condition B3 from the OfS requires all providers to deliver successful outcomes for all of its students. One of these measures focuses on progression i.e. have students from a course progressed into a positive graduate outcome: highly skilled employment, further study or a number of other positive outcomes. More information) places an ever-increasing pressure on Careers Services to support staff and students to meet these expectations.

Since 2014, a skills and personal reflective activity (SaPRA3) has been used at Edge Hill University. The tool was created by the case study author in 2006 with the aim to provide students with a framework for reflection and to support them to generate effective statements of evidence of their skills.

CONTEXT



SaPRA is broken into three distinct stages:

1. Reflection and confidence ranking on a series of different skills and attributes.
2. Creation of an action plan for the further development of skills and attributes where an individual reported that they lacked confidence (ie. self-assessed as 1-3 out of 5)
3. Generation of statements of evidence where an individual has reported themselves as being confident in particular skill or attribute (ie. self-assessed as 3-5).

Various platforms have been used to share the SaPRA tool with students, starting with paper in 2014, then transitioning through a career management tool (CareerHub4)[2015-2018], to a series of excel worksheets [2018-2021] and finally onto our institutional ePortfolio, PebblePad, which we transitioned to in 2022. Each has its own merits, however, with the wholescale institutional adoption of SaPRA taken recently by Edge Hill, PebblePad has proved to be the most reliable and flexible platform. Graduates can retain access to PebblePad after their studies are complete, meaning support remains ongoing. External stakeholders - e.g. employers or volunteering organisations - are also able to access and sign off on student engagement with particular work-based learning activities without needing an account to be verified.

Since its introduction in 2014, SaPRA was embedded across the University, and made bespoke to each programme of study. Academics, students and employers were all involved in the process of identifying which skills should be included in the student reflections. Content was updated every academic year and different versions were produced for Levels 4, 5, 6 and 75. However, as part of our approach to rolling out our new graduate attributes framework institution-wide, the decision was made to move away from offering bespoke SaPRA activities for different programmes and instead to focus on the set list of 20 graduate attributes.

METHODOLOGY & IMPLEMENTATION

Defining the graduate attributes:

Our graduate attributes were developed in partnership with employers, the Student Union, students, academic staff and staff from professional and student services. Our starting point was a series of graduate attributes identified by the Institute of Student Employers (2000). We discussed these attributes with our employer networks to identify what they felt made an Edge Hill graduate unique. Their ideas shaped our approach and also the specifics focus and composition of each graduate attribute. Students were engaged in the process via consultation at faculty boards and through the Student Union representative system. Staff were also asked to reflect on the specific skills students developed as a result of their academic studies. All of these responses were then collated, agreed and became our institutional graduate attributes.

Our revised graduate attributes were launched across the whole University in Sept 2022. They are broken down into four areas, each with a number of different related skills and attributes:

Core Skills

1. Digital Literacy
2. Numeracy and Data Analysis
3. Literacy

Conceptualising Skills

1. Complex Problem Solving
2. Critical Thinking
3. Planning and Organisation
4. Creative and Innovative Thinking

Reflective Skills

1. People related skills
2. Teamworking
3. Communication
4. Influencing and Negotiating
5. Networking
6. Leadership

Personal Attributes

1. Resilience
2. Adaptability and Flexibility
3. Self-Motivation
4. Self-Belief
5. Professionalism
6. Empathy
7. Inclusivity

A glossary of terms (Image 1) was produced to ensure consistency over the definition of each graduate attribute. This ensures that staff and students have the same understanding when any one of the graduate attributes is referred to:

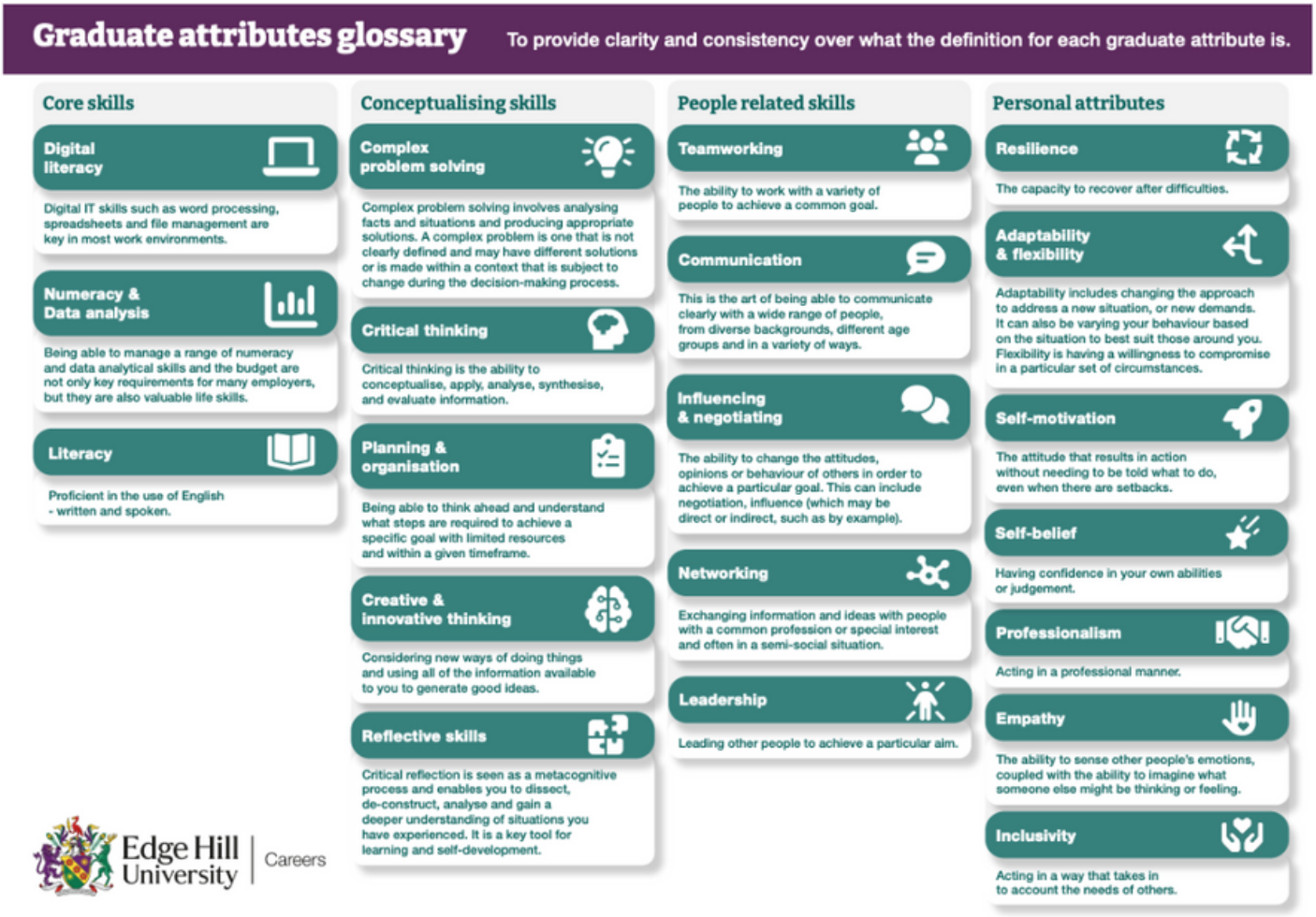


Image 1: Edge Hill University's 20 Graduate Attributes

In order to achieve institutional roll out of the graduate attributes, a single graduate attributes workbook was created using PebblePad. All students and staff at the institution have access to this workbook. The whole University was expected to engage with the process during 2022/23. This was achieved both by embedding the graduate attributes into the curriculum, and developing extra-curricular activities, such as our Extra Edge award that uses the graduate attributes framework. Support was available to staff to help them to update their module handbooks and assessment briefs to ensure that the graduate attributes were explicitly identified.

As part of the graduate attribute's glossary, examples of evidence for each graduate attribute have been provided. Feedback from students and employers showed us that we needed to be clear and explicit about what we were expecting to see as evidence to help students engage with the reflective elements of our approach.

Image 2 shows a screenshot from the PebblePad workbook, showing one of the graduate attributes (Critical Thinking) and how a student is expected to reflect on their level of confidence:

CRITICAL THINKING SKILLS

Each graduate attribute has its definition which is then followed by some examples of what this graduate attribute might look like in practice. This approach was developed by our Head of Allied Health Professions who allowed us to use his definitions for the graduate attributes workbook.

Students are asked to reflect on their levels of confidence on a scale of 1-5 with 1 being "I lack confidence in this" and 5 being "I could teach someone this". If a student scores themselves 1, 2 or 3 they are asked to develop an action plan to help them improve their levels of confidence. If they score 3, 4 or 5 they are asked to generate some evidence of their confidence and competence in this skill. This can be added to their workbook in whatever format they desire: text, video, photos and so on. The ultimate aim of this process is for students to curate a portfolio of suitable evidence that can be included in future job applications or used as evidence at an interview.

As the student owns the content in the workbook, they can choose who to share it with for feedback. In Careers, we use the content to help students write effective applications for the next stage in their life journey. On some of our academic programmes, the workbook has been embedded as part of the assessment for a module. In other departments, personal tutors use the workbook to structure conversations with their tutees and help them focus on where they need to develop their skills.

The graduate attributes have been embedded into:

- Module handbooks
- Assessment briefings and guidance
- Assessment marking criteria
- Student feedback and action points

Our approach to personal tutoring

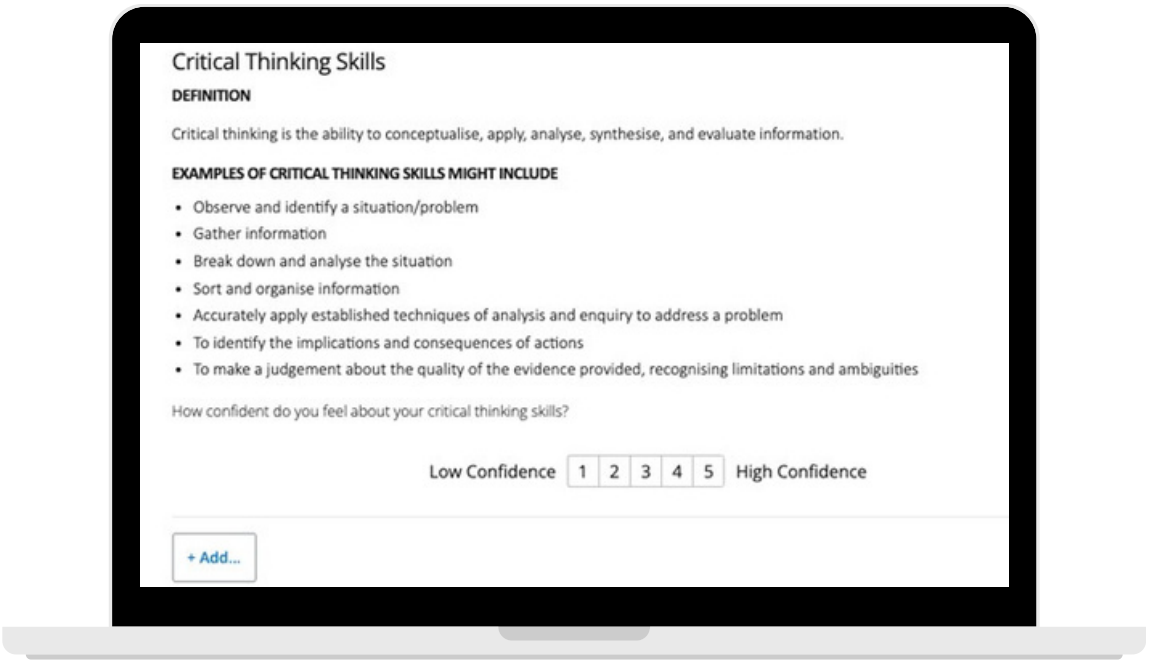


Image 2: Screenshot from PebblePad Graduate Attributes workbook

Whilst the embedding of graduate attributes is mandatory across the institution, exactly how different departments go about embedding the graduate attributes has been left up to them. This allows for different approaches to be implemented depending on the nuances of their cohorts and pedagogical approaches. Some have chosen a whole departmental approach, as evidenced by our department of Sport and Physical Activity. They have embedded the graduate attributes and our stages of Career Readiness into their curricular provision, including assessment, at all levels of study. This is reinforced by their personal tutors who have check lists of topics to discuss at their regular meetings with tutees. The department have also embedded the process into their extra-curricular provision. The department has a large number of active sports clubs and societies, and they are keen to ensure their students are aware of the skills they are developing outside the curriculum, as well as within the curriculum. All of their programmes are professionally accredited, and the graduate attributes process helps with these professional endorsements too. The professional bodies require evidence of professional skills being developed and assessed as part of the curriculum. Our graduate attributes meet these criteria and our approach to embedding them into the curriculum has satisfied their requirements.

Image 3: Example of how the Graduate Attributes are identified in a module handbook at Edge Hill University

CORE SKILLS		CONCEPTUALISING SKILLS	
GA1 Digital Literacy	☒	GA4 Critical Thinking	☒
GA2 Numeracy & Data Analysis	☒	GA5 Complex Problem Solving	☒
GA3 Literacy	☒	GA6 Planning & Organisation	☒
		GA7 Creative & Innovative Thinking	☒
		GA8 Reflective Skills	☒
PEOPLE RELATED SKILLS		**PERSONAL ATTRIBUTES**	
GA9 Communication	☒	GA14 Adaptability & Flexibility	☒
GA10 Teamworking	☒	GA15 Resilience	☒
GA11 Influencing & Negotiating	☒	GA16 Self-Motivation	☒
GA12 Networking	☐	GA17 Self-Belief	☒
GA13 Leadership	☐	GA18 Professionalism	☒
		GA19 Empathy	☒
		GA20 Inclusivity	☒

In contrast, our Film, Media and Television programme have taken an entirely different approach and embedded the graduate attributes into a single module which is taken by final year students. Their approach has been to group the graduate attributes together into a series of participative seminars. These seminars are focused on making the graduate attributes authentic and linking to real world experiences. They are tutor led, but peer supported. Examples of the seminar topics are:

- Challenges: Self-Confidence and Resilience
- Budgets and Grant Bids
- Assertiveness and Leadership
- Critical Thinking After University

ANALYSIS AND EVALUATION

Our institution-wide project has been large scale and not without its challenges. For example, we weren't able to launch the graduate attributes workbook as intended in October due to technical issues with integrating PebblePad and BlackBoard. However, once the workbook was launched, students and staff were quickly and easily able to engage with the process. There was some concern about staff development needs in leading this process for their students, but the way the graduate attributes workbook has been built in PebblePad means that students are able to follow the process easily themselves. All of the content and guidance for the students is contained within the workbook itself. Staff merely have to act as a guide and facilitator.

Staff have been fully supported with the process with regular workshops being delivered to help staff become familiar with the PebblePad platform. A series of summer roadshows were delivered at staff learning and teaching away days to help staff become confident with the approach. In addition to this, regular drop ins have been held by our learning technology team to support staff further as required. The approach has been discussed at regular internal meetings ie. Faculty board and departmental learning and teaching meetings, allowing staff to give feedback on the processes before they were implemented. The whole process has been positive with good levels of staff engagement.

Feedback from employers and external stakeholders is obtained on a regular basis as part of the Careers evaluation process. We hold two feedback weeks each academic year and also obtain feedback from our stakeholders after we deliver events. All feedback received so far has been very positive. We are currently working with a number of organisations6 to help them develop a similar approach for their pupils and/or staff. Employer feedback received during this academic year has also indicated to us how much more prepared our students and graduates are when applying for roles or undertaking placements:

- TVS Supply Chain Solutions:

"Well organised, prepared students, good communicators, better than other Universities"

- Lancashire Police:

"Your careers team are a credit to Edge Hill for the amount of support and inputs available to students - this offer is far superior to other HE establishments we work with. Sadly I doubt your students realise this however I hope they take full advantage of the support available to help them move from full time education towards a career of their choice."

- Young Person's Advisory Service

"We experienced a very high level of student engagement"

STUDENT FEEDBACK

Student feedback shows how the process has helped them to develop confidence and take control of their lives:

"I feel that I can realistically talk about myself in a positive light and don't feel second to other people, even when I should be proud of what I've achieved." [Student 1]

"I have gained a broader perspective of my achievements as an individual and academic. The experiences I have gained over the last two years have broadened my horizons, provided insight into my abilities, and strengthened my confidence." [Student 2]

"This has not only built up my confidence when asking for help but has also equipped me with the knowledge when going for interviews and what's the best things to add into job applications are." [Student 3]

"I have learnt that I should have more confidence in myself and that I should continue to go outside of my comfort zone. Some of the activities I have completed have helped me to be ready to apply to jobs in the future." [Student 4]

STAFF FEEDBACK

Staff feedback indicates the value of our institutional approach:

"The questionnaires, which I adapted for 3 levels in Media, have been a useful tool to enable students to gauge their skills level and needs." [Academic]

"The Graduate Attributes are reviewed regularly by all Personal Tutors as part of a revised Departmental approach introduced in academic year 2022/23, and this has increased students' engagement substantially in careers related activity. This is accompanied by a Department-wide roll-out of PebblePad and Linkedin Learning which is now used by students across all levels of study (4-8). Previously students did not engage with these." [Associate Head of Department]

REFLECTIONS & CONCLUSIONS

Overall the process of embedding our graduate attributes has been successful. We are still in the early stages of roll out and hope to develop a richer body of evidence over the next few years, including improved Graduate Outcomes. We have a systematic approach to evaluation, review and planning within the Careers team. Feedback from all stakeholders enables us to continually enhance and improve our offer. Engaging with employers from the outset has enabled us to develop a framework that is authentic and links to real world experiences. We hold a twice yearly Graduate Recruiter Forum where we meet with representatives from all employer sectors and discuss with them what their needs are. Their feedback is directly fed back into our approaches. Based on our experiences so far, our biggest piece of advice is to make the process structurally unavoidable, so that staff and students are unable to navigate around or avoid the process. The process has also been truly team based, with staff and students from across the institution being involved in the process from the Student Union to our Learning Technologists, Heads of Departments and staff in Careers.

REFERENCES AND HYPERLINKS

Graduate Outcomes survey https://www.graduateoutcomes.ac.uk/about-survey

The Career Readiness process at Edge Hill https://www.edgehill.ac.uk/departments/support/careers/how-can-we-help/career-readiness/

Office for Students (OfS) https://www.officeforstudents.org.uk/

Condition B3 https://www.officeforstudents.org.uk/media/490d884f-03aa-49cf-907d-011149309983/condition_b3_baselines.pdf

SaPRA (Skills and Personal Reflective Activity) https://epip.pbworks.com/w/page/40663193/Exemplar%20of%20use%204%20-%20Bradford

CareerHub https://careerhub.co.uk/

PebblePad https://www.pebblepad.co.uk/

National Qualification Framework https://www.gov.uk/what-different-qualification-levels-mean/list-of-qualification-levels

Institute of Student Employers (ISE) 2000 The IES Annual Graduate review 2000 https://www.employment-studies.co.uk/system/files/resources/files/367.pdf

Edge Hill's Extra Edge Award https://www.edgehill.ac.uk/departments/support/careers/developing-skills-experience/employability-awards/

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EPD Feedback Loop

CAREER ACTIVATION PROGRAMME: EMBEDDING PROFESSIONAL EXPERIENCE AND CAREER FOCUS TO BOOST GRADUATE OUTCOMES AND CLOSE THE EMPLOYABILITY GAP

WENDY BROWNE **GEMMA KENYON**

CITY UNIVERSITY LONDON

Co-funded by the Erasmus+ Programme of the European Union

EPD Feedback Loop

CONTRIBUTORS

WENDY BROWNE

Employer Engagement Manager- Integrated Experience

Email : wendy.browne@city.ac.uk

GEMMA KENYON

Director of Careers & Employability

Email: gemma.kenyon.2@city.ac.uk

SUMMARY

The Career Activation Programme is a sector-leading approach which aims to improve students' experience, skills, and chances of securing rewarding careers. City, University of London is one of the first UK universities to make professional experience and career-focused modules a mandatory and integrated part of every undergraduate course for new students.

As the university of business, practice and the professions, City works closely with employer partners to ensure all experiences, whether they be projects, placements, or alumni panels, are meaningful, relevant and improve professional-level skills. In 2021/22, 75% of our students came from BAME backgrounds, 44% from Widening Participation, and 30% from lower socio-economic backgrounds.

Although it is early days in the initiative, and success will ultimately be measured by graduate outcome metrics, league tables and student satisfaction surveys, we have seen:

- a reduction in the attainment gap between White and BAME students, and between UK UG students living in areas with the highest and lowest levels of relative deprivation (as measured by Index of Multiple Deprivation (IMD)).
- The BAME awarding gap decreased from 12.1% in 18/19 to 4% in 2020/21,
- The gap between students from IMD Q1 and IMD Q5 has reduced from 6.7% to 0.6%

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CONTEXT

Work placements and careers guidance are longstanding and important facets of university education, but City's new Career Activation Programme (CAP) takes student employability to a whole new level. Recognising that the diverse backgrounds of our students can mean barriers to dedicating spare time to employability activities, the Careers and Employability department led by Gemma Kenyon, created the CAP. Implementation of this ambitious, institutional strategy was completed in 2022/23; all undergraduate courses now have 'career focus' education and professional experience as core, credit bearing components. Channeling City's 'we learn' value, the strategic vision was based upon large scale external research which examined determinants of long-term success in the labour market. To our knowledge we are the only large UK university to have embedded these two distinctive aspects of employability support as core in all UG programmes.

More than half of our undergraduate students come from the bottom 40% of areas for deprivation when measured by IMD, and the large majority commute, sometimes long distances. These factors, among others, can present additional barriers to dedicating time outside of study to activities which develop employability. "We recognise that many of our students have complex lives. Some have caring responsibilities or part-time jobs, so find it more difficult to get experience opportunities outside of their studies. We also have a high proportion of students from disadvantaged backgrounds who don't have a network of people they know in professional occupations that they can call on to secure placements. By making experience and support an integral part of the curriculum, we're levelling the playing field."- Gemma Kenyon, Director of Careers and Employability.

Several City courses already offer a year-long placement in industry, but that experience isn't available on every course and not every student necessarily wants to add a year to their studies. Similarly, not every organisation can offer such a long placement. To address this issue, the University has teamed up with a wide range of employers, from global blue-chips to local SMEs, public sector bodies to charities and action groups, to provide a wider range of experience placements and projects as part of the CAP. To achieve this, we leveraged and expanded relationships garnered from employer engagement on previous initiatives. We also developed extensive relationships with the local community and alumni via outreach activities such as business breakfasts.

RATONALE

City's institutional employability KPI is our ranking position in the 'graduate prospects rate' indicator in the Times and Sunday Times Good University Guide. This indicator is based on the proportion of UK graduates from undergraduate courses with a 'positive' employment outcome (graduate-level employment or further study) set against the proportion of those with a 'negative' outcome (non-graduate employment or unemployment). City's 2023 rank was 45th, and our aspiration was to be in the top 20.

Large scale research undertaken on behalf of the Department for Education in 2017 ("Planning for success: Graduates' career planning and its effect on graduate outcomes") into factors that determine the longitudinal employment outcomes of graduates concluded that two significant predictors of long-term employment outcomes are having Career Focus at the point of graduation and some professional experience.

Our data indicated that on both of these counts, City UK UG students required more support. For example:

- 32.5% of UK UG 2019 students surveyed at the point of graduation have Career Focus
- In 2018 42.7% of UK UG final year students had undertaken some professional experience by the beginning of their final year (this drops to 37.5% when our School of Health graduates were discounted. 'Professional experience' defined as an internship or placement either independently or as part of a course, full- or part-time work related to my degree, or starting my own business.)

In recognition of these issues, our CAP was built on two foundational commitments. Namely, that:
1. Every undergraduate programme will contain core professionally relevant experience, helping students to develop graduate level skills in a real-world context; and
2. Every undergraduate programme will include Career Focus education as part of the core curriculum, thus supporting our students to develop career readiness

As far as we are aware, no other UK HEI is currently making these simultaneous commitments, providing a distinctive USP for our institution.

These radical commitments can be expressed in terms of the following vision for the student experience:

- Professionally relevant experience: The professionally relevant experience I undertook as part of my degree gave me confidence and extra skills I needed. It also gave me the opportunity to learn about a sector I'm interested in.
- Career Focus: My course included a module which helped me decide which area I want to go into, to understand that sector and advised me on how to get the job I want when I graduate.

This Vision was endorsed by our Education and Student Committee (February 2019), ExCo (April 2019) and Council (May 2019).

METHODOLOGY & IMPLEMENTATION

Partnership working with all Schools and relevant professional services over the past 3 years has enabled the realisation of this ambitious vision for all UG students. To achieve this, a new project group was created to oversee the curriculum change process which reported to the Education and Student Committee attended by all relevant senior members of staff. Throughout the implementation, the approach utilised existing 'business as usual' structures and processes such as annual programme evaluations and periodic reviews. The leadership involved multiple stages and partnership working with many parts of the university. The process began in 2019 when endorsement for the vision at all executive decision-making committees was obtained. Extensive partnership working with the School executive teams, the Students Union, professional services and students yielded the creation of a cohesive employability development plan. In 2020 the articulation of financial plans for this plan led to the creation of the investment funds required. Thanks to a City investment of £695,000, the CAP has now been fully implemented and all students beginning their course from 22/23 onwards are guaranteed to have both career focus and professional experiences as a mandatory part of their undergraduate course.

As outlined above, the two key foundations of the CAP are our 'career focus' modules and our embedded professional experiences. More details of these integral pillars of CAP are given below:

1. The first part of the CAP is to ensure the inclusion of 'career focus' modules (or elements of modules) tailored to individual programmes. Each module is core and credit-bearing and focuses on equipping all students with (i) an understanding of the career options relevant to their subject, (ii) support with career decision making, and (iii) a knowledge of how to present themselves effectively during competitive recruitment processes. There has been a gradual roll-out of these support activities from 2019 to 2022, with 55% of 2019/20 entrants receiving support, 60% of 2020/21 entrants, and 81% in 2021/22. In 2022/23, 100% of undergraduate students have 'career focus' as a core credit bearing element of their programme.
2. Secondly, we are committed to ensuring that all undergraduates complete professional experiences during their studies, in a format and at a time which suits them. We have created an innovative range of 15-credit professional experience modules which reflect diverse career paths. Roll-out began in 2019 and has now been completed with 100% of undergraduate students starting in 2022/23 experiencing a professional experience as a core, credit bearing element of their programme. These professional experience modules come in three types: Micro-Placements Programme (MPP), industry projects and social action projects.

2.1. Micro-Placements

On the Micro-Placement Programme (MPP) students complete a 140-hour project-based placement in the summer. Projects are sourced to enable the student to have ownership of a tangible piece of work they can deliver within the time period, that meets a genuine need for the employer and utilises graduate level skills. All stages of the process are handled by City's Employer Engagement team - Integrated Experience led by Wendy Browne, Employer Engagement Manager - Integrated Experience based in the Careers and Employability Department. This includes the sourcing and vetting of all placement opportunities. Extensive strategic partnerships are brokered to attract relevant, interesting and challenging projects for students. A dedicated adviser team works extensively with employers to ensure projects are pitched at the appropriate level for first and second year students across a huge variety of sector and size of organisation. There is a dedicated coordination team which supports and prepares the students for their placements with a series of comprehensive and tailored employability workshops, co-delivered with sought-after employers. Starting as a pilot of 32 students, the programme has grown substantially, with 450 students planned to avail of a Micro-Placement in summer 2024.

2.2. Industry projects

A key component of the CAP and of our wider institutional offer are our industry-led consultancy projects, which are employer directed. These modules involve students working in teams to complete employer projects that address real-world concerns. For example, in our Bayes Business School, we run a final year module in Business Management where students work as consultants with employers on real-world business projects. Experienced business professionals work alongside the students as tutors. Similarly, Law firms offer commercial projects to our final year Law students. Business Management and Finance students also have the option to take on individual research projects again supplied by employers.

2.3. Sociology Social Action Projects

Our Sociology Social Action module enables community engaged learning through a core second year module. It is a collaboration between the Careers and Employability, and Sociology departments. The module was piloted as an elective in 2020/21, before becoming a core module delivered to 176 students in 2021/22. The module helps develop employability skills by bringing students together into groups to seek out an external community organisation to work with, typically through running events, raising awareness through social media and conducting research.

ANALYSIS AND EVALUATION

Whilst the evaluation of the CAP is in its early stages, we have established a range of short-term and longer-term performance indicators. These include the indicators laid out below:

Short-term impact (immediately post module completion):

- Feedback from students
- Module evaluation (specific programme delivery)
- Feedback from staff
- Review of partnership working between Schools and Careers & Employability (C&E)
- Medium-term impact (at the start of the following academic year)
- Careers Registration feedback (ie. do students self-report transition into a more developed phase of career readiness)
- The Career Activation Programme and Employer Engagement Strategy were highly commended for the Institute of Student Employers' 2023 University and Employer Engagement Strategy Award

Long-term impact (15 months post-graduation)

- Positive destinations in the Graduate Outcomes Survey. Our institutional targets are to be in the top 20 for Graduate Prospects in the Times Good University Guide and top non Russell Group, non-specialist HEI for Graduate Prospects in London.

As outlined above, the key foundations of the CAP are our Career-focus modules, our Micro-placements, our Industry Project modules, and our Social Action Projects. The evaluation data gathered to date on these key activities is laid out below.

Career focus modules

All 'career focus' modules are bespoke to individual programmes and focus on equipping students with understanding the career options relevant to their subject, support with decision making and knowledge of how to effectively present themselves during competitive recruitment processes. All modules are core and credit bearing. Pre- and post-module learning gain surveys from 2021/22 show that the majority of students are more aware of their career options (average 57% before the module City, University of London and 82% after) and how their skills and values relate to these options (average 59% before the module and 85% after) after the modules.

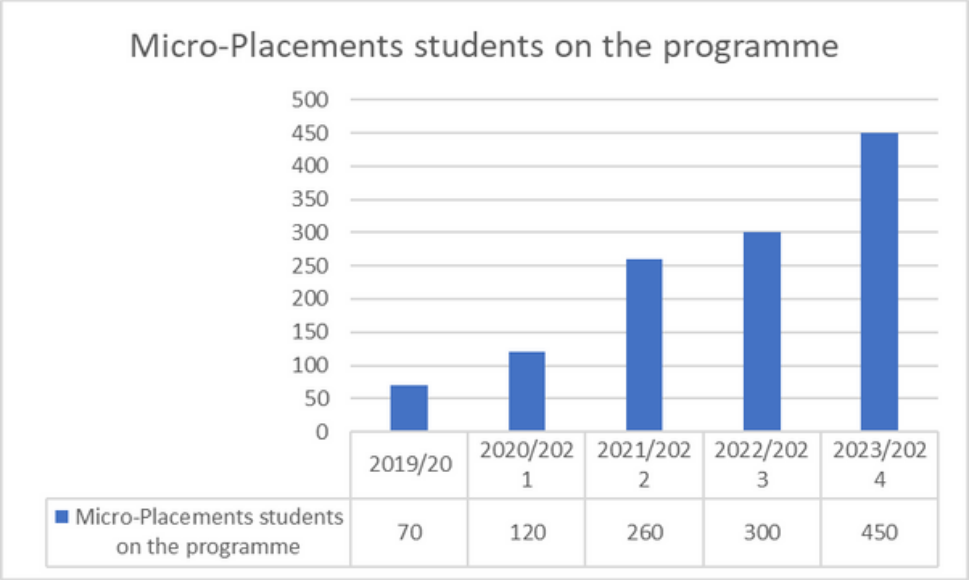
Micro-Placements

The total number of students impacted by Micro-Placements is larger than the number who go on to complete the placement (total of 821 in 2021/22) due to a larger number of students having access to pre-placement activities designed to improve placement readiness. Our evaluation of the MPP programme in 2021/22 was completed by 65% of the 260 placement students and was extremely positive. The survey showed that at least 25 students returned to their employer for further work experience or a graduate job. In addition, 92% strongly agreed or agreed that the MPP had helped them with career exploration, and 94% strongly agreed or agreed that they were more familiar with a real-life work environment and processes after the placement. The comment below was typical:

'I really don't think I'd be where I am today if I hadn't done it. For me, completing the Micro-Placement meant I had a job lined up after university and the experience I gained from this job allowed me to stand out and secure my current role with KPMG'.

At City we measure a student's "career-readiness" via a series of questions embedded each year in the registration process. Students rate their readiness to tackle their career post-graduation, with students at the lowest level of readiness falling into the Explore category, and those with the highest appearing in Succeed. We saw a 144% increase in students selecting Succeed, and a reduction of 31% in Explore, looking at Autumn 2020 (pre-placement) vs Autumn 2021 (post-placement). This demonstrates that a Micro-Placement has an important positive impact in increasing career-readiness. The distinctiveness and impact of the Micro-Placements was also recognised at a national level with one of our members of staff winning the 2022 AGCAS Outstanding Newcomer Award for Excellence for her work on the programme. We have also been finalists for eleven awards for the excellence of Micro-Placements, from the ISE Development Awards in 2018 to the NUE Best Placement Service in 2022.

Micro-Placements became a credit-bearing module in 2020/21 and have grown incrementally in scale over time (discounting the pandemic disruption in the summer 2020). The number of students completing a placement has increased by 93% from 138 to 260 over four years, and is planned to grow by a further 69% to place 450 students in 2023/24. Please see the table below which details students on the Micro-Placements Programme since 2019 with planned figures for 23/24.



To find out more about the impact of the placements on employers and our students, please see Appendix I and our Micro-Placements video and blog where students have shared their experiences of the Programme.

Industry project modules

Since 2021, 400 students have worked with over 30 employers across diverse sectors. Provision of an industry brief is a new method of engagement with City Careers & Employability, and we are excited to bring this offering to new and existing employer partners. Traditionally some larger organisations have found it challenging to offer a Micro-Placement given their own internship scheme commitments. However, this new type of engagement in term time offers a ready alternative to establish relationships, as well as to enrich the existing relationships City already holds with larger and smaller companies. The impact that these industry projects have had on our students across the institution has been significant. At a Teaching and Learning event in May 2022, we brought together an employer from a major law firm who had taken on a team of our students each year for the last eight years, and two of the students who had worked with this employer. The students highlighted the opportunities provided by this activity to build connections between the theoretical concepts learned within their course and the practical skills they would need for their future employment. The employer talked of being impressed by the insights that the students brought and also by the quality and professionalism of the student presentations. The Law School offered 16 commercial projects from Law firms to students. Engineering runs similar credit-bearing projects with Arup, Clancy and Evolve. Within the arts and social science, students were taken on by organisations such as London Higher where they are now being credited as initial researchers on a published report on student life in London.

Sociology Social Action Module

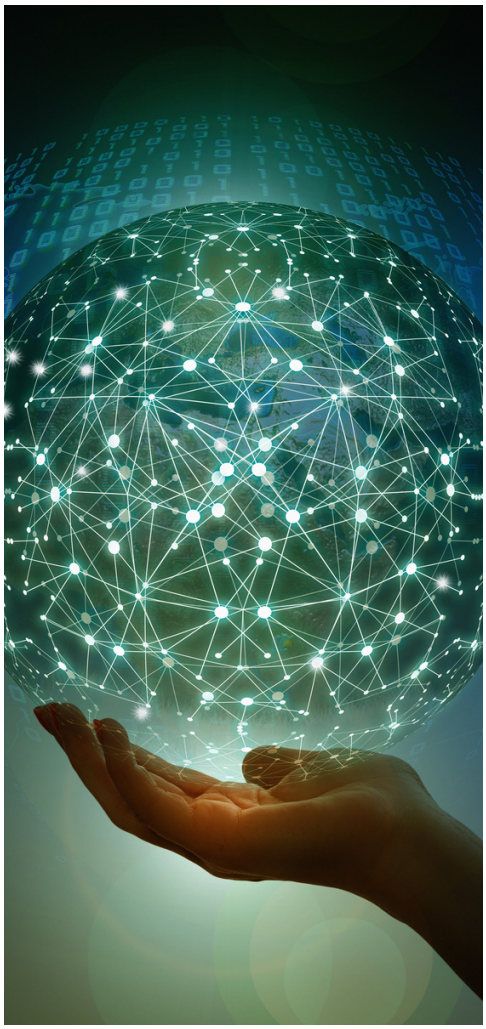
It is too soon to assess the impact of our Sociology Social Action Module on graduate destinations, as our first cohort are only now in their final year. However, the first year of this new core module would appear to have been a huge success with a 95% completion rate by students and positive feedback from both students and organisations. For example, one of our partner organisations, the NSPCC, described their student as 'a great communicator', adding that:

'her group has produced a very impressive professional fundraising initiative at my request. I have worked with other student groups but these students stood out, as a well organised, well executed group. They produced coherent, concise documents updating me regularly so I could follow their progress.'

We were awarded Silver at the UK Social Mobility Awards (SOMOs) 2022 for our 'sector-leading approach to community-engaged learning' through the new Social Action Project. This collaboration evidences our drive to engage with the community whilst also tackling employability across the University, including in non-vocational disciplines with historically weaker graduate outcomes.

Overall CAP outcomes

As a result of the CAP, we have seen a reduction in the attainment gap between White and BAME students, and between UK UG students living in areas with the highest and lowest levels of relative deprivation (as measured by the IMD). The BAME awarding gap decreased from 12.1% in 2018/19 to 4% in 2020/21.In addition, the gap between students from IMD Q1 and IMD Q5 has reduced from 6.7% to 0.6%.



City students' overall progression into professional, graduate-level employment is institutionally strong. Whilst this strong performance is not inevitable, given our student demographic, it has long been core to our mission and a consistent strategic and operational focus. A 77.7% institutional graduate-level employment rate in the last Graduate Outcomes Survey (GOS) evidences City's excellence in supporting students to go on to achieve career success (Graduate Outcomes, 2019/20). Through Graduate Outcomes data and Graduate Voice questions, students stated overwhelmingly that we support them to realise their career ambitions: for example, in the 2019/20 Graduate Outcomes Survey, 80% of graduates reported that they 'agreed' or 'strongly agreed' that their current activity fits with their future plans and 81% reported that they feel their activities are meaningful.

CONCLUSION

City is proud of our record of enabling students to fulfil or exceed their potential and a large part of this success is contingent upon the Career Activation Programme. City works with a diverse student cohort and offers a wide range of academic, pastoral and career initiatives that enable us to ensure the success of all of our students, irrespective of background and prior opportunities. Through working in close partnership with employer, student and internal university stakeholders, we have managed to sustain this level of support and success through the challenging period of the pandemic. Our CAP has been central to our sustained achievement of strong academic achievement and employment outcomes.

REFLECTIONS AND NEXT STEPS

The academic year 2023/24 brings a fuller menu of professional experience modules for students, including industry projects for Occupational Psychology students and Actuarial Sciences. In addition, our focus will now also turn to implementing a similar career support provision for our postgraduate students. We also pursue a more in-depth evaluation of the short and longer term impact of the CAP.

Appendix I - Employer case study

Some of the organisations who have participated in Micro-Placements Programme (MPP) include the House of Commons, Lloyds Banking Group, FDM, Westbourne Partners and Kensington Park School. We conduct evaluations with these employers to assess the value and impact of the placements.

The feedback below is taken from an interview with Erin Neil, the Director of Short Courses at Kensington Park School, who offers a 4-week intensive summer Micro-Placement.

Can you tell us about your experience of working with the MPP?

"I have been involved with the MPP since summer 2018. We have had three brilliant City students from previous years with whom we remain in contact with and have been employed by us since the MPP ended in various capacities. Each summer we run our international summer school and we hire an MPP student to help with this."

"Our experience has always been excellent! We cannot speak highly enough about the benefits of having an MPP student working with us each summer. They have been amazing and incredibly dedicated to the school"

What kind of things did your student help with?

"Our academic summer programme is a big project for us, which requires a lot of work that must be completed in a very time-sensitive manner, with strict deadlines and in a high-pressure atmosphere. Staff and students change every two weeks and there is a great deal of effort needed to ensure a fantastic and safe experience for everyone."

"We had teens aged 14-17 from 26 different countries join us this summer and stay at our boarding residence. Our student started her placement the week before the courses began and worked closely with me and a former MPP student to finalise last-minute details for the project, ensuring we were prepared for our students when they arrived. "

"She helped us with the creation of a student feedback survey and worked to gather testimonials from students to use in our marketing material. It is hard to define everything she did as the list is exhaustive! From researching and booking activities, helping with emergency plans during a heatwave and general problem-solving, managing risks daily. "

"She worked in a front-facing role at reception and acted as a link between me and the students and staff. She completed training in areas such as safeguarding, health and safety and even gained her first aid qualification while sitting in with the medicine students for the day when we needed cover. "

"When the course began, she worked on a variety of things. We also employed her for three weeks after her placement ended, so she could assist me with the closing out of the project and see the summer programme through until the end. In total, she was with us for seven weeks."

"She developed excellent relationships with staff and students, who trusted and respected her immensely. She often went beyond, staying late to help with things, even when she did not need to. She was always calm, professional, dedicated, and responsible. She was able to see the project from pre-arrival to the final day, aiding me with closing project tasks, such as collating feedback and organising finance and health and safety files."

Would you recommend the experience to other employers – why?

Yes. The students are very well vetted and prepared. Each time we have employed a City MPP student, they have been top performing members of staff. The first time I joined the programme, the candidates were so great that we chose two! Having recruited many staff over the years, I am always delighted at the quality of the candidates the MPP programme sends to us. I highly recommend this programme.

Student feedback:

"I enjoyed the Micro-Placements Programme, it gave me insight into different businesses and sectors that I didn't even know existed. I've also learnt a lot about myself in terms of my strengths and weaknesses. The Micro-Placement team were always on hand for support too" - BSc Psychology student

"The Micro-Placement team were incredible at maintaining communication and providing all the necessary information to prepare us for the placement. There has been frequent webinars and talks to support us through the application and preparation process." - LLB Law student

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CRACKING THE EMPLOYABILITY CODE – THE JOURNEY FROM PATCHWORK INITIATIVES TO A FULLY EMBEDDED EMPLOYABILITY CURRICULUM

Conor Moss
Sheffield Hallam University

Esther Kent
Sheffield Hallam University

Co-funded by the Erasmus+ Programme of the European Union

EPD Feedback Loop

CONTRIBUTORS

PROFESSOR CONOR MOSS

Dean of College of Business, Technology and Engineering, Sheffield Hallam University |

Email : c.moss@shu.ac.uk

ESTHER KENT

Director of Employability & Student Future, Sheffield Hallam University |

Email: E.L.Kent@shu.ac.uk

SUMMARY

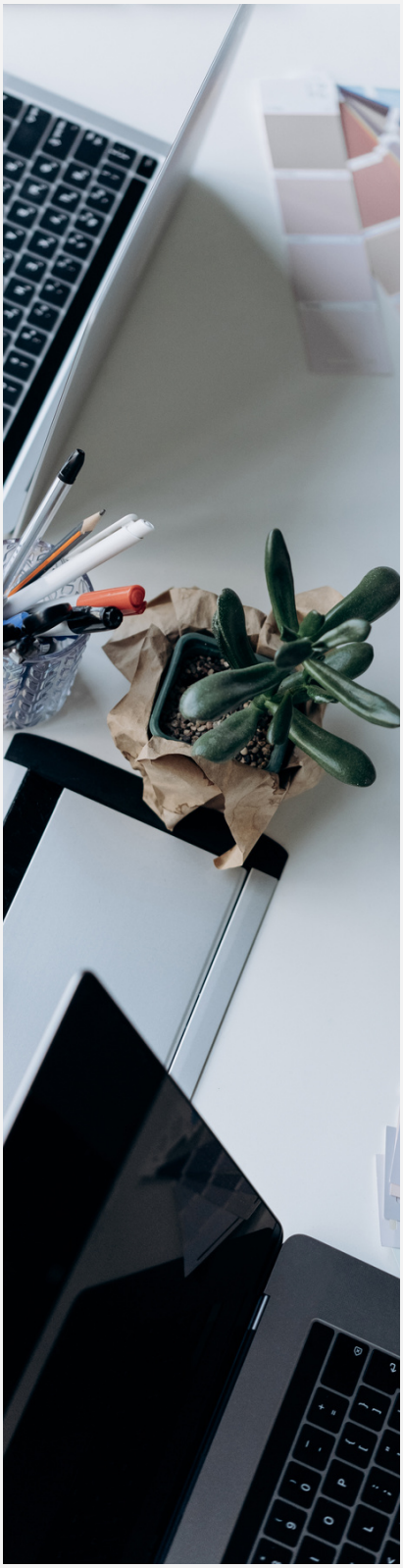
Hallam's employability model is at the heart of its civic university agenda, supporting social mobility, inclusivity and raising aspirations of young people now and for their future. Hallam students, regardless of discipline, receive course specific learning opportunities, applying knowledge through a comprehensive work experience framework. Labour Market Information was central to the design of our employability offer; specifically, the South Yorkshire economy consists of a large proportion of SMEs and public sector organisations (Health and Education). This has had a significant impact on the design of our employability framework and has resulted in better alignment with student's opportunities and the development of skills employers are looking for, thus increasing their 'work readiness', their articulation of key competencies and their graduate success.

Through a multi-dimensional case study approach, we will share how Hallam has made employability central to the curriculum. No longer does it just live as a centralised offering from a Careers Service, it is about applying knowledge in the real world, as part of a diverse and dynamic curriculum experience. We will show how we are generating mutual success, creating social capital, encouraging job opportunities, graduate talent retention and economic localism without compromising the academic rigour of the course.

The case study will provide readers with an 'employability-toolbox' they can adapt. We encourage you to consider the balance and mode of employability at course level, enabling students to articulate their learning, experiences and skills which positively contribute to graduate employment and lifelong success.

Sheffield Hallam University

CONTEXT



Sheffield Hallam has a vision to become the world's leading applied university, shaping students' futures to prepare them for whatever they choose to do, whilst developing mutually beneficial collaborations with employers to ensure that learning sees graduates well placed to become future leaders and employers' benefit from access to talent.

The University has a strong track record in prioritising employability and enterprise and supplying graduates to the region; this is particularly important given South Yorkshire's reliance on Small and Medium Enterprises and the public sector. The excellent Graduate Outcomes for highly skilled employment sits at the heart of Hallam's ambition with 96% of Hallam's students in work or further study.

Many universities employ a range of employability strategies (Farenga & Quinlan, 2016); however, they are often singularly focused on a Careers Service offer with little curriculum integration. This case study will outline how Hallam navigated its strategic path leading to a combined programme approach prioritising curriculum integration. This removed the myth of a 'bolt on' or magic bullet', while enabling an all-encompassing skills-based approach (Jackson 2016) and Career Management model (Williams, Dodd, Steele, & Randall, 2016).

At Hallam we gave ourselves permission to explore something truly institutional, something that would help us to make a step-change and achieve our institutional goal of becoming 'the world's leading applied university'. To create something meaningful, sustainable, and impactful, this step change needed a clear and defined employability framework that both students and staff would appreciate and recognise as 'change for good' regarding their current practice within curriculum parameters. Critically, it needed to offer students and staff a real chance to review, inform and evolve their curriculum. It was important for course teams to create their own space, and identity to develop learning experiences that would prepare students and give them the confidence for further study or highly skilled employment, thus both embedding and revealing employability to students.

METHODOLOGY & IMPLEMENTATION

FROM STRATEGY TO DELIVERY

In this section we will explain the steps taken to translate our grand plan into action and implement our employability strategy. At the end of this case study, we will provide examples of curriculum integrated employability in practice.

Step 1 - Place

The first consideration for the institution was to clearly understand our 'place'. This included the employability challenges faced by our diverse student population. Hallam is situated in South Yorkshire with an economy largely made up of the public sector and SMEs, therefore our provision and development of our students needs to be cognisant of our students and their background and the economy in which many of them will work. Hallam is widely regarded as a widening participation university recruiting more students than any other university from deprived and economically challenges backgrounds. For example, an examination of 2019/20 enrolment for all English HE providers, shows Hallam had 23.5% of students from the POLAR 1 area compared to an English Higher Education average of 12.3%. The picture is similar for POLAR 2 with 24% of Hallam students from these areas compared to an English HE provider average of 15.6% (Office for Students, 2021). Furthermore, the landscape of accountability in UK higher education is increasingly focusing on value for money; one measure, by policy makers, is the number of graduates entering highly skilled employment. At Hallam we believe that employability, delivered through highly applied curriculum, is a core element in supporting highly skilled employment. It is also a major part of the educational remit of universities where our responsibilities encompass the development of our students' capabilities to be prepared for, take advantage of, and adapt to, changing employment conditions.

METHODOLOGY & IMPLEMENTATION

Step 2 – Clear strategic intent with senior leader commitment

The next step was to develop a clear strategic imperative. The University's Transforming Lives' mission and world leading applied institution aspirations created the strategic intent for developing an ambitious institutional employability strategy. This was supplemented by its support of city regeneration, economic localism, a highly skilled employment agenda, educational attainment, and providing a graduate talent pipeline to support civic ambitions. It was also helped by Hallam's heritage of working closely with employers and as a pioneer of sandwich placements.

However, strategic vision alone is insufficient. There needs to be strong leadership engagement if radical change is to be achieved. Institutional leadership, led by the Vice Chancellor, resulted in strong championing of the 'Transforming Lives' mission which acted as the catalyst for the development of a transformed and ambitious employability strategy and associated implementation plan to ensure a step change in performance.

An example of this commitment was demonstrated though the University's investment in new senior academic roles and a new Directorate comprising of academic and professional services leadership – the Directorate of Business Engagement, Skills and Employability (BESE). This Directorate acts as a hub of expertise and innovation providing internal support for academics developing curriculum integrated employability and externally to industry partners locally, nationally, and globally.

Image: Careers Connect Open Day

Step 3 – Scoping out the radical approach.

The definition of employability posed by Gilworth (2017) as "the lifelong capability to make well informed realistic plans for the future and to be ready, willing and able to execute these in a changing world" emphasises that student success relies not only on skills. Hence, for us to be effective required a combined approach, rather than a single focus, intervention, programme, or activity. Instead, it encompassed the full educational spectrum of values from imparting knowledge and understanding to developing skills and attributes. The fundamental philosophy of every student being prepared for highly skilled employment informed the development of an integrated, innovative, and impactful employability strategy which aimed to:

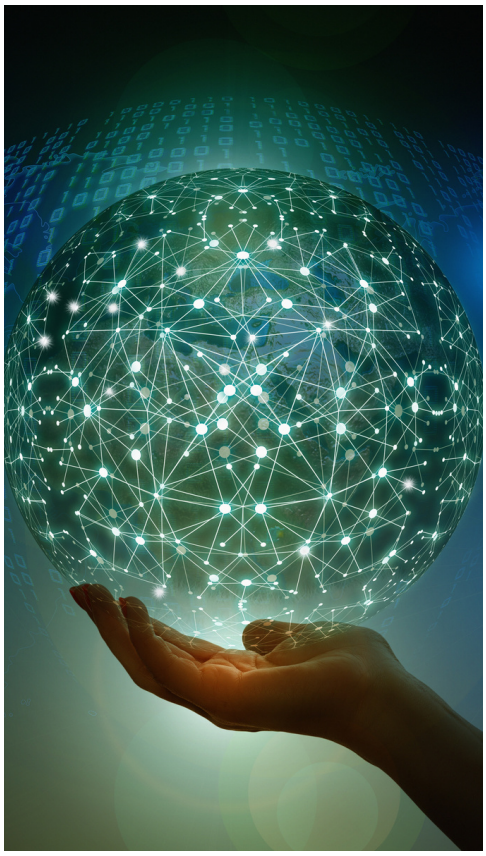
- better prepare Hallam students for the world of work.
- enhance employer engagement, and
- ensure meaningful and scaffolded employability offer through an integrated and applied curriculum.

These three areas formed the foundation for this radical institutional step change to translate Hallam's employability strategy and ambition into the classroom, mobilising action across the University.

Step 4 – Building networks.

Hallam's requirement for applied authentic and genuine work experience with employers reflects the outcomes of Cranmer's (2006) study. That is, the assumption that employability skills can be effectively delivered in the classroom is flawed. Rather, increased employment-based training and experience, along with employer involvement has a positive impact on immediate graduate prospects in the labour market.

This required the University to 'network as an institution' – to raise its civic university public profile such that employers actively sought out opportunities to engage with our students and the development of their employability. To facilitate deep engagement with employers, and support the employability agenda, Employer Advisory Boards (EABs) were established in all departments across the University. These boards act as a key enabler, driving industry-relevant enhancements and opportunities for real world projects in our curriculum.



Developed in collaboration with students, staff and employers, the Departmental Employer Advisory Boards (EAB) are a key enabler to help us both revolutionise our approach to the curriculum and drive improved graduate outcomes; every course is now aligned to at least one annual Employer Advisory Board. A series of co-designed resources and impact measures act to facilitate a results-driven approach to the boards which is progressive, meaningful, and powerful. The Department of Finance, Accountancy and Banking (FAB's) are an exemplar of best practice which the following vignette demonstrates:

Case study: Department of Finance, Accountancy and Banking Employer Advisory Board

Purpose: The purpose of the FABS Employer Advisory Board (EAB) is to develop a collaborative approach to teaching, research, and employability within the areas of Finance, Accounting, Banking, Economics and Supply Chain. The FABS EAB constitution consists of selected Executives in Residence, Academics and Students. To ensure the EAB is effective it has a maximum of 20.

How it operates: The EAB meets twice per year in-person at strategic times, such as supporting Graduation and Prize giving, with ambitions to hold additional sessions at Londonbased universities to support southern centric members. All courses across FABS are supported by EAB members who sponsor a subject specific course, offering benefits such as providing targeted awards and recognition activities for students. Members of the EAB are selected from our portfolio of 40 Executives in Residence, who have a particular alignment to teaching and learning, curriculum design and/or employability. The Executives in Residence are fully engaged with the department which also holds an Executive in Residence meeting once a year, to ensure alignment and the feedforward of actions and opportunities. The diversity of members includes:

- The Bank of England, HSBC, Coca Cola, Costa Coffee, Virgin Money, Deloitte, GXO (Clipper Logistics), Diageo
- Key Locals: Bobs Business, Gripple and Fosters Bakery (Mapplewell)
- International: Abalone Group (Wealth Management Switzerland).

Step 5 – Developing an institutional Highly Skilled Employment Framework through Employer-led work experience.

An integrated and multi-dimensional Highly Skilled Employability (HSE) framework was developed as the platform to drive change. The framework created a map for work experience opportunities for all students at all levels, facilitating student engagement with business and communities.

The HSE framework defines categories of work experiences and is designed to scaffold professional development across each level of study while meeting the needs of students and employers.

Principles for courses which contain work experience:

- Each course will offer a Sandwich placement route and will be designed to enable student success in completion of a Sandwich degree as the default qualification for all students.
- All students will undertake Curriculum-Integrated Work Experience at every level of study, as part of a core module. Work experience is broadly defined and set out in distinct categories (see below) with an expectation that students will encounter a variety of work experience categories throughout their studies.
- Each category of work experience should be locally interpreted to best fit student expectations, discipline, context, and employment/sector needs.
- There can be repetition of a category across levels if the challenge of that work experience enables a variety of experiences and demonstrates progression at each level of study.

The different types of work experience category include:

- Work Integrated Learning - A formal work placement whereby students gain applied work experience which is immersive and meaningful within a specific organisation or industry.
- Enterprise Residency – as a university in a region dominated by small to medium sized enterprises, it was essential that the employability programme made space for entrepreneurship. Students work in groups or individually to complete a negotiated and agreed self-created work experience brief related to enterprise and/or entrepreneurship initiatives. This includes the opportunity to develop freelance pertinent skills.
- Applied Projects - Students work in groups or individually to complete real life briefs set out by, and working directly with, community employer(s). The student has continued and ongoing involvement and engagement with the employer(s) which culminates in students evidencing how their work has achieved the brief and/or improved community advancement.

- Scholarly Research or Innovation - Students undertake real life inquiry, investigation, and discovery through the exploration of a specific research topic, project, or consultancy within a relevant field to make an original contribution to their discipline or related industry requirements.
- Sandwich Work Placement Year - A placement year is recognised to be the 'gold standard' for all our students to achieve. The benefits of sandwich placements are clear: they result in improved attainment outcomes, (Mansfield, 2011; Crawford, and Wang, 2014), better graduate outcomes and earnings levels (Jones, Green, Higson, 2015), as well as less measurable benefits such as improved confidence. Making sandwich placements available to all students on all courses, alongside an Applied Professional Diploma award is seen to be a significant enabler to support student's graduate level employment.
- Semester Abroad - These experiences will expose the student to one or more different economic, social, and cultural contexts. The exchange will require the student to engage with non-UK agencies, currency, businesses, and cultural organisations. The exchange will enable the student to learn more about globalisation issues and contrast their existing knowledge with new learning in the setting of the exchange partner.

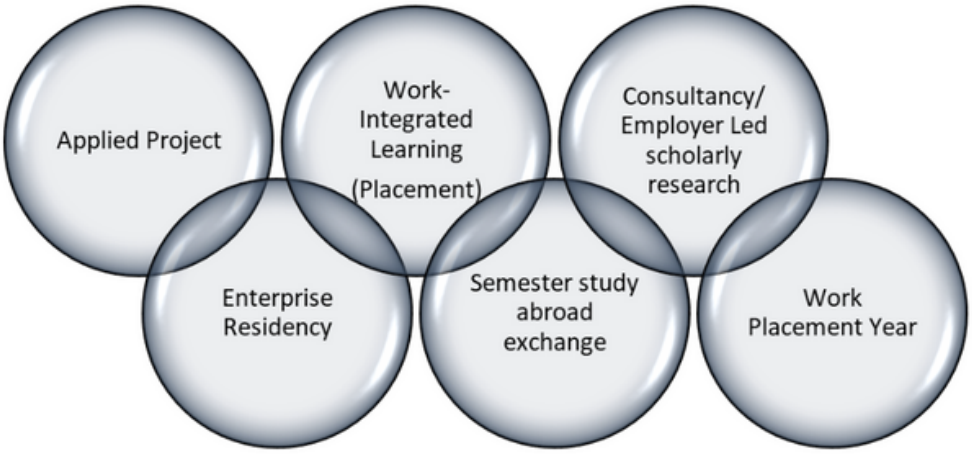


Fig.1: Work experience categories

These categories were also aligned to the institutional teaching and learning strategy and approach to ensure compatibility with the core business of teaching students. For all work experience categories, the following 3 core principles of effective teaching and learning design were followed:

1. Expanding future ambitions and aspirations – Exploring career pathways and planning, reflection on skills, motivation and values and applying them to the professional labour market.
2. Presenting as a professional – Understanding recruitment and enterprising processes and articulating skills, strengths, and experience.
3. Work experience in the curriculum and beyond – Engaging with employers and professional spaces gaining practical experience and reflecting on learning gained.

Step 6 – Tight and loose implementation

The adaption of the HSE framework was non-negotiable, however there was a recognition that there was need for local ownership and adaptation. Consequently, one of the principles for success was to have a range of work experience categories to provide course teams with the flexibility to align work experiences to course curriculum, the needs of students and their most likely employment pathways.

Course teams determined the work experience category, at each level of study, with a clear steer towards engaging students with employers to improve their graduate employment. This gave academic staff the opportunity to apply the framework to their academic discipline creatively and to even take risks.

A partnership approach involving academic, and professional services teams involving almost every student facing and aligned service across the institution, was adopted within academic departments to interpret how they would integrate the HSE framework into their modules in a way which was appropriate for the particular discipline. To ensure confidence, assurance, and compliance with the guiding principles of the Framework each Department established a 'check and challenge' approach in reviewing course design, module descriptors and learning outcomes.

This was followed by an institutional HSE event chaired by the Pro-Vice Chancellor which required all Head of Departments to present on how HSE was being owned and implemented in their departments. Again, this demonstrated strong senior level leadership and engagement with this initiative at a strategic level.

Step 7 – The student voice

As an institution we wanted to take our students with us on the employability journey. As a result, we explained why we wanted to make these changes and the envisaged benefit through existing student voice channels including student representatives, Student Voice Leaders, Student Community Leaders and Student Union teams. This was complimented through bespoke workshops, online surveys and peers to peer workings to gather the broadest and most inclusive feedback. By doing this, we were able to share our story and passion for this change with them. The student voice and student-focused research was embedded into the fabric of the framework at every step of the way. We also turned to graduate interns, paid placement students and Hallam Community Leaders to help shape and inform this change. This was complemented with work undertaken to gain insights from our industry partners and professional experts, and their feedback enabled us to further strengthen its employability offer.

Image: Careers fair

Step 8 - Curriculum Integrated Employability in Action: Vignettes

The success of a strategy/plan can only be achieved through passionate adoption. To demonstrate the range of innovative approaches developed by Hallam's academics in response to our employability approach and framework, we have included a range of short case studies which illustrate creative approaches to enhancing the employability and social capital of students.

To achieve this widespread adoption, Hallam provided course teams with a framework for integrating employability into curriculum, which in turn empowered course teams to bring employability to the fore through their modules. This enabled the development of meaningful, progressive, and subject relevant modules which also aligned classroom learning with our Civic agenda. Typically, these curriculum initiatives were either academic-led or delivered jointly with central teams.

1. **Academic led initiatives**

As a civic based, applied university, Hallam must align its teaching with the current and future local labour market. By bringing employers into the classroom via employer-led projects and consultancy we can deliver on this requirement. Specifically, the HSE framework - with its progressive and developmental principles of delivery - has enabled the creation of opportunities where students are able to develop their confidence and expand their networks (and consequent social capital) in a safe and relevant way. Students engage in progressive and developmental work experiences in a core module at every level of study. This exposes and engages them with numerous employers in a variety of activities. This increases their personal and professional confidence in collaborating and supporting employers while also expanding their networks. Two key examples are outlined below:

1.1 **Applied Projects**

Applied Projects centre on meaningful and mutually beneficial collaboration between course teams and employers. As Advance HE's Collaborative Award for Teaching Excellence (CATE) award winners 2021, these projects are a true partnership between the University and industry, where each partner influences the other through the alignment of curriculum content and assessment with employer and, therefore, labour market needs. The design and delivery of this credit-bearing model supports all students towards engagement with employers, including students who may encounter barriers and thus require additional support for success1.

The students' experience involves a staged process of taught subject specific content and project support. This includes digital employer project briefings, demonstrations, timetabled face to face meetings with the employers, in class practise, formative feedback from practitioners, delivery of results to the employer and consequent summative student assessment related to both the process and outcomes of the project.

Quantitative and qualitative data demonstrate an increase in student self-confidence in the level of impact they can have on the wider world. In many cases low levels of self-confidence can reverse even during the lifecycle of the project; and, therefore, employability is enhanced. For example, in Criminology, prior to the introduction of applied projects only 32% of students rated themselves as 'confident' in relation to the level of impact they can have on the wider world, rising to 83% post-intervention (2021). This firmly delivers on our Civic University Impact Test where we actively measure the impact of our activity.

1.2 **Innovation Consultancy Challenge: Food**

In this cross-university initiative, students undertake a challenge with a range of high-profile FTSE/FMCG companies, including Asda Stores, Innocent, Taylors of Harrogate, Warburtons, Cranswick Foods, as well as SMEs such as NibNibs of Barnsley. To support multidisciplinary learning, Food students work collaboratively with those studying journalism and finance to provide a genuinely multi-disciplinary project approach requiring cross university engagement alongside employers. The consultancy challenges are varied and range from sugar reduction in Asda Brand biscuits to the impact of different milks on tea and coffee, and development of ‘next gen’ branding for Innocent.

Students present their findings to industry leaders, and this client work, alongside module tasks (including personal psychometrics and reflections on the experience), is captured within an individual portfolio for assessment. To support multidisciplinary learning, Food students work collaboratively with those studying journalism and finance to provide a genuinely multi-disciplinary project approach. As the topics covered are high on government and industry agendas, students are providing an important civic contribution and are often recommending changes that are implemented into a client’s business. This provides students with a point of differentiation when entering the graduate marketplace. The module is a ‘game-changer’ whereby students develop graduate skills which are high on employer’s wish list and, consequently, directly improve their employability.

2. Academic / Central University Partnerships – Institutional Collaboration

It is important to acknowledge that employability does not existing in a classroom-based vacuum, and that for it to be successful there needs to be an organisational architecture in place to facilitate success. The following case demonstrates how academics have worked together with university support teams to achieve positive employability outcomes for students.

1. **Entrepreneurship - Enterprise Residency**

The Enterprise Residency programme is available for students at all levels of the Undergraduate programme. It is part of the HSE framework offer and is taken as an alternative work experience option. This module is delivered in partnership with the Hallam's Enterprise Team who provide students with opportunities to create, innovate and develop self-initiated commercial or social business ventures or projects. They can do this individually or in groups. Its uniqueness is that it actively supports student entrepreneurship and market experimentation and, in so doing, helps students to developing resourceful, initiative and risk taking; key entrepreneurial attributes.

Its introduction filled a gap in the development of a students' enterprise and entrepreneurial skills development journey i.e., Applied Projects, Enterprise Residency, Enterprise Sandwich Placement and Graduate Start-ups. Previously many of the Enterprise initiatives were co-curricular or aimed at supporting specific business start-ups. This restricted access to those already engaged. The Enterprise Residency exposed enterprise and entrepreneurship to students in courses not traditionally associated with this such as nursing and midwifery, and humanities. Each of the curriculum initiatives above can be seen as a structured pathway which provides students with alternative perspectives on their career options post-graduation.

Each pathway allows students to explore enterprise in a way that meets their personal needs and areas of interest. They can research the viability of a new idea or expand an existing business venture - all under the close supervision of experts, mentors, and peers. To date, students have completed their residencies across 17 mostly non-traditional subject areas thus exposing student from Humanities, Criminology, and Fashion to entrepreneurial opportunities, limited only by their application of course knowledge and their entrepreneurial flair.

ANALYSIS AND EVALUATION

The work done as part of the HSE project has given course teams the power to adapt their core curricula to include work experience in a variety of ways and across every level of study. This was achieved through collaboration with employers, students, and other relevant stakeholders including local business groups and politicians, to best suit student and employer needs through immersive, authentic, and applied methods of learning.

Delivery of the HSE has fundamentally changed the graduate culture of the University by delivering an overwhelmingly positive impact on employability, providing increased access for students to employers, and diversifying the curriculum.

As a result, Sheffield Hallam was the top UK modern university for numbers of students (1,684) with 71% entering highly skilled employment or further study, and 96% in work or further study within 15 months of graduating.

In 2022, the University was also four percentage points ahead of the sector average – and four percentage points ahead of our competitor set2 when looking at the number of graduates who go into highly skilled employment. Our success over the past year has also been evidenced by the development of a number of successful sector-leading employability and entrepreneurial initiatives, and some significant milestones in terms of participation and engagement, including:

- Hallam i-Lab – a state-of-the-art co-working space used by over 150-businesses. The facility acts as an incubator for student and graduate-led projects with 2,400 student enterprise interactions in 2022, including 91 workshops, 189 one-to-one appointments, 42 new trading businesses, £72,500 of start-up funding awarded.

- 495 student across 15 courses completed in-module Enterprise Residencies (offering an alternative to employer-facing work experience).

- Doubling the number of Enterprise 'Work for Yourself' Sandwich Placements by making funding grants available to student entrepreneurs to create their own start-up businesses.

- Developing the Hallam Freelancers platform, an agency for nearly 100 freelance student entrepreneurs, helping them to find opportunities with employers. As well as being a digital database of student freelancers, this initiative included in-person networking events for students and business.
- Welcoming 227 employers across three careers fairs in 2022, attended by 3,656 students and graduates.
- Hallam Made – a dedicated retail space available for student entrepreneurs to use as a pop-up shop to showcase their products and businesses – 49 student pop-up shop stalls and 17 online vendors used the service in 2022.
- Successfully rolling out Handshake as the university's dedicated job advertising platform. Since launching in the last academic year, over 16,600 jobs have been advertised to our students, of which 72% were part-time or full-time jobs, 13% were placements and 12% were internships. In the past year, 19,666 students and recent graduates have activated an account.
- Class of 2022 Week – providing virtual interviews, internship opportunities, start-up support, and sector-specific seminars to help 2022 graduates navigate a highly volatile jobs market.
- Establishing Employer Advisory Boards to work with industry experts across all 17 academic departments to future-proof the curriculum, secure work experience opportunities and enrich learning.
- Our Welcome Survey 2022 showed 96% satisfaction with our careers and employability services.
- Since 2019 16,130 students have benefitted from personalised careers and employability support and satisfaction with our careers and employability services high averaging 81% over the past four years (NSS Optional Question Bank B3).
- Recruiting the University's 2,100th degree apprentice – making us one of the leading providers in the country. We currently have student apprentices who work across over 570 employer partners.

Sheffield Hallam is a university of our place, rooted in our regional economy. In the past 12 months, our entrepreneurial initiatives have made a substantial contribution to the local economy and the region, including:

- Delivering business support projects including start-up support worth £3.2 million (Scale-up 360 and University Enterprise Zone Wellbeing Accelerator), and growth acceleration worth £3.1 million (High Skills, High Growth), as well as training provision (SCR Scale-up, Skills Bank), consultancy (Sheffield Innovation Programme, Digital Innovation for Growth) and talent management (SCR RISE).
- In 2022/23, 892 students undertook a year-long placement with an organisation based in the UK, contributing up to £11.7 million to the UK economy and growing the graduate talent pipeline for community-based businesses.
- Bringing new skills and industry knowledge to the local workforce by recruiting degree apprentices based in the regional economy. A quarter of our apprentices are from the Sheffield City Region, with 43% from Yorkshire and Humber as a whole.

REFLECTIONS & CONCLUSIONS

Our narrative began with a mission – to Transform Lives and enable student success, preparing our students to do whatever they choose to do. To achieve this we have had to transform our inconsistent employability offer and somewhat extra-curricular Careers Service, to student curriculum permeated by employability and where the workplace enters the classroom for all students.

We will continue to learn from curriculum success and setbacks, listening to students, employers, and staff to build, adapt and tailor our curriculum and co-curriculum careers offer, to support all students on their personalised future proofing journey.

As a long-established civic university, Hallam are engaging more with local SME's; indeed, 98% percent of businesses in Sheffield are SMEs. The principles around flexibility, agility, efficiency, student, and business focussed and a core civic presence aligns perfectly to this ambition and demonstrates the institution's commitment to its longevity. We need to utilise and learn from our key employers and business partners through Employer Advisory Boards to facilitate and drive change in a way that prepares students for an unknown future. Importantly we need to ensure these six components complement rather than compete and we are ready to capitalise on the huge influx of opportunities and successes this will undoubtedly bring.

Of course, this isn't job done. Much work is still to come, as we seek to 'crack the employability code', but we believe we are well positioned for sustained and sustainable success and have established a range of key critical success factors3 to support our journey. We are confident and determined that Hallam students will benefit hugely from our colleagues' immense efforts to deliver the employability strategy in partnership with employers and the broader community.

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PILLARS OF EMPLOYABILITY: IMPLEMENTING AN EMPLOYABILITY FRAMEWORK AT UCL

Amy Lourenco **Karen Barnard**

UNIVERSITY COLLEGE LONDON

Co-funded by the Erasmus+ Programme of the European Union

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CONTRIBUTORS

AMY LOURENCO

Deputy Head, UCL Careers

Email : Amy.Lourenco@ucl.ac.uk

KAREN BARNARD

Director of UCL Careers

Email: K.Barnard@ucl.ac.uk

SUMMARY

A UCL bespoke employability framework has been produced known as "UCL Pillars of Employability". This has been created after conducting a full analysis of the UCL context for employability, and existing sector-wide employability frameworks and literature. To accompany the employability framework a curriculum map and audit tool has been produced to aid programme design and review through an employability lens. The UCL Pillars of Employability also helps students frame their employability learning and track progress. This case study explores how the framework came about and has been utilised at UCL for programme design, review, and student support.

CONTEXT

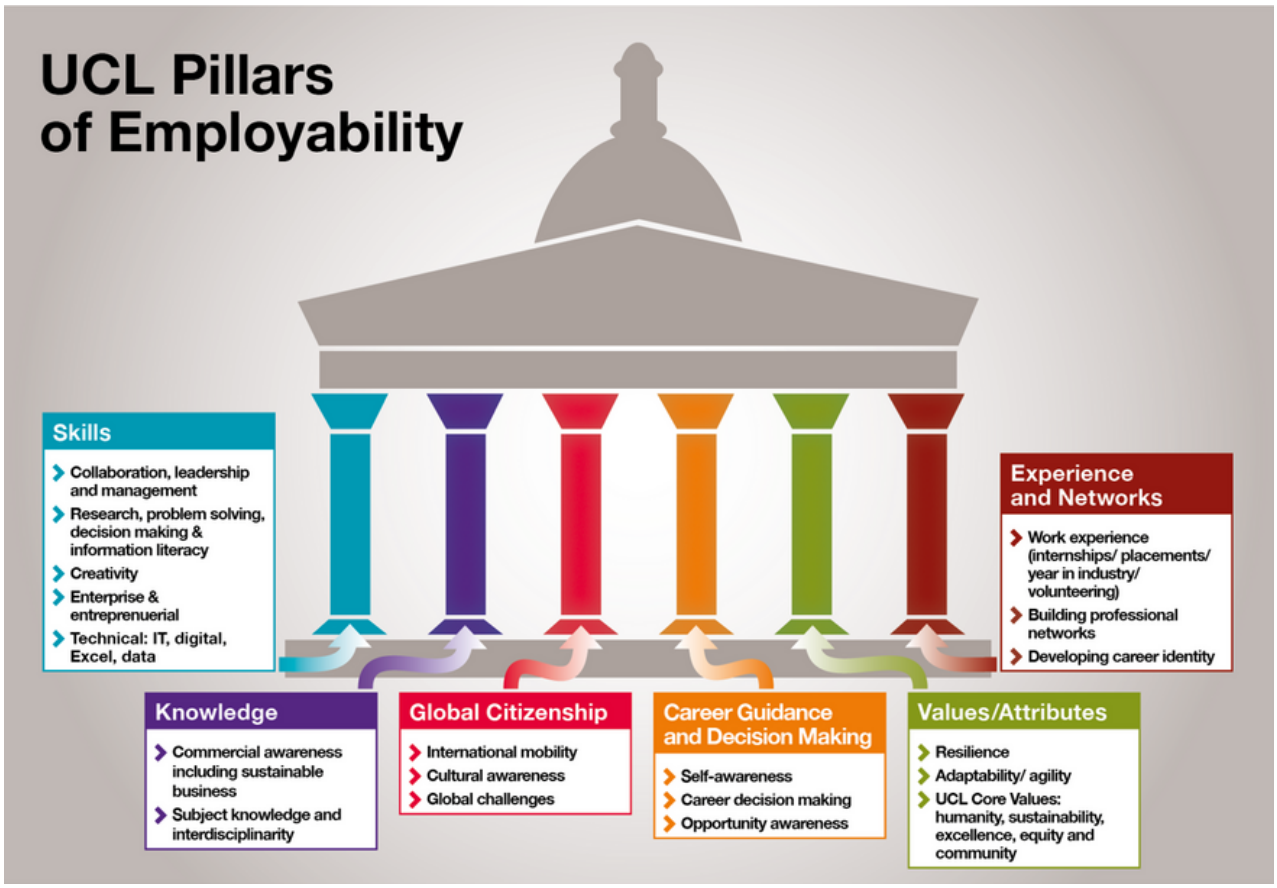
The development of the UCL Pillars of Employability is the result of an extensive literature review conducted in 2020 covering the future skill requirements of global recruiters, the key attributes required for career success, and a wide range of best practice examples from across the sector. Many studies (York and Knight, 2006; Artess et al, 2016) have emphasised the complexity of employability as a concept with lots of different definitions. The UCL Pillars framework draws on an institutional and personalised definition of employability. This is in keeping with the Advance HE's (2013) recommendation that the first step in embedding employability in the curriculum is to have an institutional definition which includes all stakeholders, is explicit at an institutional and programme level, and is shared with students.

A detailed research report was produced by Amy Lourenco, UCL Careers to accompany the framework. This provided an analysis of the UCL context for employability, a survey of the wide range of employability frameworks utilised across the sector, and a review of the broader employability skills literature. Having this robust research base enabled UCL Careers to gain the institutional backing and academic credibility it needed to implement the framework. Our aim was to ensure that the resulting UCL bespoke employability framework would be adopted by module leaders, programme teams, UCL departments and faculties.

It was designed to give UCL a common language with which to discuss employability and enable the analysis of our curriculum through an employability lens. It also enables the surfacing and articulation of the employability benefits of our programmes to students. This provides UCL Careers with a tool to engage in conversations with programme leads about how employability provision for our students can be improved and embedded. Embedding employability into our programme design ensures that all students have equality of opportunity, including those from widening participation backgrounds who may not be able to engage with the existing extra-curricular employability opportunities (The Bridge Group, 2017).

There are 6 pillars in the UCL framework; namely, Skills, Knowledge, Global Citizenship, Career Guidance and Decision-Making Values/Attributes, Experience and Networks (see Figure 1).

Figure 1: UCL Pillars of Employability (Staff version)



These are the areas of learning and personal development that our research suggested UCL students and graduates needed to prepare them for lifelong learning. All the pillars are interconnected and should be underpinned by the student's ability to reflect on and articulate the learning in each area. The bullet points underneath each pillar provide a starting point for discussion with programme teams. They are not an exhaustive list, and each programme or department will have a different take on what is important for their students regarding that pillar.

A student version of the framework was also created in collaboration with a group of students (see Figure 2). This is used in student careers workshops and appointments.

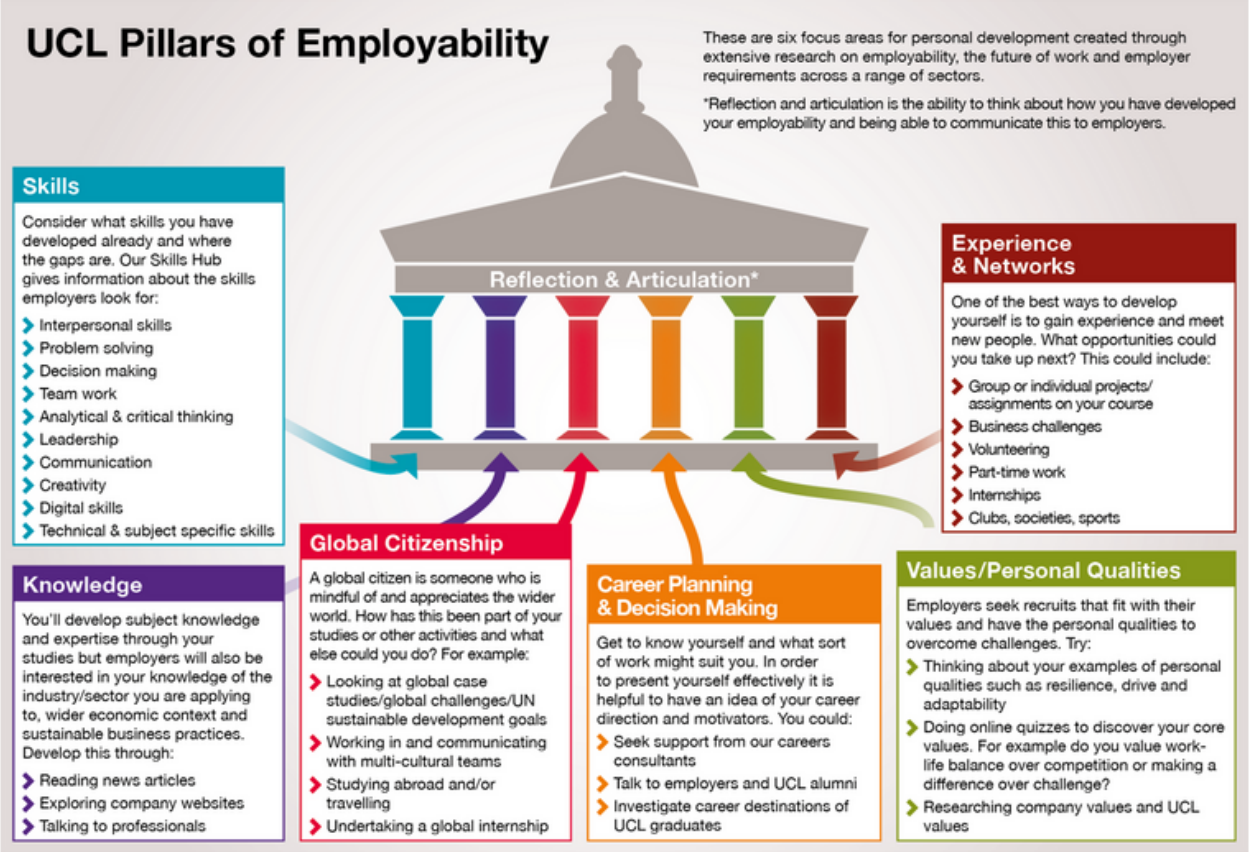


Figure 2: UCL Pillars of Employability (Student version)

METHODOLOGY AND IMPLEMENTATION

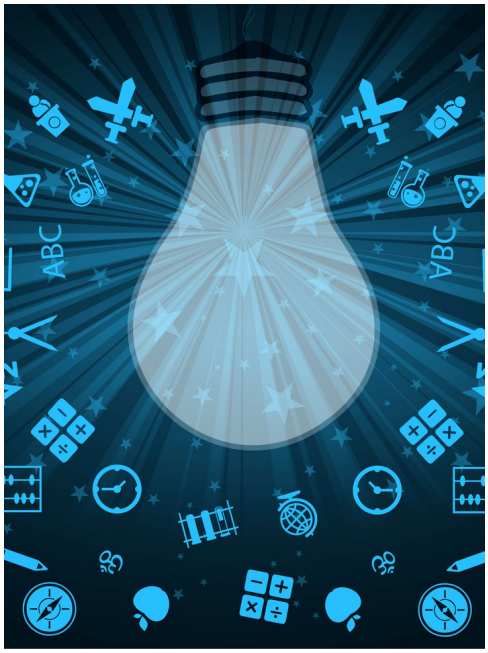
Following the literature review and design of the framework in 2020, the framework was endorsed by the UCL Education Committee in 2021. Since then, the framework has been used in new programme design, existing programme review and student support.

New Programme Design

In 2022, UCL opened a new campus at Stratford in East London. By 2025, there are expected to be 4000 students studying across two new buildings. In 2021, prior to the opening of the first UCL 'East building' the UCL East Academic Planning team invested in two days a week employability support for new programmes. This support was delivered via a dedicated Senior Careers Consultant. The Senior Careers Consultant met with all new programme teams and used the UCL Pillars of Employability framework to ensure that employability was embedded into their programme design process.

The framework was introduced at several different stages of the programme development journey. For example, during the early stages of development it was used to generate ideas for authentic assessments and employability-related learning outcomes for individual modules, or even for entire programmes. The framework also was used to generate ideas for different learning activities, experiences and topics that would enhance students' employability.

Towards the end of the programme development process, the framework was then used to assess and provide feedback to programme teams prior to final submission to the University programme approval committee. The programme team were provided with a comprehensive 'UCL East' endorsement feedback document, which included feedback on various pedagogical elements of programme design, including employability. Each "pillar" of employability was assessed in detail to identify what employability content was present and where possible gaps might lie. These gaps could then be addressed prior to the final approval process or delivery of the programme. This feedback on the employability content of each programme, also enhanced marketing materials by providing details of the potential employability impact and career destinations of these new, as yet untested, programmes.



Employer feedback was also incorporated into the new programme design process, with programmes drawing upon existing industry boards and connections to gain feedback on the work relevance of modules and programmes, as well as their potential impact on students' career success in relevant industries. In some instances, employer workshops were run by the programme team with employability questions overseen by the Senior Careers Consultant. With one new MSc Public History programme, for example, this involved a lively debate with staff working in national heritage institutions, museums, and media outlets. The focus group discussed the sorts of work and activities a new graduate might get involved in, the current challenges and future trends in the sector, and the skills that new graduates might require. All of these employability-related discussions then informed the final programme proposal.

The Pillars of Employability have also now been incorporated into our institution-wide programme design and 'ABC Learning Design' workshops led by UCL's Programme Development unit in the Arena Centre (UCL's centre for research-based education).

Existing Programme Review

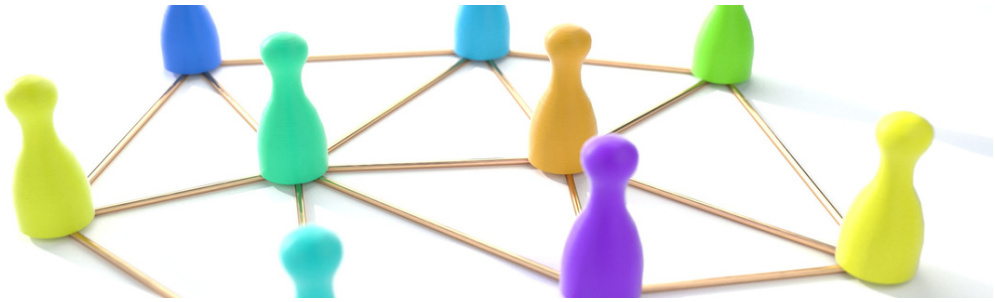
Starting in summer 2021, Careers Consultants at UCL have also been using the framework to review the existing employability provision in their allocated departments. Approximately 16 programmes have been reviewed so far. Using the pillars as a starting point, they have each reviewed one of the main undergraduate programmes in their departments to ascertain where employability content is already present and where some of the gaps might lie. The review process included interviews with staff and alumni as well as desk-based research of departmental reports, online learning materials and module specifications.

This process of review has enabled Careers Consultants and our work-related-learning staff to develop careers education relevant to a subject areas' particular employability gaps. It also enables them to make recommendations for future changes to the programme leads.

Specific examples of recommendations that have already led to changes, include the switching of computer programming languages advised by feedback from alumni questionnaires, introducing alumni-led case studies on a range of relevant industry areas, and a new alumni-led mentoring programme and workshop.

Student Support

The development of a student version of the framework also enables our careers consultants to use it as a reflective tool when working with students. For example, in a workshop or appointment our careers consultants can ask students to fill in a blank copy of the framework reflecting on their own development. Students are then provided with a structure to help them reflect on where they have developed employability skills through their degree, where they might need to develop further, and actions they may need to take next, as a result. Students can even use the framework to repeat the process to support their next steps after graduation.



ANALYSIS AND EVALUATION

New Programme Design

All 30 new UCL East programmes were reviewed prior to programme and module approval committee (PMAP) using this new audit process. This was an effective way to get programme designers to think about employability from the outset, rather than as an add-on at the end. It also proved an effective way for academic planning and careers teams to come together to work on programme design. This collaborative design process was recognised in our nomination for a UCL Education Award in 2022.

We have now recruited a UCL East Careers team leader to provide ongoing support to these programmes and to help them implement their plans for future development. In some instances, this increased focus on employability has even resulted in departments recruiting new staff to resource these areas. For example, in our new School of Creative and Cultural Industries programme teams have developed ambitious plans for work-related learning in the curriculum, including placements and industry related projects. To resource this activity, they have appointed a Work-Related Learning Manager and have the budget to recruit a further three Work Related Learning Officers in the future. Similarly, our Global Business School for Health which includes a focus on professional development, careers coaching and industry mentors, have also recruited a new Careers Education Manager.

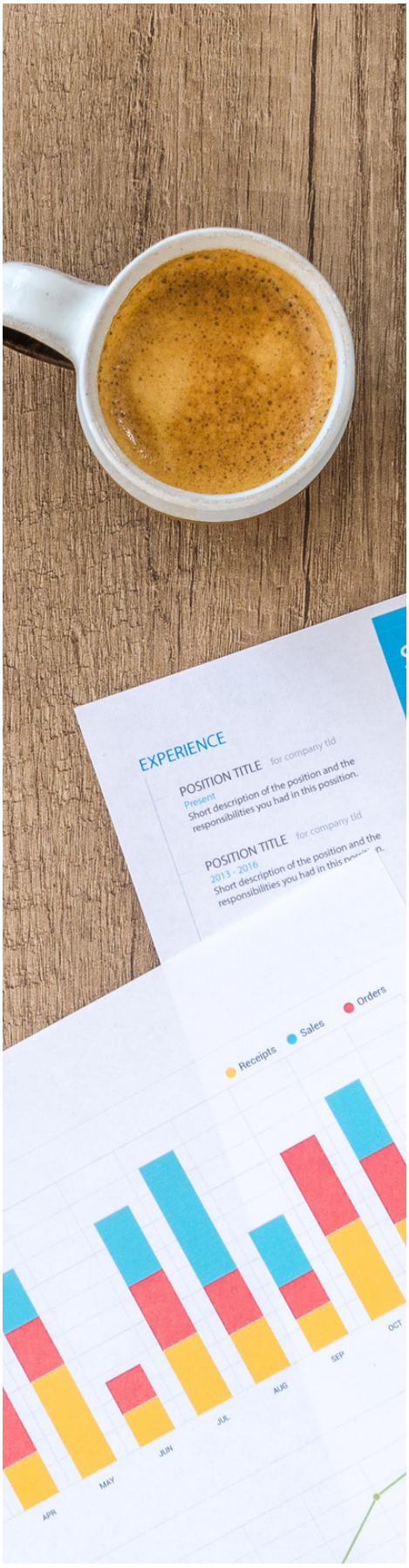
Existing Programme Review

In November 2022, UCL Careers Consultants came together to evaluate and share progress on the process of reviewing existing programmes using the UCL Pillars of Employability framework. Some of the key findings on the strengths of this process included:

- Staff reported that it was very helpful to become so well acquainted with a programme in one of their allocated departments. Despite some staff having worked with a department for many years they were still able to uncover skills, personal development modules, and other employability elements of their programmes they had never encountered before. This increased awareness of the learning students were encountering significantly helped their interactions with both students and academics in the department. It also revealed opportunities to enhance the careers consultant offer or embed careers education into the newly discovered modules. This process of embedding into core learning helped with the perennial problem of student engagement in optional and add-on workshops. Reviewing their own careers education programmes and work-related learning activities as a result of these employability audits, also provided a catalyst for change and introduced new initiatives, such as our alumni careers events.
- One perennial issue reported by our Careers Consultants was the additional support required by students to connect their studies to the world of work and to recognise the skills they had developed. This support is addressed through the 'reflection and articulation' aspect of the framework. At the end of the review process, our Careers Consultants realised it would be good to capture their own reflections on the employability content of the programmes they had reviewed with a view to feedback this information to students. It has been agreed that this could be achieved through the development of a student workshop which communicates the findings of the analysis the consultants have completed.
- Staff also reported that it would be useful to collaborate with students themselves and bring them into the programme review process in the future.

Some of the key findings on the challenges of this process included:

- As Careers staff we don't "own" the curriculum and can only make recommendations, which may not always be implemented. This is a particular challenge if programmes are very traditional in teaching, learning and assessment methods and reliant on extra-curricular offerings for their students' skills development. In this instance, the key to success is to have good departmental relationships and staff who are very engaged with careers and employability.
- Some Careers staff got bogged down too early in the desk-based aspects of reviewing and analysing modules. In retrospect, they felt it was good to get an overview at the start, but that it was better to get an understanding of current conversations regarding careers and employability with programme staff at an earlier stage, so that they had the right questions to ask later when returning to the analysis and writing up of the reports.
- The alumni interviews which we used as part of the process were felt to be useful but it was often difficult to engage alumni in the first place, occasionally leading to findings based on the views of only one or two former students.
- It was important to emphasise with programmes that the framework is flexible and the bullet points under each heading are just starting points and not meant to be a 'one size fits all' approach. For example, one department reported that they felt some of the categories were not relevant to them as a literary subject area. These included areas such as commercial awareness, technical skills, and enterprise.



REFLECTION/CONCLUSIONS & NEXT STEPS

Progress in implementing the UCL Pillars of Employability across an institution as large as UCL has had its challenges. The large number of programmes at UCL (currently over 1000) with many optional modules means that Careers Consultants have had to focus their initial analysis on their allocated department's main or largest undergraduate programmes. UCL is about to embark on a programme architecture project as part of the UCL Strategic Plan 2022-27. This new approach will hopefully streamline the number of programmes we need to work with and make this work more manageable.

In 2022/23, our Careers Consultants will also trial partnering with students on the programme analysis process. We will be supported in this process by the UCL's Arena Centre (UCL's centre for research-based education) and their Student Quality Reviewers team. We hope that this new student input will enrich our analysis whilst also helping with the identification of other current students and alumni for interview.

Due to difficulties in gaining traction with a few particular departments, our staff have recommended that future analysis be baked into existing institutional processes. This is currently being considered and our new UCL Strategic Plan 2022-27 includes projects that could support this. One of these projects is the creation of Faculty Education Teams which will involve all staff members that support education for UCL's faculties. These teams will be responsible for developing and embedding the new UCL education framework, programme architecture and other priority actions related to education that are identified by the faculty. These might include, student feedback, continuation and completion rates, graduate outcomes and the BAME awarding gap.

In a period of intense change over the pandemic period it has sometimes been difficult to get the timing of these conversations correct to ensure optimal departmental engagement. We hope that in the post-pandemic period, more time for these programme development and review conversations will be available.

One major benefit of the Pillars of Employability Framework has been the creation of a shared language around employability, in addition to its use as a tool in programme development and review. Rather than endless debate on the meaning and definition of employability, we can instead focus on improving outcomes for students. Implementation of the framework has been very timely with a new UCL Education strategy just published and a closer working relationship between UCL Careers and UCL Arena Centre for Research-Based Education giving a renewed institutional focus on employability.

HYPERLINKS & SUPPORTING DOCUMENTS

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UCL Careers – Staff Support for Embedding Employability at UCL
UCL Careers – Student Support for Developing Employability Skills at UCL
UCL East
UCL Arena Centre – Programme Development Unit
UCL Strategic Plan 2022-27

Co-funded by the Erasmus+ Programme of the European Union

EPD Feedback Loop

RGU+- AN INSTITUTIONAL APPROACH TO ENSURE CONSISTENCY IN EMPLOYABILITY SUPPORT ACROSS ROBERT GORDON UNIVERSITY

Lynn Kilbride
Vice Principal for Academic Development and Student Experience

Laura Chalmers
Head of the Centre for Employability and Community Engagement

ROBERT GORDON UNIVERSITY ABERDEEN

Co-funded by the Erasmus+ Programme of the European Union

EPD Feedback Loop

CONTRIBUTORS

PROFFESSOR
LYNN KILBRIDE

Vice Principal for Academic Development and Student Experience, Robert Gordon University, Garthdee House
l.kilbride@rgu.ac.uk

LAURA CHALMERS

Head of the Centre for Employability and Community Engagement
Robert Gordon University
l.r.j.chalmers@rgu.ac.uk

SUMMARY

Robert Gordon University (RGU) has been sector leading in terms of employability for a number of years. It is a growing and vibrant institution with 16,000 students, 1500 staff, 11 academic schools and an exceptional record in the employability of our students.

Building on the success of existing employability initiatives, we are now launching RGU+ - a framework that will ensure every RGU student has a credit bearing additionality to their programme of study and that the cross cutting themes of sustainable development, entrepreneurship and innovation are embedded throughout all of our courses. Our aim is to optimise student employability skills and develop them as globals citizens.

CONTEXT

In 2022, HESA ranked RGU as the top university in Scotland and third in the UK for the employability of its graduates. The reasons for this success are multifactorial. The University has for many years capitalised on its location (situated as it is in the Northeast of Scotland), its partnerships with industry, its innovative, co-created professionally focussed curricula, and its work-based learning framework, to ensure that our students are prepared for employment on graduation.

ROLE OF LOCATION AND INDUSTRY

Our location in the Northeast is unique and the universities in this region benefit from close industry partnerships that originated when the Oil and Gas sector was strong. Large international companies needed a high calibre workforce and attracted employees from all over the world. This workforce needed tailored education and through our close partnerships with industry partners we have co-created courses that benefitted business and the University. The presence of the Oil & Gas/Energy sector in Aberdeen also increased demand for workforce in other sectors – health, law, architecture - and companies sought help from their local universities to help them achieve this. Aberdeen and the Northeast of Scotland is now in the process of repositioning itself as the Energy Capital of Europe with an ambition to capitalise on the wider sector, including renewables, energy transition and decommissioning.

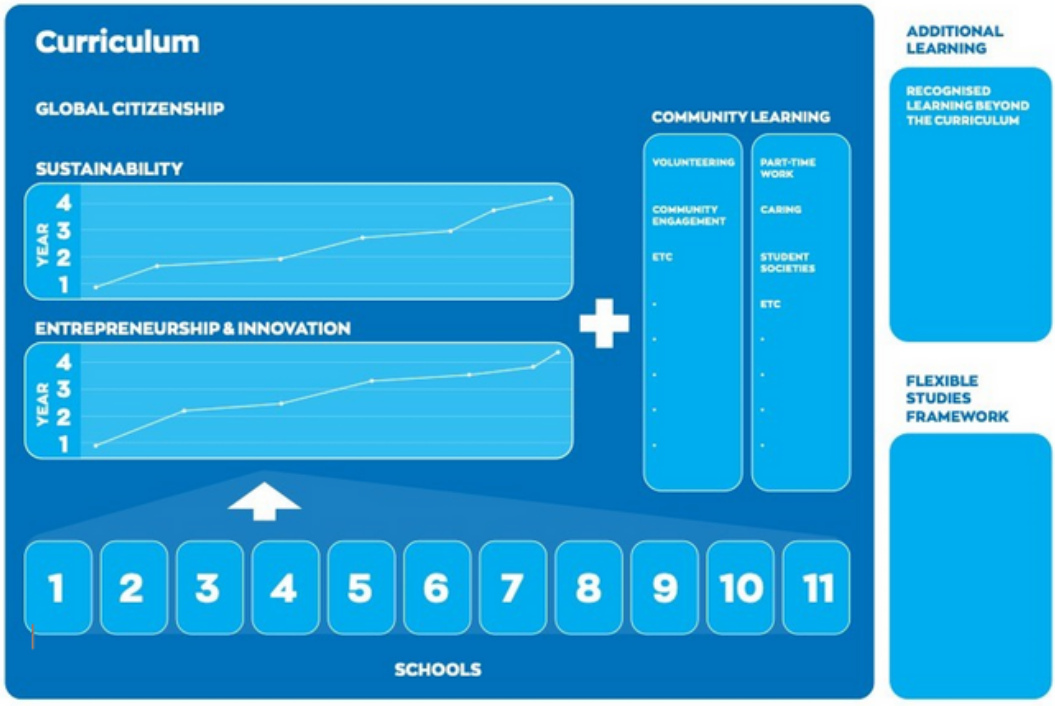
At RGU we have co-developed our curricula with industry partners for many years - we use their expertise to teach students whilst also offering a large number of industry placement opportunities for our students. To facilitate this we created an appropriate infrastructure with a dedicated Business and Enterprise Department (BAED) and Centre for Employability and Community Engagement (CECE). These units coordinate and quality assure this work-related and work-based learning activity. The RGU+ initative now aims to build on these strong foundations through curriculum enhancements and additional credit-bearing work-related learning activities and opportunities for learning through the lens of sustainability and innovation (see Figure 1).

Creative Trail Team Indigo

RGU+

Introducing RGU+

Our world is changing. We need to ensure RGU positions itself to explicitly address global imperatives and meet societal shifts and expectations, and we aspire to be amongst the best at this. Ultimately this relates to the future competitiveness of our curricula, our graduates, and our University. RGU+ is how we are going to achieve this.



What is RGU+?

RGU+ is a model to enable our students to capitalise on their full experience, in the classroom and beyond. Its purpose is to celebrate and build on the outstanding teaching and learning of the University, by enhancing the ability of students to clearly articulate their global citizenship, employability skills, innovatory spirit, and personal values for the future, and to help us explicitly demonstrate alignment with the UN Sustainable Development Goals.

This includes:

- Recognising existing activities such as volunteering, community engagement, and studying abroad, while ensuring that every student at RGU has a credit bearing opportunity to benefit from this type of development.
- Embedding the cross-cutting themes of sustainable development, and entrepreneurship & innovation throughout all courses delivered at RGU.

Why does this matter?

Our students care about their future world, and future students want to be part of a progressive institution that visibly aligns with their aspirations to make a difference. Employers see graduates as agents of change and our job is to shape our students to be active citizens equipped to take on future challenges.

What's next?

We want you to be part of this process and will be engaging with Schools and Departments to successfully deliver RGU+. More information on this will be forthcoming in due course.

This will be an inclusive process that will engage a wide range of staff and students across the university, working in partnership to develop enhancements that are meaningful at course and subject level.

We already have outstanding learning and teaching practices at the heart of our community, and RGU+ will see us coming together to ensure that, through our provision, our students make a significant contribution to a changing world.

RGU+	Laura Chalmers
Flexible Studies Framework	Jo-Anne Tait
Entrepreneurship and Innovation	Chris Moule
Sustainability	David McClean

Figure 1: RGU + Overview

The RGU+ framework is informed by and reflexive to national and international job market data and local labour market insights. This intelligence is gathered through our unique (in Scotland) Leaver Survey and is a key deliverable of our newly formed Employer Liaison Team. Their purpose is to gather and analyse this destination data but also local labour market information gathered from a range of sources, including local authority skills surveys, employer forums, professional bodies and our own employer liaison boards represented across the University.

RGU+ is the collective term that we use to describe all of the additionality that students at RGU will experience whilst they study with us. It includes a whole array of additional activity that our students already benefit from – for example, volunteering and study overseas – capitalises on the cross cutting themes of sustainability, entrepreunership and innovation, which are now embedded across the curriculum. But it also introduces an additional offering to ensure that every student has a credit-bearing opportunity to participate in volunteering, community engagement experiences or placements, student mobility, and public service opportunities – from charity trusteesships to childrens panels. Our aim is to optimise students' employability skills whilst developing them as global citizens. In so doing, we hope to develop a sense of belonging within the broader global community, and to encourage participation in civic actions which promote a better world. We want our students to champion the universal values of human rights, democracy, non-discrimination and diversity (OXFAM 2022).

RGU+ also builds upon our partnerships with industry. Support for students' career management and employability journey is threaded throughout the curriculum through close partnership between academic schools and the employability service. Work-based learning placements - whole semester, or even year-long - offer students unique experiences to begin planning their careers with an array of employers of all types and sizes. The creation of rich work-based learning environments to learn and rehearse work skills – from inter-generational working, to interdisciplinary learning - is the foundation of RGU+. Additionally, threaded throughout the RGU+ curriculum are the two broad pillars - education for sustainable development and innovation/entrepreneurial thinking.

RRGU+ would not be possible without the solid employability foundations built up in the institution over many years and which we layout in more detail below.

Creative Trail Event Yellow Team Original

METHODOLOGY & IMPLEMENTATION

Industry Board

RGU has built long-term partnerships with a whole array of industry partners for many years. Owners, Directors and specialists are all invited to school and course specific industry liaison boards and maintain regular close communication with the Business and Enterprise department (BAED) and the Centre for Employment and Community Engagement (CECE). Sharing their expertise and insights on developments within their sector is central to course development, internal subject review, revalidation and new course approval and proposals. For example, our Law School is developing a new Doctorate of Law which now recognises the value of learning in the workplace and how this informs research methodology – building on this triangulation of business intelligence, academic centres and the CECE.

Work-Based Learning

There are many undergraduate and postgraduate courses at RGU that have embedded placements. The CECE ensures that these placements remain effective both for students and companies. These close employer relationships and the placements they provide are invaluable in ensuring that our programmes are preparing graduates for the world of work effectively. In addition, the CECE and BAED's regular contact with our industry partners provide constant feedback on the effectiveness and contemporary relevance of our courses, and the extent to which they are producing graduates who are workforce ready. There are a number of case studies that can evidence this. One example, out with the traditional sector of business placements, is within our contemporary arts programme. These Gray's School of Art students are invited to work with industry to produce relevant, creative pieces of art reflective of the current operational environment or the direction of travel for an organisation. In the past, this same programme has included organisations from the energy sector and many others.

RGU has for many years used a "template" approach to ensure that students on placement - who are gaining industry experience, or participating in study abroad etc - have a framework against which they can document their learning through portfolio development. We are currently expanding this "work-based learning template" through RGU+, to ensure every student has a credit-rated experience in their course of study that explicitly supports the development of employability skills and assists them to recognise themselves as global citizens (Bosio and Veugelers 2021).

This particular initiative is being developed by our employability staff within the CECE. To ensure students benefit optimally from these experiences, the team works alongside the students to help them identify the skills they are gaining from the placement and make sure they are prepared to articulate these skills when seeking employment. This process of reflection is aligned with the RGU Employability Framework (see Figure 2). This framework defines the aspects which contribute to successful graduate outcomes and underlines the activities and support structures of CECE in developing student employability and future career success.

As part of the placement review process, employers are asked to provide an assessment of their student's skills both during and after their placements. This relevant, industry focussed assessment provides students with invaluable evidence for their reflective assignments and feeds into their plans for the next stage in their employability journey – be it further studies or employment. For the University, this information also provides real-time, employer feedback on our students' abilities and employability development needs.

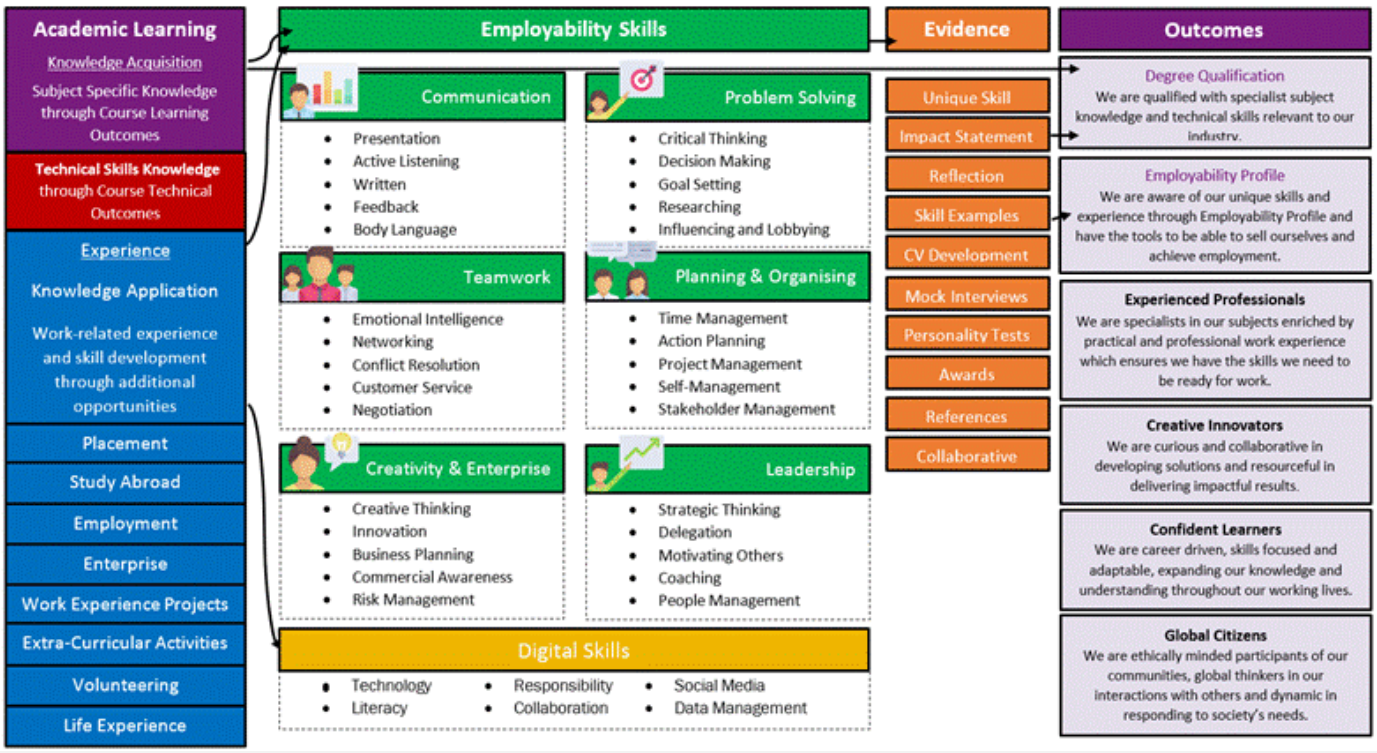


Figure 2: RGU Employability Framework

Role of Career Consultants

Signifcantly at RGU, Careers Consultants and Placement Officers work as one unified team, liaising with students, academics and employers to provide a consistent and coherent learning experience. Professional synergies are recognised in `cognate groups` where employability staff are paired up with academic schools to offer a complete employability service. The RGU employability framework (see Figure 2) provides an overview of the comprehensive employability journey journey offered to our students. Signficantly, RGU+ also opens up work-related learning opportunities to those studying courses historically lacking in work-based learning opportunities.

Support for Graduate Apprenticeships

Our industry boards and industy partnerships are an invaluable source of labour market information and work-based opportunities for us. Indeed, placement opportunities exist in all of our academic schools. In addition, these partnerships with industry have helped ensure RGU is one of the top three providers of Graduate Apprenticeships (GA) in Scotland, in areas such as course design, support model, mentorship and university/workplace partnerships. Key to a successful GA programme are industry partnerships, strong support infrastructures, and effective collaboration. To ensure a smooth and effective student experience we have created support teams for each GA programme, consisting of a GA student success coach, a course leader and a graduate mentor consultant. It is these kinds of developments that have helped us remain sector leading in this area of employability provision.

Student Employability Support – Study Abroad

Currently, students on the majority of our undergraduate degree courses have the opportunity to study abroad for one semester as a core part of their degree. Coordination of study abroad is incorporated into the CECE as it is recognised that mobility enhances students employability (Universities UK 2022). Students gain many skills from studying abroad, including the ability to learn in a multi-cultural environment, increased confidence, problem-solving and adaptability skills. On their return to RGU, the CECE works with students to articulate these skills to employers by means of a post-mobility employability workshop. Study abroad and community learning are an integral part of RGU+ and our broader aspiration of developing global citizenship.

ICRGU October 2016

Community Engagement and Learning

Student employability, the development of students' pre-professional identity and work readiness are high on the agenda of almost all HEIs. At RGU, we support these aspirations with a framework for authentic, community-based learning that develops our graduates social intelligence whilst adding value to the communities around our university. Our focus on community service learning (Marchi and Girotti 2022) embedded in the curriculum provides a platform for students to actively participate in the local economy. At the same time, our students are learning how to be responsive to social change, enhance their leadership skills, and develop the social empathy and engagement they will need in their post-graduation futures. It is through this form of learning that previously unrecognised employability skills are made explicit. A degree is no longer the only key to the door of employment. Instead, practical experience, adaptability, digital literacy, ethical engagement and a broader awareness of the world around them will help our graduates succeed in their future careers (World Economic Forum 2022).

Through this institutional focus on civic responsibility, and through the support of informed and engaged staff, RGU+ prepares students for transdisciplinary community placement opportunities. As an additional benefit, these placement opportunities often inform the development of students' Year 4 research projects. This preparation and experience provides the cognitive, communication, digital, reflective skills sought by employers, whilst supporting students to explicitly articulate the employability skills they will require for the evolving world of work.

Embedding community engagement and community learning across the University can be potentially disruptive and it is important to note that an inclusive and collaborative approach is essential. By building trust with community partners, a programme of `beyond the classroom learning` is embedded into the curriculum. A wide array of organisations have partnered with the University on these student outreach projects, from charities and local businesses, to our farming community, and the oil, gas and renewable industries to the Scottish Prison Service. Through these partnerships students learn with, from and about the community whilst adding value.

What RGU+ brings to the table

RGU+ is a new model designed to enable every student to capitalise on the full curricular and extra-curricular experience, both in the classroom and beyond. Its purpose is to celebrate and build on the teaching and learning of the University, by offering opportunities that develop students' global citizenship, employability skills, their spirit of innovation and their personal and professional values. At the same time, it aims to enhance their ability to articulate all of these skills. Alignment to the UN Sustainable Development Goals and the tenants of entrepreneurial and innovative mindsets are also built into RGU+ and sit alongside the community learning experiences offered to students. RGU+ ensures that these themes and skills are fully embedded and articulated within the curriculum and provides our students with a distinctive educational offering.

RGU+ AWARDS

The RGU Innovation Award Programme recognises the additionality offered through innovation and entrepreneurial thinking and is now embedded across the curriculum. Every student in RGU will participate in the first level of the award with opportunities built in to progress to levels 2 and 3. It is planned for the RGU+ Award to be offered to all students that participate in community learning, with the level of award gained matched to the breadth of experience gained and the level of reflection they offer as a result of the experience. The purpose of these awards is to ensure that every student takes part in an accredited learning experience where they are required to think about the future in terms of their ability to `make a difference` in the community

Some of this work is in its early stages of development, and careful and inclusive co-creation with academic staff, professional services and students is essential. A recent review of existing curriculum activity around sustainability and innovation suggests that we are doing well in these areas but also suggests ways that we can further enhance this provision.

Global citizenship is the aspiration of every university – the creation of graduates who have an informed world view (OXFAM 2022). However, this world view cannot be achieved entirely through classroom-based pedagogy. Beyond the classroom learning is essential and volunteering, work-based learning, study abroad and community engagement activities are all central to and credit-bearing within the RGU+ curriculum. This RGU+ curriculum is based firmly on a values-based practice philosophy and recognises that focusing on what matters to the community aids student engagement and development. Our curriculum focuses on enhancing the student experience whilst placing equal value on adding value to the community. We believe this approach enriches our students employability skills at the same time as aiding the communities in which we live and work.

Group1 Law Fair

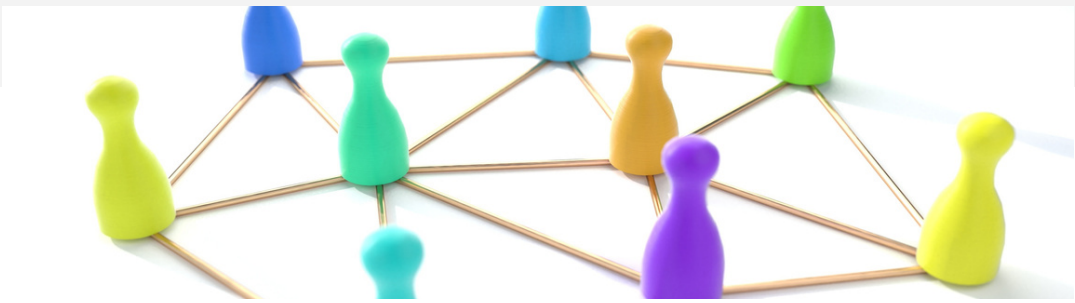
ANALYSIS AND EVALUATION

Student Employability Support - RGU Leaver Survey

RGU has for many years conducted an employability outcomes survey, called the RGU Leaver Survey. Despite changes in the sector and the introduction of HESA's Graduate Outcomes survey, RGU continues to run the RGU Leaver Survey and this is a crucial source of labour market information for us. The RGU Leaver Survey was designed to ensure comparatively early destination data was available to provide insights and analysis for the formal university course appraisal process (achieved through Tableau data visualisation dashboards). The survey also provides an opportunity for positive interaction with our graduates through the CECE department.

Should a graduate indicate they have either not found work or their desired next step, careers advice and guidance is provided through personalised in-person or online support. The RGU Leavers Survey is also utilised for the internal analysis of student outcomes, the targeting of information, advice and guidance to leavers, and also for updating of the contact details we supply to HESA.

The survey also provides forewarning of HESA's Graduate Outcomes national employability survey. This applies especially to courses with small cohorts, which, with a low Graduate Outcomes response rate, would likely have no statistically valid information. This is especially important for those accredited courses which require data relating to employment for accreditation and funding purposes. Determining a full destination picture is a crucial part of the feedback loop for our employability service, providing labour market insights that assess our impact on the local and national economy. In relation to RGU+ the leaver survey will provide early indication of areas of where student engagement with additionality addressed by RGU+ has had a positive impact on success rates. It allows us to identify areas where student employability may not be as strong as we hoped, therefore allowing us to strengthen the focus of RGU+ contextualised to the specific needs of course areas and students.



KEY PERFORMANCE INDICATORS

As with many HEIs the University has Key Performance Indicators relating to the student experience that provide a stark evaluation of success and this project aligns with three of these KPIs: namely, student success, student employability and student satisfaction. However, it is not just data that we use to analyse and evaluate the success of the project. Formal and informal communication with employers and students provide us with valuable insight to the types of graduates we are producing, the skills, knowledge, and competence they exhibit and how they make a difference in the world. Students can clearly indicate what their experience of being prepared for work was like and what areas of strength or weaknesses need to be further developed or addressed. Student voice questionnaires, Institutional Led Reviews (both internal and external), industrial boards, student staff liaison committees are all used within RGU to measure our impact on student employability.

REFLECTION & CONCLUSION

To date, a broad consultation with all stakeholders has taken place, early framework models have been shared across the University, new working groups have been established and a whole university approach to co-design and contextalising RGU+ across every school is being taken. During 2022/23, we also conducted a mapping exercise of United Nation Sustainability Goals, and innovation and community engagement activities, and created awards to recognise and reward this activity. In 2023/24, will focus on establishing more widespread curricular changes aimed at integrating RGU+ credit-bearing opportunities. By academic session 2024/25, RGU+ will be fully embedded in the curriculum.

Inclusion, collaboration and a shared approach to development has brought RGU+ to the forefront of the minds of the academic teams who are contextualising the pillars of the project within their areas. The constructive disruption being led by RGU+ is proving to be a successful process in opening up new opportunities for students to participate in learning that will provide them with robust and future-proofed skills for employment. These opportunities draw upon the core attributes of community learning and sustainability with an innovative mindset, which we aim to instil within our graduates. The employer partnerships, vocational learning, and our industry informed programmes have always been key to the success of RGU in terms of employability. RGU+ builds on these solid foundations by embedding a wider set of employability skills alongside students degree studies. RGU+ is now widely recognised within the University as a unique offering that will ensure we remain sector leading in terms of employability and it is aniticipated that this success will be reflected in our future metrics of student outcomes. However, it is imperative that we continue to expand the networks and opportunities that are available to our students and ensure that our curriculum remains contemporary and aligned with employers needs. To do this we need to approach RGU+ with a lens of continuous improvement.

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ROBERT GORDON UNIVERSITY ABERDEEN

SURFACING SKILLS AT THE UNIVERSITY OF LEEDS – AN INSTITUTIONAL APPROACH

Sarah Wenham **Karen Burland**

UNIVERSITY OF LEEDS

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EPD Feedback Loop

CONTRIBUTORS

SARAH WENHAM

Faculty Employability Manager (Surfacing Skills Lead - Student Careers)

Email : s.wenham@leeds.ac.uk

KAREN BURLAND

Academic Lead - Student Opportunities and Futures

Email: k.burland@leeds.ac.uk

SUMMARY

The following case study describes the University of Leeds' approach to supporting their students to recognise, understand and apply the skills that their curricular experiences afford them. It outlines the context within which the University is seeking to review and improve its curricular offer across all programmes and disciplines within its Curriculum Redefined programme.

The case study provides an insight into the value of a partnership approach through its new Surfacing Skills process and demonstrates how its development (after 18 months) is already leading to an institutional step-change within a research-intensive university. The contributors represent a cross-university partnership between academics and professional services which has enabled employer voices to be heard within disciplines that would not normally reflect their needs.

CONTEXT

The University of Leeds is a large (circa 40k students) Russell Group University based in the North of England. It is in the top 100 universities in the world, and is structured in seven faculties (Arts, Humanities and Cultures; Biological Sciences; Business; Engineering and Physical Sciences; Environment; Medicine and Health; Social Sciences). The University's Vision for Student Education (2020-2030) is that it will 'provide a transformative, research-based educational experience for students from diverse backgrounds, who develop the skills and knowledge they need to succeed and make a positive impact in the world'. Working with students as partners in their learning is a key strategic priority and the University's **Student Opportunities and Futures Strategy** (its equivalent of an Employability Strategy) reflects this ambition with the following student promise:

Throughout your time at Leeds, we will encourage you to reflect upon what success means for you now and in the future. Throughout your course experience and beyond, we will support you to develop and articulate the attributes, skills and behaviours that you need to achieve your goals and aspirations.

UNIVERSITY OF LEEDS

The scale of the institution means that it has a complex portfolio of programmes which has resulted in inconsistent opportunities for students to explore their own aspirations and to reflect on the skills value of their degrees. The University is now embarking on an institutional curriculum change programme Curriculum Redefined which aims to develop an innovative, imaginative and sustainable approach to education and an exceptional learning experience for our students.

A central part of the institution's response to Curriculum Redefined is through embedding employability within the curriculum to ensure that all students are supported to consider what a successful and meaningful future looks like for them. Thinking about the ways in which the curriculum can support student futures is a collaborative effort. The curriculum is a space through which strategic objectives intersect. At its best, this is a space where students are given time and space to learn and reflect, where they are assessed on work which is authentic and aligned to the expectations of academic disciplines, as well as professional bodies and employers, and where students from diverse backgrounds feel they belong, can thrive, and are valued for their unique contribution.

METHODOLOGY AND IMPLEMENTATION

The **Leeds Capabilities Framework** (CF) [see Figure 1] and the **Surfacing Skills** (SS) project are the key enablers for such a vision. Our ambition is to develop graduates who are academically, digitally and professionally literate. The SS process enables programme teams to identify, signpost, practice, assess, and provide reflection opportunities within the curriculum, complementing extra and co-curricular activities. The CF and SS are prioritised within Curriculum Redefined and a university-wide, multi-disciplinary team provides bespoke support as programme and discipline teams determine the skills profiles for their distinct areas. New Quality Assurance processes ensure skills are also embedded in all new programme proposals. We have developed resources for staff (including case studies, advice, blogs, and examples of employer indicator frameworks (skills criteria by which employers recruit graduates)), skills packs for students (explaining how their skills may be applied within the workplace), and we run regular workshops at the school, faculty, and institutional level.

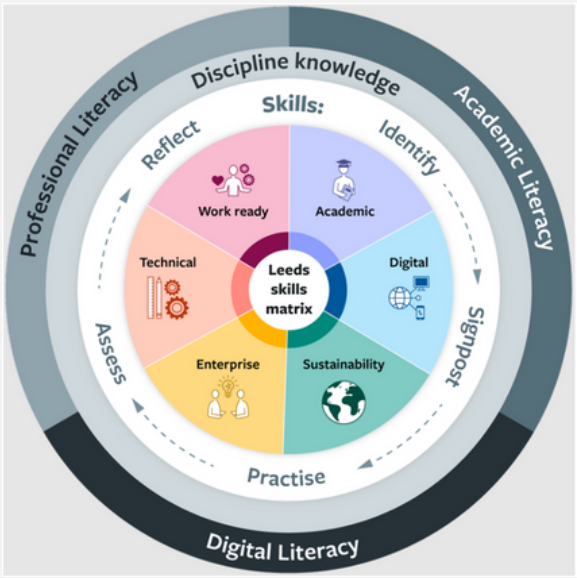
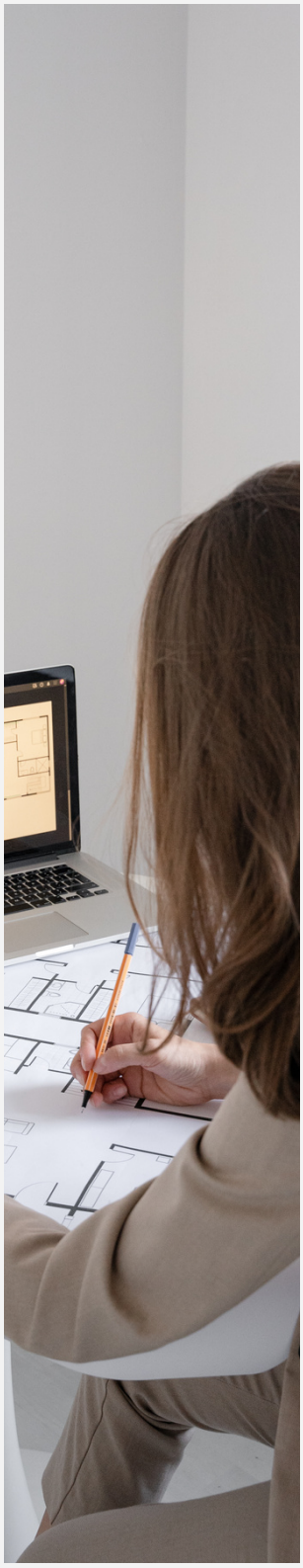


Figure 1: The Leeds Capabilities Framework



The Capabilities Framework – The Development Process

The primary aim of the Leeds Capabilities Framework is to bring together the core complementary components of academic, digital and professional literacies (including the development of their related skills) to support curriculum design and delivery. The Framework was developed by students and staff from across the university (including Student Careers, Enterprise, Sustainability, and Library teams) to articulate the behaviours, mindsets, knowledge, and skills our graduates need to develop for their personal and professional futures. For example, if someone is 'academically literate', what does that mean? What is someone who is 'digitally literate' able to do? And if our graduates wish to be successful in the workplace, how can their educational experiences enable them to be 'professionally literate' and complete that transition with confidence? The framework was devised to support academic teams at Leeds to determine how those three literacies work together for their particular discipline, and how they can articulate their unique 'DNA' when compared to similar courses at other universities.

Whilst degrees are not just about skills, surfacing and developing them is vital for supporting students to become successful within their discipline and subsequently as confident graduates. The term 'surfacing' is key here: our bespoke **5-stage process** built into the Framework enables us to shine a spotlight on the skills that are already there, identifying when and where they will be developed. This is important, as graduate employers and students tell us that they often struggle to understand and articulate the skills value of degree programmes.

The inner core of the Framework is the **Leeds Skills Matrix**, a collection of transferable skills which have been 'packaged' into six discreet domains. This skills matrix provides a starting point for teaching staff and students to reflect upon their application and suitability for both disciplinary and individual aspirations. This is important as a degree can only support a finite number of skills. Where students require additional key skills relevant to their career futures, our university enables them to expand their skillset through our Discovery strand, as well as through a wide range of extra-curricular opportunities. Building in space for student reflection on skills as a core part of the curriculum is essential to enable these skills and skills gaps to be identified.

Student reflections on skills

Alongside these initiatives, there were several developments that gave us a better insight into how our students perceived their development and mastery of skills. Firstly, the introduction of the Graduate Voice questions into the Graduate Outcomes Survey in 2019 presented the sector with a new perspective on student satisfaction. In particular, the question focusing on whether graduates were using the skills from their studies in their current roles or activities, highlighted that a large proportion of graduates (circa 30-50%) were not confident that they were. At Leeds we were interested to explore the reasons for this. Were our graduates gaining a range of transferable skills from their studies, but simply struggling to fully recognise this? And what might students need to better understand the skills they are development throughout their University experience?

At the same time, research was being carried out in 4 representative Schools: namely, the Schools of Law, Physics, Music, and Civil Engineering. This research was designed to ascertain the perspectives of our students on the importance of skills development (to both them and employers); the impact of their current degree and broader university experience on their skills development; and the extent to which they felt that key skills were being developed and signposted.

The key results below are representative of our headline findings:

- "*I recognise the wide range of skills I am developing throughout my degree programme*" - 20% disagreed with this statement.
- "*I feel confident articulating the skills I have developed throughout my academic studies to an employer during a job interview*" - 42% disagreed with this statement.
- "*Do you feel teaching staff highlight the skills you are learning throughout your course?*" - 70% responded 'no'.

It was clear from these results and the Graduate Outcomes findings that a new simple process was required to support academic teams to consider how skills could be surfaced within curriculum as they designed and reviewed their modules and programmes. The surfacing skills process was established to support this process of skills extraction and analysis. This represented a move away from twelve institutional 'LeedsforLife' skills, from which all modules and programmes previously had to select, to a new and more bespoke, active approach.

The 5-Stage Process of Surfacing Skills

The Origins

Discussions were held with the careers teams at Kings College London (KCL) in early 2020 to understand their process of 'extracted employability'. This process had enabled KCL to consider how QAA Subject Benchmark statements (which already influenced the content and skills of all degree programmes) could be used as a basis for identifying and 'extracting' those employability skills that were already present in their curriculum. Their collaborative approach of working with academic teams to better understand the skills that were already being developed within their teaching and assessment, but which needed to be surfaced, resonated with the team from Leeds. As a similar research-intensive university, the KCL process was quickly assessed to be useful for shaping the ways in which we could support our students to understand the transferable 'skills value' of their degree experiences.

It was important from the outset to develop a clear and simple process that could be followed by subject teams when surfacing the skills value of their degree programmes. The process supports staff to consider the skills that are most appropriate to their discipline, using a combination of current programme specifications, the Leeds Skills Matrix (see Figure 3), Quality Assurance Agency (QAA) Subject Benchmark Statements and any relevant Professional Statutory Regulatory Body (PSRB) requirements. The process also recommends consultation with current and past students as well as relevant employers. The process was developed to be a sustainable review and decision-making tool designed to support curriculum design and delivery.

Drawing on Advance HE's framework for enhancing and embedding employability (2019), the Leeds process for Surfacing Skills adopted a 5-stage approach (see Figure 2).

Each stage requires the academic discipline area to reflect upon:

·Their current position with regards to skill identification and development.
·Their relationships with external, professional and accrediting bodies.
·The position of teaching teams in relation to programme redesign and their capacity to take on additional review and enhancement.

Figure 2: The Leeds approach to the 5-Stage Process for Surfacing Skills

So far, subject teams have approached and used the 5-stage process in different ways, according to their needs. For example, some teams spend more time focusing on Stage 1 and the disciplinary skills that are most relevant to them and the world beyond the university. The Surfacing Skills team (including staff from Student Careers) supports consultation with graduate employers, students and alumni to ensure a wide range of perspectives are involved at this review and selection stage.

Other programme teams may feel more confident about Stage 1 but are less certain about how those skills are being assessed (particularly in relation to authentic assessments). Some notice formal gaps in how they enable their students to reflect upon their skills and then proactively plan for future development. The process includes staff support and guidance information for each of the 5 stages and this support has been warmly welcomed by academic teams seeking help with their programme reviews.

The Leeds Skills Matrix

Our degree programmes and modules are packed with a wide range of opportunities for skills development some aligned to the discipline and others more generic. Prior to adopting the Leeds Skills Matrix, the University had twelve cross-Institutional skills and attributes from which all programmes were required to select when designing programmes and modules. Our aim was to work collaboratively with colleagues across the University (see cross-institutional teams outlined below) who had an interest and expertise in certain skills domains to create a broader, more holistic, and user-friendly set of skills options for staff and students.

Figure 3: The Leeds Skills Matrix

The matrix we have developed encompasses **6 domains** which operate independently whilst also intersecting (see Figure 3). There are many skills which feature in several domains (for example 'collaboration') and this enables academic staff and students to recognise the transferability of those skills across different contexts, and their clear importance with the subject area.

Each skills domain area was developed (and 'owned') by a different internal team, listed below. These cross-institutional teams were required to develop and submit the sub-component skills that are the most highly valued within that particular context:

1.Academic Skills – University of Leeds Learning Development Team: Library Services (Academic Advisory Team)
2.Digital Skills – University of Leeds Learning Development Team: Library Services (Digital Advisory Team)
3.Sustainability Skills – University of Leeds Sustainable Curriculum Project Team
4.Enterprise Skills - University of Leeds Centre for Enterprise and Entrepreneurship Studies
5.Work Ready Skills – University of Leeds Student Careers Service
6.Technical Skills – Programme/discipline teams

The Leeds Skills Matrix is a starting point for programme teams. It can support teams to identify the skills which underpin their discipline and are core. In addition, the Leeds Skills Matrix can be used flexibly, and skills may appear within different domains, with appropriate nuance. Ongoing review of skills is encouraged, as disciplines develop and priorities change. Programmes also have free rein to adapt skill definitions to suit their discipline, but they are asked to be consistent when they use this language with students.

Academic Skills Domain

Students arriving at university will have a varied experience of academic writing, critical thinking, reflection and other associated academic skills from their previous education or work experience. Because of this, it is important that we make no assumptions about their prior skills acquisition or their understanding of academic conventions in Higher Education. The University of Leeds therefore endeavours to ensure that the skills required for successful completion of programmes are embedded into the curriculum, with opportunities for practice, reflection and improvement built into the course structure.

When determining the skills required for study in Higher Education (and when including skills in this domain), we are always careful not to genericise them. The required skills will differ for each discipline, and we work with our academic teams to consider them within their disciplinary context, social practices and genres. By adopting an academic literacies approach (Lea and Street, 1998; Lillis et al., 2015), our offer at Leeds is a more nuanced, discipline-specific understanding of the contextual and cultural shared practice of academic communication in their discipline.

Digital Skills Domain

JISC defines digital capabilities as "the skills and attitudes […] which equip someone to live, learn and work in a digital society" (JISC, 2022a). Our list of digital skills at Leeds directly reflects the six overarching elements of the JISC Digital Capabilities Framework. Students at the University of Leeds have access to the JISC Discovery Tool, which is designed to help them reflect on their digital capabilities and to identify current strengths and areas for development. The Library's Learning Development Team is also expanding its offer to provide digital skills development for students, both embedded in the curriculum and through co-curricular opportunities.

Sustainability Skills Domain

The 10 sustainability skills within this domain (and their definitions) were adapted by the University of Leeds from the QAA Education for Sustainable Development Guidance 2021 (where they are referred to as 'key competencies for sustainable development' p.20-21). These were reviewed internally by the Sustainable Curriculum Project Team and in consultation with the Sustainable Curriculum Advisory Group. The definitions are informed by previous work and case studies of good practice from the University of Leeds. The skills list will continue to be reviewed in response to the knowledge generated through Curriculum Redefined, the Sustainable Curriculum programme, and the LITE Fellowship "Redefining sustainability in the curriculum". Defining student sustainability capabilities will be part of how we integrate sustainability across the Leeds Curriculum.

Enterprise Skills Domain

Enterprise involves undertaking a bold or uncertain task in order to achieve an outcome which is of value to others. This typically leads to entrepreneurship and starting new businesses, to social enterprise and creating new social organisations, or intrapreneurship and developing innovative projects in existing companies. Skills in this domain are critical for developing the ability to positively engage in changing situations and for identifying new opportunities which create economic, social or cultural value, regardless of the subject studied. Enterprise is a multi-faceted approach involving the development of skills, knowledge and attributes.

The skills list within the domain was derived from EntreComp (The European Entrepreneurship Competence Framework). Academics are encouraged to treat the list as part of a holistic approach to student development along with appropriate knowledge development within and outside the curriculum, and the overarching development of enterprise attributes and mindsets.

Work Ready Skills Domain Context

Graduates have qualities which are greatly valued by employers, although over recent years various industry sources have been reporting that certain transferable and technical skills have been found to be in short supply:

'One in five graduates not 'workplace ready' (People Management, 2019)

'Graduates lack work-ready skills that businesses need during Covid era' (ISE Student Development Survey, 2021)

For the purpose of this work-ready skills domain, the University of Leeds Student Careers Service conducted desk research drawing on a range of graduate employer sources. This research provided insight into the skill areas and qualities that are most highly valued in graduate applicants. From this research 16 skills areas were identified as key entry-level skills most commonly requested by UK graduate employers. The more detailed definitions of these skills have been developed following consultation with professional staff within Student Careers. The resulting set of Work Ready Skills, and their definitions, are now available to be adapted by subject teams.

However, during the desk research process into work-ready skills, it became clear that graduates will need more than just skills above to navigate an unpredictable world, whether in or outside of work; they will also need certain behaviours and attributes that will enable them to cope with uncertain career futures and rapid change.

Indeed, it may be the case that, whilst work-ready skills can be embedded in programmes at Leeds, broader notions of qualities, attributes and behaviours are more difficult to identify, teach and assess. Despite this challenge, we believe that these skills are an important starting point when undertaking programme design and crafting learning outcomes. They may not all be 'measurable' or 'assessable' but opportunities to develop them can still be made explicit to students.

Technical Skills Domain

This domain is left deliberately empty as it is a space for programmes to house those skills which do not feature within the other 5 domains due to their specialist and/or technical nature. This could be the mastery and use of, for example, specialist software, lab-based skills or creative techniques. Those skills may also feature within the QAA Subject Benchmarks, be linked to PSRB requirements, or simply exist as a feature of the discipline at Leeds or the industry sector beyond.

Development of a 'Brand'

The appointment of a Digital Content Creator, housed within the Digital Education Team but aligned to Student Careers, meant that a professional brand and set of digital assets could be developed to support the rollout of the Surfacing Skills Project. These included:

- Design of the Capabilities Framework
- Design of the Leeds Skills Matrix
- Development of 'skills' icons for all 50 skills across the 5 domains (to be used by degree programmes in signposting skills to students)
- Creation of 'skills packs' including new videos featuring employer and student voices
- Development of branded templates for PowerPoint and other presentation materials

Support for Academic Teams

A key aspect of the surfacing skills project was the provision of a range of support packages for academic staff. These included:

- **Open Workshops** – a number of these were developed to introduce the concept of the Capabilities Framework; the Surfacing Skills Process; the 3 literacies (ie. digital; academic; professional). These workshops were optional for any teaching staff member but were particularly targeted at programme leaders and module tutors.
- **Bespoke Workshops** – these were co-created with subject staff who wanted a surfacing skills lens on their programme development plans. These were well received as they enabled those teams to adapt the process to suit their current position and aspirations.

- **Targeted Support** – hotspots of engagement were mapped and aligned against school and programme teams which had indicated they were interested in skills development through their Curriculum Redefined reviews. Those schools were offered bespoke support and encouraged to include elements of surfacing skills within their ongoing curriculum conversations. Often these conversations emerged through relationships with Faculty Employability Managers (employed by Student Careers).
- **Surfacing Skills Hub** – a new SharePoint site was created to be the focal point for all information and advice relating to the project. It included:

1. **Case Studies** – staff were encouraged to submit case studies of how they were already developing skills in line with some or all of the 5 stages. As the project progresses, it is anticipated that these will increase and be far more aligned with the project as a whole. The case studies are written up and available for all staff to access.
2. **Articles and Research** – relevant examples have been curated and will be added to on an ongoing basis.
3. **Teaching resources** - these are being curated and developed as more staff become engaged in the process. Staff are encouraged to share their teaching materials and activities, and these are supplemented with branded slides and images.
4. **Information** – the hub houses pages of relevant advice and information on the 5 stages; the Leeds Skills Matrix; links to other relevant areas of the University.

- **Surfacing Skills Discussion Network** – a TEAMS site was established for staff to join who wanted to continue to have regular discussions around Surfacing Skills. It also acts as a communications channel for relevant activities and events.
- **Surfacing Skills in The Curriculum Conference** – held in April 2023, this conference showcased good practice from across the University in relation to the 5 stages and the skills domains within the Skills Matrix. It was attended by over 150 academics, professional services staff and student interns. It provided a central space to celebrate the work completed to date, to listen to our students, and to also include the views of key employers.

It should also be noted that through the Curriculum Redefined project, a range of new key roles were bid for and secured to support the ongoing development of the programme. These roles included:

- Careers Consultant (Surfacing Skills)
- Digital Education Content Creator (Surfacing Skills)
- Academic Lead (Surfacing Skills)

ANALYSIS AND EVALUATION

We are still at the very early stages of implementation of our surfacing skills project but early indications are that colleagues appreciate the structure provided by the Surfacing Skills process. Feedback so far also reflects the process's flexibility which enables staff to think carefully about their programme and discipline's DNA and adapt the approach to the needs of their students, staff, accrediting bodies and relevant employers. The Surfacing Skills workshops have been the most populated across the Curriculum Redefined programme to date and in April 2023, 150+ delegates and 30 presenters attended our 1st internal Surfacing Skills within The Curriculum Conference.

One aim of our work is that programme teams will develop a clearer sense of the knowledge and skills outcomes they are trying to achieve for their students, whilst they work through the process of surfacing skills. Our approach has been to encourage an approach which embeds skills as part of programme learning outcomes, so that they become embedded within the curriculum. Throughout the process, we have worked collaboratively with the Quality Assurance team, the University Assessment Leads, and the teams responsible for developing competency standards to develop guidance and support for academic colleagues working on programme proposal forms. The Capabilities Framework formed the basis for this work, and colleagues were asked to describe the ways in which their proposed programmes had embedded the framework at each level of study. We provided an indicative phrasebank to help staff to develop and reflect on the ways in which this was to be achieved through teaching and assessment design.

CONCLUSION AND NEXT STEPS

The development and implementation of the framework (which at the time of writing in 2023 is still in its early stages) is eliciting a great deal of positive engagement from academic teams from across the University. A key feature of the programme is the avoidance of one single fixed approach or 'way to do it'. The key message is that such an institutional project needs to be flexible and allow discipline teams to adapt the principles and processes to their areas as they see fit. The ability to work with the different skill domains has also enabled teams to a) appreciate the transferable nature of their discipline skills and b) to consider a broader approach to skill development, beyond that of the usual QAA Subject Benchmarks. Conversations about skills have also developed into considerations of behaviours and values. Discipline teams are also being encouraged to reflect on behaviours, attributes and values when exploring the ways in which three literacies apply to their programme design and delivery. It is too early to say whether a unified set of university-wide behaviours, values and attributes will emerge, or whether programmes will individually determine these for themselves.

The framework is evolving and will be adapted to cater for different perspectives and agendas. For instance, there will certainly be the addition of an Equity, Diversity, Inclusion (EDI) component in the future. We are also considering the addition of a fourth literacy - sustainability - to the mix.

As we progress through the process, we are developing further resources and support, including:

- New teaching resources and case studies.
- A student-facing version of the staff surfacing skills hub which will be linked to an online development portfolio (Stage 5: Reflection).
- Development of an online mapping tool for skills and assessment for modules and programmes.
- Development of a student-facing online mapping tool for skills.
- Further exploration around Professional Literacy as a concept and the place of skills within this.
- Further development of a university-wide approach to experiential learning, authentic assessment and the place of skill development within both aspects.
- Professional services working with academic teams to blur the edges between the curricular/co-curricular/extra-curricular experience for students to support their life wide recognition of skill and behaviour development.

As we continue to work on Curriculum Redefined as an institution, we will gather and reflect upon feedback from our colleagues, students and graduates about the process and impact of subsequent changes. We hope that the structure and clarity of the process will empower staff to be creative in the ways in which they design and assess their teaching to support student to identify and pursue their meaningful futures.

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ADOPTING A STRATEGIC APPROACH TO GRADUATE OUTCOMES: THE EMPLOYABILITY HEALTHCHECK MODEL

LOUISE RUTHERFORD

MARTIN EDMONDSON

GRADCORE

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EPD Feedback Loop

CONTRIBUTORS

LOUISE RUTHERFORD

Independent Researcher, Louise has worked in multinational corporations, Higher Education institutions, and run her own consultancy businesses.

Email : louisehrutherford@gmail.com

MARTIN EDMONDSON

Managing Director, Gradcore Martin is the founder of Gradcore, and over the last 20 years has led a wide range of graduate recruitment and employability projects across the UK and Europe.

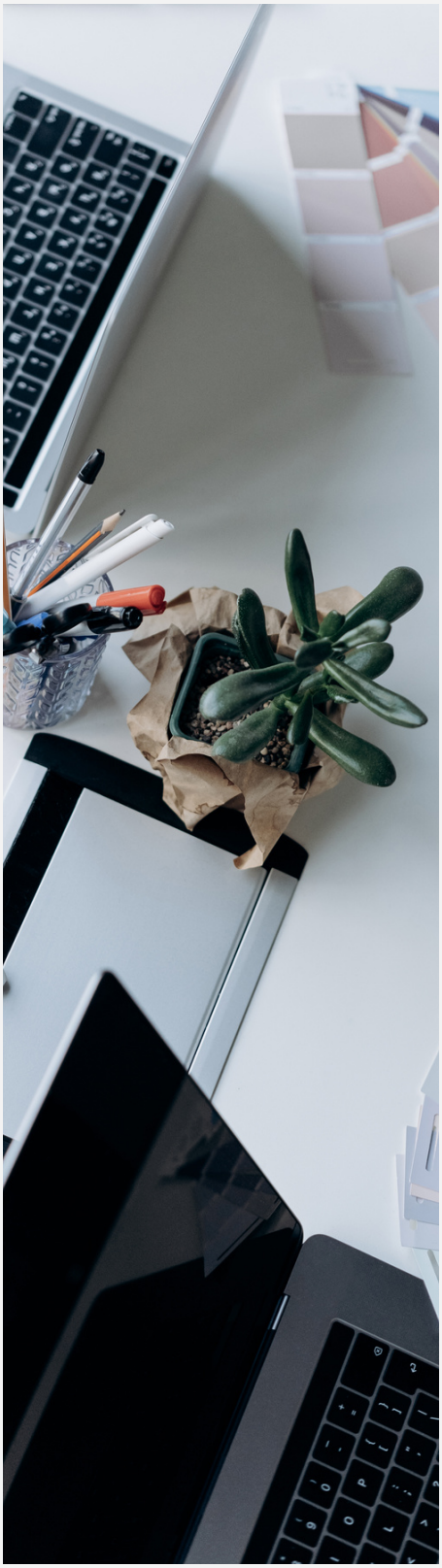
Email: martin.edmondson@gradcore.co.uk

SUMMARY

The employability healthcheck model (EHM) has been developed over a period of 20 years by Gradcore, a social enterprise, specialising in graduate employment and employability. Clients include over 70 universities across the UK and Europe, alongside a wide range of graduate employers. The model adopts a "look in, look out, look forwards" approach: evaluating current practice and collecting primary data to establish baseline employability activity, understanding, and ambition; reviewing and highlighting relevant external examples, case studies and best practice; and synthesizing the findings into a pragmatic set of recommendations with an underpinning report. This enables Higher Educations Institutions (HEIs) to adopt a strategic approach to achieving their graduate outcomes goals by engaging with key stakeholders to secure buy-in and future investment. Extensive engagement with employers and the integration of current, global labour market information (LMI) provides credibility to the recommendations and increases institutional commitment to adjust programme content and quality assurance processes which enable curriculum changes, at scale, to reach all students. This case study outlines the model, proving contextualised examples and further resources.

CONTEXT

The extent to which universities should prepare graduates for the workplace has been an ongoing debate for over 20 years (Holmes, 2015). Changes in UK policy have fuelled this discussion including changes to HE funding and the rise of 'student consumerism', accessibility of metrics enabling HEI comparison and heightened student expectations, alongside the advent of rapid technological change and resulting employer requirements (Priest, 2018). The marketisation of Higher Education and increased government regulation on graduate outcomes, have raised the profile of universities to address the skills gaps in what HE produces and what the workplace demands (Archer & Davison, 2008; Institute of Student Employers, 2021; Tomlinson, 2021). Furthermore, the role of employers in career development work has been questioned in relation to social inequality i.e. does their input to provide career-relevant experiences for those in education recreate this inequality or challenge and change it. Evidence from the secondary education sector suggests that high quality employer engagement often benefits those socially and economically disadvantaged students that need it the most, proportionally more so than for those who with more social capital that arguably need it less (Percy and Kashefpakdel, 2018). In this context, the potential impact of university-employer collaboration is significant and increasingly relevant in today's HE landscape.



Changes in UK policy have prompted universities to place messages around employer collaboration and access to high-skilled graduate jobs at the forefront of student recruitment. Graduate employability no longer resides within the domain of careers services but is increasingly accepted as the responsibility of the whole organisation (Bridgstock and Jackson, 2019). The enhanced role of employers in HE and the impact of labour market information (LMI) is visible across curricular, co-curricular and extra-curricular activity, through the expansion of work-integrated learning (Dalrymple et al., 2021). The rise in significance of LMI is also shown by the growth of initiatives such as industrial advisory boards, employer mentoring, and employability awards across the HE sector.

The Employability Healthcheck Model (EHM) has been developed by Gradcore, a social enterprise, working with 70+ universities predominantly across the UK over the last two decades. It enables HEIs to adopt a strategic approach to employability to enhance graduate outcomes, harnessing employer and labour market input to inform programme and curriculum development.

The EHM takes an institution-wide approach to improving graduate outcomes with an evidence-informed approach to develop employability strategies, embed employability in the curriculum, design staff development programmes, and create effective employer engagement plans. It is aimed at all levels of study, including postgraduate, and for specific learner groups, such as international or socially/economically disadvantaged students e.g mature, widening participation or BAME students. The model focuses on engagement with key stakeholder groups operating within the graduate outcomes space, with LMI provided by a wide range of employers specific to the institutional context. The process takes 3-6 months, with the implementation of the recommendations dependent on the strategic imperatives, timescales, and resources of the individual university.

METHODOLOGY & IMPLEMENTATION

The Employability Healthcheck Model is based upon a three-stage process – the Look In, Look Out, Look Forward approach (Figure 1).

Look in – evaluate current practice and activity, and establish baseline data.
Look out – review and draw on relevant external examples, case studies and best practice.
Look forward – synthesize findings into a pragmatic set of recommendations with an underpinning report.

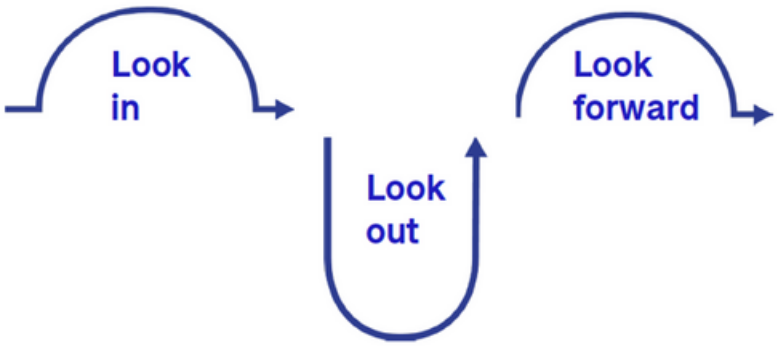


Figure 1: The Look In, Look Out, Look Forward Approach

The model is adapted for each institution, depending upon their strategic priorities, student demographics, local and regional mix of employers, graduate destinations, investment available, and the time period available. Figure 2 shows the core elements of the model:

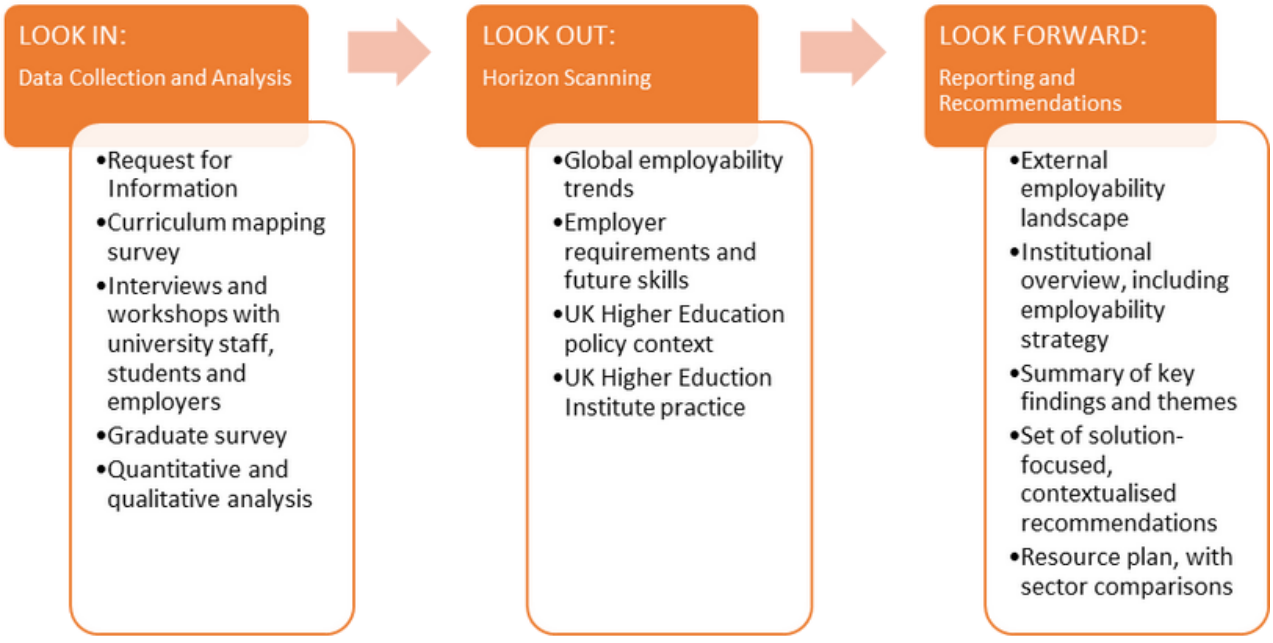


Figure 2: The Employability Healthcheck Model

Firstly, the Look In stage utilises a variety of methods to collect primary data from key stakeholders, including a representative sample of university staff, employers, students, and graduates. This is carried out by independent Gradcore researchers, with most activity conducted virtually (a legacy from the global pandemic), alongside some face-to-face interaction according to participant preference.

This stage commences with a Request for Information (RFI) for key strategy documents and data outputs, to provide context and topics to be explored during qualitative data collection, including:

- University strategy
- Teaching and Learning strategy
- Employability strategy
- Access and Participation Plan
- Graduate Outcomes Survey data and reporting (institutional or School/Faculty level), including Professional/Managerial information and Equality and Diversity data
- Career registration summary data (if applicable)
- University comparator group list
- Employability team organograms
- HR recruitment, progression, and development policies and documents

Gradcore workshop

As an example of our incorporation of university strategy, a recent EHM carried out at Teesside University was informed by their Future Facing Learning initiative - their distinctive approach to Learning and Teaching, which has been designed to provide students with the skills, knowledge and expertise to thrive in complex and uncertain futures. The core themes drawn from this strategic approach then provided topics to be explored during the primary data collection phase with key stakeholders.

To determine current employability practice and activity, and establish baseline data, the range of consultation and insight activities with stakeholders includes:

- Detailed benchmarking survey to identify current employability activity in the curriculum, completed by course and module leaders
- Workshops with academic and professional service staff
- 1-2-1 interviews with academic and professional service staff from across the university, including senior leaders
- Employer roundtable events with a range of primary, secondary, and tertiary employers (local, regional and global) across all sectors
- Focus groups and vox pops with students across all levels of study
- Alumni survey with graduates from a range of discipline areas

Employer input is tailored to suit the economic profile of the region, providing contextualised LMI to inform employability recommendations. For example, the regional economy surrounding the University of Kent consists largely of SMEs and public sector organisations; participants to the employer roundtable during the EHM in 2023 were recruited to reflect this and hence shape the key findings and recommendations. In contrast, due to the nature of their programmes, many graduates from the University of the Arts London (UAL) develop portfolio careers and freelance working; the UAL employer roundtables were populated largely by alumni running their own creative practice or agency. This unique employer grouping led to a focus on enterprising mindsets and associated entrepreneurial skills forming a key part of the Creative Attributes Framework for Enterprise and Employability, which was refreshed alongside the EHM.

This stage is completed through an inductive reflexive thematic analysis of the qualitative data, aimed at identifying the key themes of most importance to university staff, students and graduates, and employers (Braun and Clarke, 2019). This is supplemented by a quantitative approach designed to collate and summarise curriculum mapping data. This data helps us to identify current employability provision across Schools/Faculties and Year groups and to gauge understanding and opinions on the subject of employability.

Secondly, the Look Out stage involves horizon scanning to review global, regional, and local employability trends. A strong focus on LMI and an assessment of employer engagement with graduate employability, helps us ascertain whether universities are providing the skills, knowledge and behaviours required by employers today, but also those identified as essential for the future. In addition, the UK Higher Education policy context is reviewed to identify current drivers, enablers, and barriers, that face the sector and the individual HEI. For example, where the university has a high proportion of widening participation students, the significance of Action and Participation Plan targets approved by the Office for Students is highlighted; this was the case for the EHM with Bath Spa University where 4 in 5 students had at least one marker of disadvantage.

During this second stage, we also highlight relevant examples, case studies and best practice from across a range of comparator universities to provide inspiration and motivation for change. This process draws upon external expertise from advisers and associates, and the internal Gradcore knowledge developed through the deployment of the EHM model across a multitude of HEIs over the last two decades.

Finally, the purpose of the Look Forward stage is to provide each university with an evidence-based set of contextualised findings and recommendations which enable them to develop, implement and evaluate an employability strategy appropriate to suit their institutional ambition and goals. For instance, the recommendations for Sheffield Hallam University reflected their particular institutional commitments to:

- civic responsibility and social mobility;
- embedding an authentic work experience framework for all levels of study, to generate social capital, and job opportunities; and
- graduate retention within the region.

The EHM report provides context with reference to both the external employability landscape and an internal institutional overview, alongside commentary on key findings and themes. It provides an evidence-based set of recommendations, enabling senior leaders to make informed decisions about future action, priorities, and investment. Employer engagement is critical at this stage – our experience shows university staff are more inclined to adjust curriculum content and quality assurance processes when recommendations are underpinned by robust employer input and LMI.

For example, Bath Spa University commissioned Gradcore to conduct the Employability Healthcheck Model during the summer of 2022. The aims were to refresh the employability offer, enhance Graduate Outcomes performance, and provide a foundational report for the incoming Head of Careers and Employability. The University's Education strategy placed employability as a central facet:

- *"Education Strategy Objective 1: Ensuring the professional application of our programmes and the employability of our Graduates are central to programme design and delivery, with opportunities for experiential learning and skills acquisition, application and articulation throughout each programme."*

The curriculum mapping survey conducted as part of the Look in stage provided a detailed snapshot of employability provision, from levels 4-6, across all schools in the University. This mapping data from the EHM showed a clear commitment to embedding employability in the curriculum but there was still some distance to travel for this to be consistent, widespread, and meaningful. In particular, the EHM highlighted the need to ensure work-based learning and placement opportunities in more courses, with flexible delivery models. For example, whilst a placement year was offered to all new degree students, take-up rates remained stubbornly low, demonstrating this delivery model was not appropriate to all.

Following the EHM, the Placements team tested a series of models to establish which might be most effective at Bath Spa. These models were then evaluated in terms of whether they were scalable, targeted, embedded, and personalised. These new models included: a five-week Virtual Internship Programme with employers setting challenges for the students and functioning as judges in a final pitching session; an online internship with live business input from Practera (an experiential learning platform that develops employability skills and enables educators to engage learners with real experiences); and the development of an enterprise and entrepreneurship experience within the Work Placement Open Module. Whilst still in the early stages of implementation, there is a real appetite for these pilot initiatives across the institution. Practera, in particular, received excellent feedback from participants, and the University is now planning to embed similar schemes next year.

ANALYSIS AND EVALUATION

To illustrate the Look Out, Look Forward approach and the EHM in more detail, our collaborative project with Kingston University is outlined below:

Background:

The EHM was deployed at Kingston University in 2020/21. Early analysis showed that employability was not as visible as it could be, with the potential to be embedded more widely across the curriculum. Initial recommendations included adopting a "joining the dots" approach to raise the profile of employability, both internally with staff and students and externally with employers. For instance, joining the dots for students meant ensuring that curricular (and extra-curricular) employability was visible, explicit and reflected upon. This was particularly important to aid those with lower social capital and help students to make connections between sometimes subtle employability development and its long-term application for them in the labour market. The overall impact of this early-stage intervention was evident in the feedback provided by a key Employability Manager who worked with us on the plan and reported that the Healthcheck had enabled them to see what they were doing really well and what they were doing less well, and it gave them a path forward.

Employer Engagement:

The university has embarked on delivering a progressive new model of education through its Town House Strategy that ensures the future skills most valued by employers are embedded in the curriculum for every student. Among the strategy's four goals is the need to "partner with industry to develop our students' sought-after skills as well as engage government bodies and organisations with our ideas and expertise in future skills to further debate and influence policy." Kingston's Vice Chancellor launched the institution's latest Future Skills report, conducted with support from YouGov, at the Houses of Parliament last year. The report set out to understand what core skills employers were looking for from graduates and the university is now embedding the development of those skills within the curriculum, aligned with their graduate attributes. Kingston wants its students to be highly sought after, so early engagement was critical. To identify these core skills, the University sampled more than 2,000 businesses and 1,000 students. Employers included Coca Cola, John Lewis, Mastercard, TikTok, and Unilever. The research identified the key skills required by employers today and those skills that would be in increasing demand in 5-10 years time. These future skills took into account the rapid evolution within the labour force due to technological change, such as AI. This extensive employer engagement provided credibility for the skills strategy, and helped secure senior management buy-in and investment at Kingston. The top 10 skills identified were:

1.Problem solving and processing skills
2.Critical thinking
3.Communication skills
4.Digital skills
5.Analytical skills
6.Adaptability
7.Resilience
8.Creativity
9.Ability to build relationships
10.Initiative

Gradcore workshop

The Employability Healthcheck Model:

To help operationalise the Future Skills Strategy, Gradcore was commissioned to conduct the EHM. The Look-In stage involved engaging with over 320 staff, student and employer participants, through workshops, interviews, roundtable meetings, surveys, and an 'Employability Summit' event. A strategic data and document review completed the primary data collection. During the Look Out stage, we utilised findings from the extensive employer engagement outlined above, setting the skills strategy within the context of UK HE policy and practice. This horizon scanning activity contributed to the final Look Forward phase, by informing the reporting and recommendations tailored for Kingston University i.e. 'Joining the Dots'.

Investment:

As a direct result of the EHM, significant new investment was secured, which enabled the Careers and Employability Service to grow from 14 to 34 members over a period of 3-4 months. This growth including the creation of a brand new central Placements and Partnerships team. This Placements team was comprised of a Manager, two Business Development Consultant roles focussing on employer engagement for placements, and two Placement Co-ordinator posts to oversee the placements process in conjunction with Faculty teams. As well as supporting traditional sandwich placements and internships, the team works with employers to develop different models of work-related learning (WRL) to support academic colleagues to embed employability into the curriculum. These include credit-bearing placements for business development, consultancy projects, and live briefs. Service level agreements covering placements, have been introduced between the University and their two key stakeholder groups – students and employers. It is already widely recognised across the University that this team is essential to the project of embedding new forms of WRL across the curriculum. The findings from the EHM also helped to secure external funding. This included £1.7m awarded by the Mohn Westlake Foundation to help address students from disadvantaged and minoritised groups – groups which had hitherto benefited less from their degrees than students from more advantaged backgrounds.

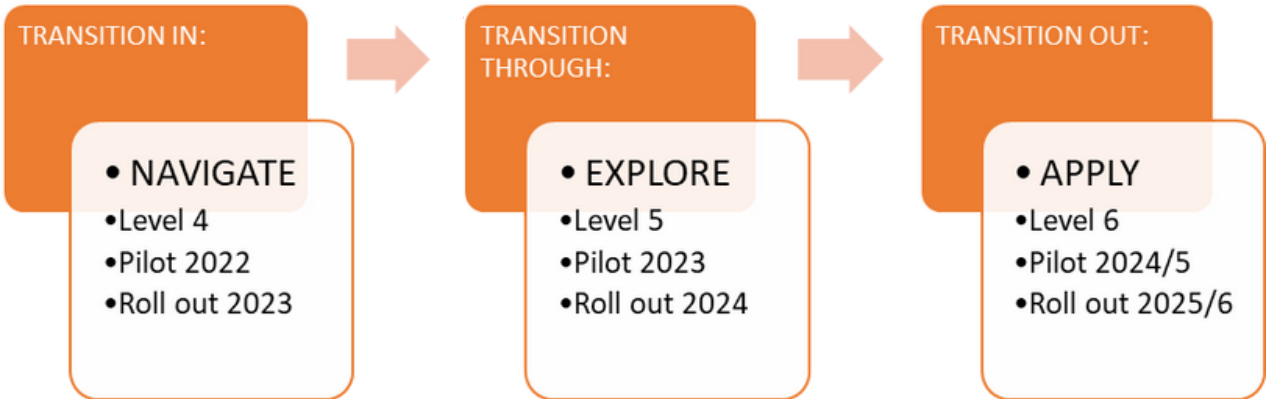


Figure 3: Kingston University Future Skills Framework

The Navigate Personal Development programme supports students to understand and articulate the value they bring to different professional contexts and opportunities, and to develop an understanding of who to articulate that value to. The Future Skills Graduate Attributes are the lens through which the students can articulate this self-awareness and confidence. Tailored workshops introduce these contextualised graduate attributes and show how they underpin course Learning Outcomes and summative assessments across level 4 study. This fully integrated approach with learning activities built into core modules, ensures that all undergraduates are reached in contrast to traditional bolt-on employability modules.

Whilst this project is still very much in its early stages, a pilot programme of activity was developed with Early Adopters in 2022. A few of these examples and the different approaches to embedding skills and employability across different subject areas are outlined below:

- In a shared first year Life Sciences module prototype, support for different areas of personal and professional development, and academic skills, was delivered through thematic 'chapters' spread across the full year of study. These chapters drew on material covered in lectures and seminars, and the general context of a life sciences student. Learning support was provided through Personal Tutor meetings and themed peer-support groups, where groupwork is enacted. These themes, activities, and groupwork in a peer-support group setting were all then reflected upon in a Reflective Log and Personal Development Plan (PDP). These assessments aligned to each 'chapter' of the module. In this way, the narrative of professional, personal, and academic development was woven explicitly throughout the module. The module leader, Nigel Page, School Director of Learning and Teaching, suggested that while there may well be a strong correlation between graduate outcomes and personal development, personal development is often approached as a 'bolt-on' that students are expected to pick up independently and with little support.

- In a shared Geography, Geology & the Environment module prototype, the cohort was taken off campus on a fieldwork exercise. Students were put into groups and tasked with activities and prompts that were derived from actual fieldwork students may experience in their professional lives. To support this trip, they also attended workshops on effective group working and reflective sessions afterwards to support the articulation of what it is they learned on the trip. This was then supported by a reflective report that students submitted with prompts around how they approached the activities, what they learned about the subject, and what they learned about themselves and their skills/attributes.

- In the Music Technology module prototype, students had two assessments that supported their personal and skills development. Firstly, students submitted a written Personal Development Plan, with three main sections: "Who Am I", "Where do I want to go" and "How will I get there" - each with a series of questions or writing prompts to support reflection and future planning. This assessment was supported by personal and professional development workshops, as well as conversations with their Personal Tutors. It was also supported by a longer-term project they were tasked with during the module using Design Thinking to explore different communities and challenges in the Music Industry. Academic staff taught them the Double Diamond methodology (A design and innovation process model popularised by the British Design Council in 2005) in the third Navigate Workshop, which allowed students to understand how to use the methodology for their research. This required them to research a community in the music industry, identify a challenge they may face, and propose a solution for this challenge. These types of activities helped develop empathy and a questioning mindset (in addition to other graduate attributes), but also began to cultivate commercial awareness by studying real-world examples so students could start to see different paths forward for themselves, potentially supporting their ability to engage with the second section of their PDP around where they want to go with their future careers. They were developing in tandem both a wider understanding of their professional opportunities, as well as their own awareness of self (and their values) in the contexts of different professional communities.

Following the pilot modules conducted by the Early Adopters, the Navigate Personal Development Programme has evolved into a series of three 2-hour workshops entitled 'Understanding Each Other', 'Understanding Yourself' and 'Understanding Your Future', which are now embedded into the curriculum in over 30 different degree courses across the University, reaching over 1,000 students in the pilot year. Topics explored through the Programme include: Meeting New People; Strengths and Weaknesses; Building Confidence; Values and Motivations; Imagined Futures; Design Thinking; and signposting to support services. The Programme is flexible, allowing academic staff the opportunity to tailor delivery to suit their individual discipline area and student cohort. For example, in some courses the Navigate programme was embedded alongside the Personal Tutor (PT) system. This provided PTs greater insight into their students, allowing them to follow up on themes explored in the workshops to develop stronger learning communities. In other courses, the workshops were integrated with more in-depth exploration of salient issues including sustainability and anti-racism, aligning with other institutional strategies or initiatives.

The Future:

An indication of Kingston University's success with these initiatives was their award of Best Faculty Programme for the Navigate Programme at the Global Careers Services Summit in 2022. The momentum gained from these pilot initiatives with Early Adopters and the positive feedback they received from module leaders, students and employers has led to the further expansion of the programme. The current focus is on the remaining two phases of student transition and the future skills framework (as shown in Figure 3). A level 5 prototype for the Explore phase commences in September 2023, with implementation across all courses from September 2024. The Level 6, Apply phase, transitioning out initiatives will be developed over the next couple of years and will complete the programme. As students progress, they will be able to personalise their own learning, identifying the skills they already have and those they want to develop.

REFLECTION AND NEXT STEPS

The Employability Healthcheck model provides a partnership approach to establishing baseline employability activity, engaging with key stakeholders, and producing a set of practical recommendations. By acting as a critical friend, Gradcore highlights what is currently working for a university, and what needs change and investment to enable them to achieve their institutional objectives in relation to employability. By consulting with graduate employers and utilising current LMI, the EHM report and recommendations it gives rise to, hold credibility and traction with HEI staff, students, and graduates.

Shifts in the employability landscape have resulted in changes at the level of individual HEIs, including a move from bolt-on employability activities to those integrated within the curriculum. To maximise impact across all students, including the most disadvantaged, new course content is required to be credit-bearing and, therefore, essential for student progression to the next level of study. The EMH provides the evidence base and solutions-based recommendations to secure senior leadership buy-in, commitment to change from both academic and professional services colleagues, and the business case for future investment.

The next steps in the evolution of the EHM include evaluation through utilising the theory of change framework. This will enable us to understand the full impact of the model by outlining causal linkages in an initiative, clearly establishing its shorter-term, intermediate, and longer-term outcomes.

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Supporting documents

Please find further contextual resources for the Employability Healthcheck Model below:

Gradcore
About Us:
https://gradcore.co.uk
Case Studies:
https://gradcore.co.uk/case-studies

Bath Spa University
Education Strategy:
https://www.bathspa.ac.uk/media/1188b-Education-Strategy-final.pdf

Kingston University

Future Skills campaign and report:
https://www.kingston.ac.uk/aboutkingstonuniversity/future-skills/
Graduate Outcomes and personal Development – a peer supported approach:
https://www.advance-he.ac.uk/news-and-views/rethinking-personal-development-peer-supported-approach
The Centre for Graduate Success launched by Kingston University and the Mohn Westlake Foundation:
Kingston University and The Mohn Westlake Foundation establish new graduate success centre to ensure all students have equal opportunity to thrive in careers - News - Kingston University London

Practera

Experiential Learning:
https://practera.com

RISE

A business support initiative building a bridge between graduates and SMEs in the Sheffield City Region, delivered by Gradcore, the University of Sheffield, Sheffield Hallam University and Sheffield City Council:
https://gradcore.co.uk/case-studies/university-of-sheffield

Sheffield Hallam University

Rethinking the employability model:
https://gradcore.co.uk/case-studies/sheffield-hallam-university

Theory of Change

Centre for Transforming Access and Student Outcomes in Higher Education (TASO) resources for developing a Theory of Change framework:
https://taso.org.uk/evidence/evaluation-guidance-resources/toc/

ESADE LAW SCHOOL: WORKING HOLISTICALLY TO ENSURE EXCELLENCE IN GRADUATE EMPLOYABILITY

EDUARDO BERCHÉ MORENO

JORGE CASTINEIRA

MARIA OBIOLS

MIRIAM CLOTA

ESADE LAW SCHOOL

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EPD Feedback Loop

CONTRIBUTORS

EDUARDO BERCHÉ MORENO

Esade Law School Dean

Email : eduardo.berche@esade.edu

JORGE CASTINEIRA

appointed Esade Law School Dean and Associate Professor

Email: jorge.castineira@esade.edu

MIRIAM CLOTA

Project Manager Esade Law School

Email: miriam.clota@esade.edu

MARIA OBIOLS

International Career Services and Human Resources Director

Email: maria.obiols@esade.edu

SUMMARY

ESADE programs are designed to provide holistic graduate employability for all students. The Professional Careers Service (SCP) and Quality Unit at ESADE Law School work closely together to ensure the workplace relevance of the Law curriculum and assist in the overall employability of its students. The SCP helps students set personalized goals and provides tools and activities (including mandatory internships) to increase the employability of individual students. In parallel, the Quality Unit ensures that the curriculum is current and relevant to the changing legal market. Evidence from a range of different evaluation sources, including post-activity questionnaires and regular meetings with class and club student representatives, show that this holistic approach to employability has real impact on the high salary and employment rates of ESADE Law graduates.

CONTEXT

ESADE Law School is a prestigious law school located in the metropolitan area of Barcelona in Spain. It is part of the ESADE Business and Law School, which is a private academic institution affiliated with Ramon Llull University. ESADE Law School is known for its rigorous academic programs and its focus on international and comparative law. The school offers a wide variety of degree programs, including a Bachelor of Laws (LLB) program, a Master of Laws (LLM) program, and a Doctorate in Law (PhD) program.

ESADE ranks highly in skills and employability in several of the most prestigious national and international rankings. These include, #1 - Innovative Education (Iberoamérica) - El Economista EEMM; #3 - New skills & Learning Worldwide (new ways of thinking) - Financial Times Executive Education; #2 - Salary Increase (Europe) - Financial Times MBA; and, #5 – Employability Worldwide – QS MSc Marketing (see Appendix I for more details).

Additionally, ESADE Law School has been accredited with progress towards excellence by the Educational Agency of the Catalonian Government (AQU). This accreditation was based on, among other factors, the high rates of employment of the students of ESADE Law School. At the international level, ESADE Business School obtained its first accreditation in 1999. To date, ESADE has obtained accreditation from the AACSB, EQUIS and AMBA.

One of the main features of ESADE Law School is its emphasis on experiential learning. The School offers a variety of programs that allow students to gain practical experience by working with real clients and cases. ESADE Law School also has a strong international focus, and many of its programs include opportunities for students to study abroad or participate in international moot court competitions. ESADE emphasises practical training and preparing graduates for a rapidly changing legal market. In recognition of this work, the School has received an 'excellent' rating from the regional authorities. ESADE has strict selection criteria based on entry tariff (which is the standard criteria of selection in Spain) alongside a high standard of English proficiency, and successfully passing an interview with the faculty. Moreover, all students need to complete an internship at a law or law-related firm as part of their studies. Our programs are designed with input from a professional council composed of top legal professionals from both public and private sector organisations and law firms. These employer advisors are a key source of advice for ESADE Law School and play a major role in course and programme development.

A key factor in our ability to review and update our programs fairly frequently and responsively is the relatively small size of the School. In fact, ESADE is a comparatively small and agile institution in comparison to other law schools in Catalonia. As a result, the School has been able to adopt a holistic approach to the inclusion of employability in every one of its programs. From the outset of their studies at ESADE, students are faced with complex cases drawing on real-life examples. In addition, all students have access to the Careers Service (SCP) throughout their studies. The Career Services team is part of an integrated ecosystem which includes the main stakeholders of the organization, including academics, admissions, and students. This integration, combined with a specialized and personalized service, allows for proactive, tailored support of our future graduates and ensures extraordinary synergies across all departments.

Interestingly, few students at ESADE need to use the Careers Service to source employment post-graduation as most of the students acquire a job independently immediately on graduation from the program. This is partly possible because of the Careers Service support that students can access and can take advantage of throughout their program. In fact, in their final year of study 75%-90% of students will have applied to job offers published through the Careers Portal and will have participated in an average of 3 advising sessions with a Careers Adviser to discuss their career aspirations.

Careers-focused advising and orientation sessions are presented in two different formulations and run throughout our programs. Firstly, we hold general advising sessions aimed at generic careers coaching. These sessions support careers topics of more general interest. Secondly, we run specialized advising sessions tailored by economic sector. This provides a tailored service to address students' career concerns and market demands. These sessions are arranged in collaboration with the Professional Committee of the School, which includes representatives from law firms, Public Notaries and legal servants, and from the in-house legal departments of companies.

By the end of the 4 years of the degree, students will have completed comprehensive work-based training that will allow them to enter a range of professions directly or indirectly related to the legal field. This professional training relies upon the completion of external internships, which provide essential professional skills training and legal experience. The internships require the completion of a range of training activities in an office, company, organization or institution for a minimum of 100 hours.

The main types of skills and knowledge acquired by the students during their internships are outlined below:

- Preparation of documentation for presentations.
- Acquiring an ability to critically analyse the legal system.
- Adequately interpret the legal rules applicable to the different reviews and cases presented.
- Acquiring the ability to create and structure norms in the face of different factual assumptions.
- Improvement in the ability to read, interpret and write legal texts.
- Search, select and analyse information from different legal sources.
- Improvement of legal argumentation techniques.
- Identify and understand the range of pathways available across the legal profession and develop specialist knowledge in their own chosen career pathway.

Each student's internship tutor or supervisor will adapt their individual workplace tasks to ensure the achievement of these key competencies within their specific organisational context.

METHODOLOGY AND IMPLEMENTATION

The activities outlined above were all developed by the Careers Service, and the Program Management and Quality Units (QU) of ESADE Law School, in conjunction with student associations. These activities are just one part of a comprehensive employability program designed to prepare Law students for the job market and ensure that they are equipped with the skills and knowledge they need to succeed in their careers. The program – our Professional Development Program (PDP - is based on a holistic approach that combines career guidance, counselling, training, and networking. These key activities are supported by robust quality assurance processes that ensure that the programs remain of high quality and meet the needs of the students and the job market.

The Professional Development Program (PDP) revolves around two fundamental axes. The first is self-awareness – aimed at supporting participants to better understand themselves, their motivations, values, and interests. The second is job market knowledge - supporting students to develop specialist knowledge of their particular career pathway and to develop the competencies required to enter it.

The process begins with the exit profile or learning objectives detailed in the program specification. This is the reference framework for the Professional Career Service (SCP) and for the students of each of the programs delivered by the SCP. In programs lasting one or two years, such as master's programs, the SCP contacts the students to start preparing their Curriculum Vitae (CV) as soon as the admissions process has been completed. At this early stage, the student is asked to fill in their preferences questionnaire in terms of future employment. In this questionnaire, they need to indicate their sectoral, functional, and geographical preferences. This questionnaire is then used to organize individually tailored training sessions on campus. The CV is also included in the Law School's promotional 'Curriculum Book' which is sent to all of the School's collaborating companies. This book helps promote the students and their professional experience to companies with the aim of helping them to secure employment at the end of their studies.

In contrast, for our degree program students, work with the Careers Service starts from their second year. At the beginning of this academic year, the Careers Service provides each Program Director with the following information designed to enhance their students' employability:

i. An overview of the careers tools that have been made available to the students. For example, their dedicated job portal, and the resource centre with resources designed to develop their skills as candidates, including the planning of group and individual activities.
ii. A detailed careers calendar which includes the options for a range of group activities. For example, skills seminars, market knowledge sessions, Assessment Centres, sector-specific training sessions, and Career Forums with companies.
iii. support activities for students. These session include general careers check-in sessions, mock interviews to help them master the selection process, optimization and adaptation of the CV for each type of company, and cover letters.

At the end of each academic year, the Careers Service works with every Program Management team to review the results of the previous year and propose improvements for the next academic year.

Placements and internships

From the beginning of the school year, the Careers Service starts group and individual activities with the students, which will last for the whole academic year. This includes several mandatory internship opportunities. The Careers Service maintains direct contact with national and international companies, to obtain internship opportunities and full-time job offers, which are then promoted among students through the ESADE job portal (see Figure 1):

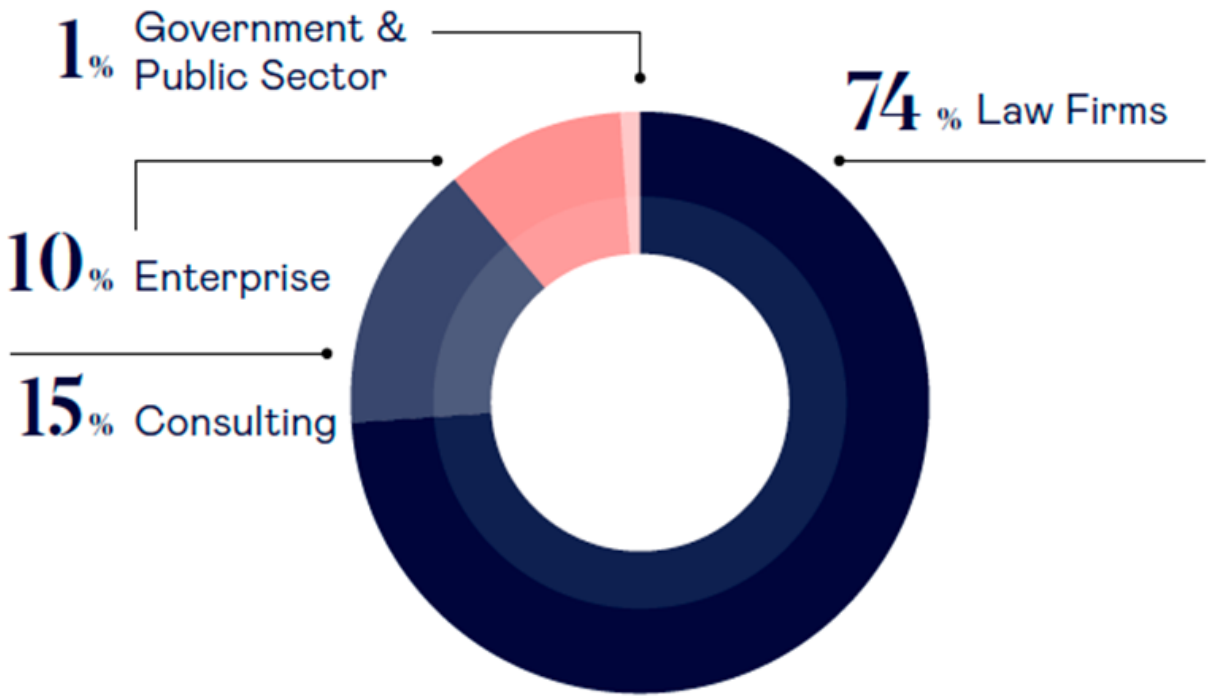

Figure 1: Placement of ESADE Master's degree in Law MUA by sector, 2022

The Careers Service is also responsible for managing internship agreements - both embedded and extra-curricular placements or internships - and full-time job offers. The Careers Service not only manages job offers and internships from companies, but even organizes the interviews with companies that result from them. Once the academic program is over, the Careers Service then monitors each student individually and sends them a questionnaire (Employment Form) to fill in. This questionnaire identifies their employment situation at the end of their studies. With this information, the Careers Service produces the final employability statistics for publication in our annual employment report[1]. For one year after graduation, the Careers Service provides job search support for those students who continue to look for work after completing their studies. ESADE Alumni also offer a specific 1-1 mentoring service for former students.

[1] Some additional information could be found here https://www.esade.edu/en/careers.

The internship mentioned above is mandatory for all students and provides the students with 4 ECTS credits. Students are monitored by two tutors - an academic tutor and a professional tutor. The academic tutor is always a professor of the faculty, and the professional tutor or workplace mentor is appointed by the company where the internship is to be carried out. The workplace mentor supervises the tasks performed by the student. These tutors will mentor the student for the duration of the internship and deal with any issues or queries that may arise. The tutors will also ensure that the tasks carried out by the student and the evaluation documentation required are submitted on time.

The final student evaluation is based on the assessment made by the academic tutor and within the Academic Report of External Internships, which is completed by the student themselves. In this report, which must be submitted at the end of the internship period, the students are asked to reflect on what they have learnt during their internship. The other half of the final evaluation depends on the professional tutor's assessment of the student's knowledge, engagement, learning capacity and adaptation during the internship.

Students are also provided with the opportunity to complete additional extra-curricular internships, which are worth 2 additional ECTS credits. Even though these additional internships are not mandatory, almost all students complete them.

ANALYSIS AND EVALUATION

The ESADE Law School Professional Development Program is designed to ensure the holistic embedding of employability across all programs and delivered to all students. Whilst there is currently no formal evaluation of the program itself, there is substantial evidence that the program has a significant impact on the students' career development, reflected in the high salaries and employment rates enjoyed by ESADE Law graduates.

The program has a strong reputation for providing students with excellent career prospects upon graduation. According to recent statistics, 91% of students who take the bar exam find work after completing their studies (ESADE Bachelors Degree in Law, 2020). This is testament to the quality of education that students receive at ESADE, as well as to the School's commitment to preparing students for successful careers in the legal field. One of the key factors that contributes to ESADE's success in placing graduates in desirable jobs is the support provided by the School's career services team. In fact, 90% of students find work thanks to the professionals at ESADE Careers, who provide guidance and assistance throughout the job search process (ESADE Bachelor's Degree in Law, 2020). This includes access to job postings, networking opportunities, and other resources designed to help students secure their desired job. The starting salary for ESADE Law School graduates is also impressive, with an average of €31,600 in 2020 (ESADE Bachelor's Degree in Law, 2020). This is a reflection of the high demand for talented legal professionals, as well as the skills and knowledge that ESADE students acquire during their time at the School. For those interested in pursuing a legal career within the civil service, such as a Judge, Notary, or Diplomat, the median amount of time in which students obtained a position was only 2-3 years - significantly lower than the national average of over 4 years (ESADE Bachelor's Degree in Law, 2020). This is a testament to the strength of ESADE's legal program and the success of its graduates in securing highly sought-after positions in the legal field.

The program is designed with input from a professional council composed of top legal professionals from both public and private sectors, which ensures that the curriculum is current and relevant to the changing legal market. As outlined in this case study, the SCP provides various tools and activities to increase the employability of students, including job portals, resource centres, skills seminars, market knowledge sessions, Assessment Centres, sector-specific training sessions, and Career Forums with companies. The SCP also maintains direct contact with national and international companies, to obtain internship opportunities and full-time job offers, which are promoted among students through the ESADE job portal. The SCP provides job search support for one year for students who continue to look for work after completing their studies.

REFLECTION AND NEXT STEPS

This case study provides a brief insight into the program implemented by the Professional Careers Service and the Quality Unit of ESADE Law school and its impact on the employability of their students. The program's focus on activities such as entry-stage CV formulation and career preference questionnaires, the organization of training sessions on campus, the effective communication of careers tools, and the development of direct contact with national and international companies, to obtain internship opportunities and full-time job offers, all contribute to the School's success. This focus on practical professional training ensures that our graduates remain employable in a rapidly changing legal market.

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APPENDIX I

ESADE ranks highly in skills and employability in several of the most prestigious national and international rankings. The most employability relevant and current positions include the following:

Educational experience and innovation

- #1 - Innovative Education (Iberoamérica) - El Economista EEMM
- #3 - Educational Experience (Europe) - The Economist MBA
- #3 - New skills & Learning Worldwide (new ways of thinking) - Financial Times Executive Education
- #5 - International Course Experience - Financial Times MBA
- QS 5 stars for Online learning
- #17th of the world Business & Management Studies / #8 Europa - QS World University Ranking

Pedagogical quality

- #4 - Best Executive Education Worldwide - Financial Times Executive Education
- #8 – Best EMBA Europe – QS#10 – Best MBA in Europe - Financial Times
- #2nd – Spanish faculty with best performing outcome– CyD
- #17 best European school– Financial Times

Diversity

- #3 – Diversity Worldwide – QS EMBA (Jun 22)
- #3 - International Students - Financial Times MIM
- #9 - Female faculty (Non-US) - Financial Times MBA
- #3 - Student/Faculty diversity (Europe) - The Economist MBA

Startup Ecosystem

- #1 - Entrepreneurship Ecosystem Size (m2) (Europe) - Poets&Quants
- #3 - Best MBA for Entrepreneurs Worldwide - Poets&Quants
- #2 - Best MBA for Entrepreneurial teaching (Non - US) - Financial Times MBA

Professional development

- #2 - Salary Increase (Europe) - Financial Times MBA
- #3 – International Course Experience Worldwide – Global Mindset – Financial Times MBA
- #3- Potential to network (Europe) - The Economist MBA
- #5 – Employability Worldwide – QS MSc Marketing

AVOIDING A BOLT-ON APPROACH: LINKING EMPLOYABILITY AND SUSTAINABILITY IN THE CURRICULUM

Collaborative Award for Teaching Excellence 2023

DR LEE J. HIGHAM, HELEN ATKINSON, DR ELISA LOPEZ-CAPEL, JULIA ROBINSON, ABBY FRENCH, HELEN ADAMSON, DR ANDREW BEARD

THE SCHOOL OF NATURAL AND ENVIRONMENTAL SCIENCES

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EPD Feedback Loop

CONTRIBUTORS

DR LEE J. HIGHAM

School of Natural and Environmental Sciences, Newcastle University, Newcastle upon Tyne, UK
lee.higham@ncl.ac.uk

HELEN ATKINSON

Helen.atkinson@sunderland.ac.uk

DR ELISA LOPEZ-CAPEL

elisa.lopez-capel@newcastle.ac.uk

ABBY FRENCH

Abby.French@newcastle.ac.uk

JULIA ROBINSON

julia.robinson@newcastle.ac.uk

HELEN ADAMSON

helen.adamson@newcastle.ac.uk

DR ANDREW BEARD

andrew.beard@newcastle.ac.uk

And all members of the SNES Employability Working Group

EEWG: 8 Champions with responsibilities for the following core areas of activity: Digital and Information Literacy, Employability, Enterprise, Industry, Placements, Skills Modules, Students and Alumni, Student Mobility.

SUMMARY

Studying for an academic qualification at university and working in 'the real world' can sometimes be perceived as two very different experiences and it is commonly understood that a high level of subject-specific knowledge does not always translate into an ability to solve problems in industry.

The School of Natural and Environmental Sciences (SNES) Employability and Enterprise Working Group (EEWG) at Newcastle University was created in 2018 to foster collaborative working approaches between academic staff from across the different subject specialisms within the School. Importantly, this working group also includes key colleagues from the Library, the International Office and the Careers Service, in addition to several industrial partners. The establishment of this working group was designed to enhance employability and enterprise provision across the School. It represents a relatively simple and transferable model that can be applied to other schools, units and universities wishing to coordinate and stimulate a more systematic approach to employability provision – provision which can otherwise be reliant on disconnected ad hoc initiatives. One of the core objectives of this working group is to enhance our students' employability and future-proof their skills. We aim to achieve this primarily via a focus on 'real world' problem solving.

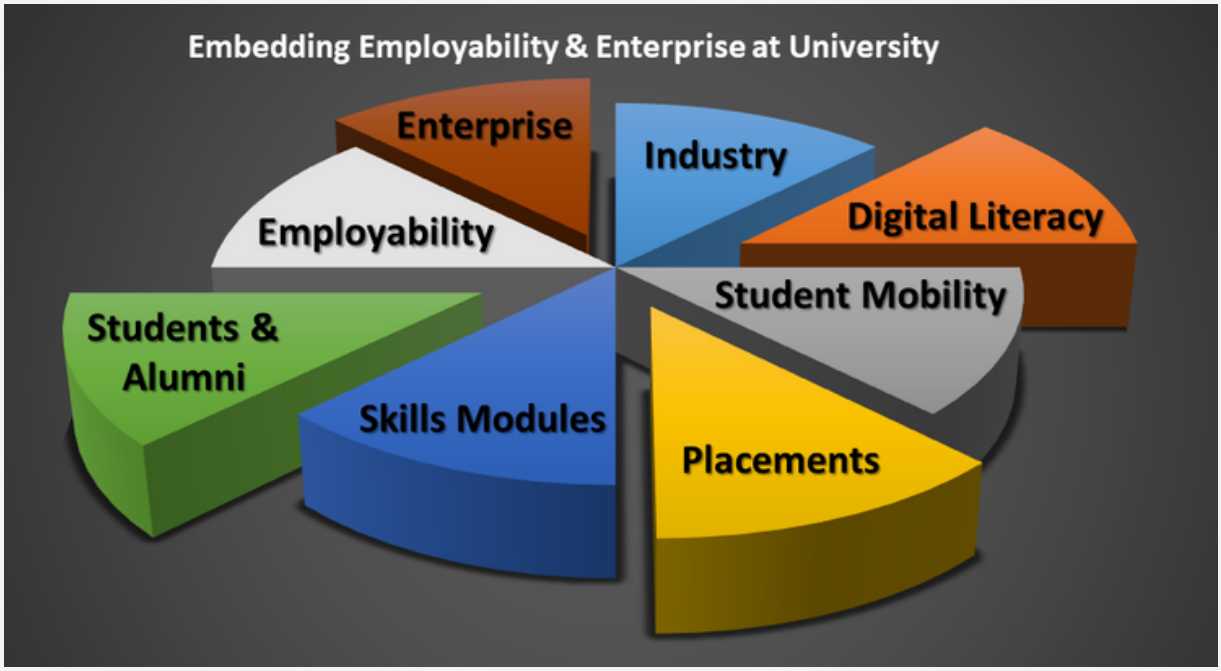
The first important impact we had was the collaborative design of our Stage 2 Sustainable Solutions ACE2077 module. This module involves businesses pitching industrial challenges to cross-disciplinary teams of students from across the School. The challenges relate to the UN's Sustainable Development Goals. The module's success led to a subsequent second key output - the creation of a related, compulsory Chemistry Stage 3 module. Within this module students work with five industrial partners on broader 'Dragon's Den' type challenges. These challenges range from understanding intellectual property, to investigating next-generation pharmaceuticals, and even learning to put a valuation on a recently created University nanotechnology spin-out company. The third significant impact to have emerged from the Working Group to date has been the creation of our SNES Employability and Skills Canvas site. This site is used by the EEWG to promote specially tailored internships, placements and volunteering activities to our SNES students and incorporates a live graduate jobs board.

Newcastle University

CONTEXT

Having led Chemistry's Study Abroad and Industrial Training Year programmes, our School of Natural and Environmental Sciences' (SNES) current Academic Lead for Employability and Enterprise had previously worked closely with the University's International Office and Careers Service. During the course of this relationship, both services had difficulties around getting their initiatives into Schools and securing student and staff 'buy-in'. At the same time, SNES was working with employers to increase the number of placement opportunities available to students. These employers were also encountering difficulties in identifying the best people within the University to talk to about their job opportunities and their potential input to university curricula. The Library was also finding it difficult to reach students with their digital and information skills training, as were student enterprise staff looking to promote student entrepreneurship. It quickly became clear that a whole range of exceptional opportunities were available to students, but partly due to their ad hoc nature and partly due to unfocused modes of communication, they attracted only the keenest students. As a result, these opportunities remained off the radar for the student cohort that would benefit from them the most.

On reflection, it was clear that the Library, Careers Service, International Office and our external industry partners faced similar problems and that by tackling and resolving them in collaboration, we could make significant gains across a range of key university objectives. These included expanding employability, developing transferable skills, enhancing student mobility and promoting industrial interactions. To achieve this, we required a vehicle that would bring these experts from different areas together to integrate and collaborate and this is how the SNES Employability and Enterprise Working Group (EEWG) came into being.



CONTEXT

The SNES EEWG represents a unique and highly collaborative way of working, which brings together experts from across the University's academic Schools, Careers Service, International Office, Library and Industry partners. The aim of the working group is to develop and promote employability and entrepreneurial initiatives which bridge the current skills gap and engender better graduate prospects for our students. In particular, we are concerned with equipping students with the problem-solving skills required for the industries of the future. Our initiatives are informed and strengthened by a range of reliable employability data sources and metrics. These include the Graduate Outcomes survey, Heidi Plus analytics, the Institute of Student Employers regular labour market and employer reports, and our close collaboration with professional bodies such as the Royal Society of Chemistry. Other key partners include the industrial umbrella organisations NEPIC, BioNow, and the Fresh Produce Consortium and Government Policy stakeholders, such as the North East Local Enterprise Partnership, all of which allows us to feed into both local and national debates.

METHODOLOGY & IMPLEMENTATION

Importantly, all of the SNES subject areas (agricultural, biological and marine, chemical and earth, environmental and social sciences) were externally reviewed in 2019 as part of the Faculty review of programmes. This review was conducted by internationally recognised peers and an Independent Chair from the University's School of Computing Science. This review provided the information and evidence that the EEWG needed to influence subsequent programme review and restructuring. We did this by creating new employability-focused modules and activities which ensure that no student graduates without having engaged with industry.

Our process begins with our Employability Champion (SNES Careers Service Consultant) and Academic Lead for Employability and Enterprise for the School. These colleagues draw up an annual Action Plan for the School, highlighting student engagement with Careers Service activities such as 1:1 career consultations, University careers fairs and placement events, as well as identifying any gaps in skills and employability provision with respect to modules across the different year groups. These action plans also include important Graduate Outcomes data for the School, reporting on graduate level employment across the different graduate labour markets, student progression to further study, and performance comparisons with our Russell Group peers. The plans also cover levels of student engagement, employability provision embedded within modules, and graduate destinations. This collection of information helps us to identify areas of best practice and, more importantly, gaps in our programmes. This is set against the background knowledge of how well our graduates perform in the labour market and the industries they are most likely to transition to.

Agriculture, Food & Rural Development - Employability & Enterprise Action Plan

Action	Owner	Due Date	Status
Ensure former AFRD Should I do a Placement Year evening opened up to all Stage 2s in SNES (best practice and consistent messaging). Recruit 4-5 students returning from placement/year abroad with help of academic colleagues.	Placements Champion	October	Timetabled for AFRD, Biology and Marine Sciences; Chemistry next
Newcastle University Recruitment Fair will take place Monday-Wednesday October. DPDs to be informed of fair with view to promoting to students. • Business & Management Day, October, Civic Centre / Science & Engineering Day, October, Civic Centre	Skills Champion	October	
Environmental/Ecological Science careers day is being organised by Skills Module Champion for November. Employability Champion to provide support on day running speed interviewing, CV checks with employers.	Skills Module Champion	November	
Hold initial discussions to run Enterprise Challenge for students in SNES for academic year aiming to unite students from various SNES disciplines to work together to deliver a solution to a business case/challenge	Academic Lead	December	Discussions in progress

Strategic Employability & Enterprise Priorities:

- Increase visibility of work experience opportunities to students (esp. placements and Study Abroad for Stage 2s).
- Share best practice in relation to placements with colleagues in SNES. Ensure former AFRD specific *Should I do a Placement Year*? event is opened-up to all Stage 2s in SNES.

Latest news and focus areas this semester:

- New Academic Lead for Employability & Enterprise for SNES appointed (Chemistry).
- Task & Finish Group initiated on UG skills teaching across SNES - led by Skills Champion
- A new PGT Professional Analytical Skills module in SNES will launch - NES8004
- SNES formed School-wide Industrial Advisory Board.
- Careers Service Graduate Skills Framework currently being redesigned launch Semester 2

Communications: How careers information is to be communicated to students (e.g. emails through School, via BB careers community, blogs, etc.):

- Ad hoc communications aimed at students (events, targeted vacancies etc.) to be emailed to DPDs for distribution to students
- Careers Service posters to be displayed in the Agriculture Building to promote events
- Core module lecturers (for lecture shout out requests): Stage 1 and 2: Skills Module Lead, Stage 3 DPDs
- SNES Canvas community is also available (via snes.learning.teaching) for posting relevant information

1/15 in the 'Graduate Prospects' rankings for The Times Good University Guide (Agriculture and Forestry)

2

This birds-eye view paves the way for the next level of discussion with a wide array of service delivery colleagues. These teams include our Champions for Digital and Information Literacy (ie. the Faculty Liaison Librarian), Skills Modules staff (ie. academics with experience of developing skills modules), Study Abroad and Placements staff (ie. International Office Student Mobility Manager and University Placements Manager) and Industry representation (ie. Faculty Learning and Partnerships Manager). Which teams we speak to depends on the patterns of student behaviour that have been identified and where students are and are not engaging. We know for instance that a larger percentage of chemistry and biology students go on to further study compared to other subject areas in the School. Similarly, we know which programmes have a placement component and, therefore, already engage with industry. We also know which students engage well with our 1:1 Careers Service consultations (eg. Zoology). These champions, which are external to the School, can also bring the best practice they have observed from other subject areas within the University.

One initiative that resulted from these discussions, was a student-centred 'Should I do a Placement?' Question Time panel event. During this event, returning Year 4 placement students would encourage Year 2 students to go out on placement themselves by answering their questions and providing reassurance about some of their most common worries, such as leaving their friends at university and the world of work. By drawing on our graduate destination metrics, we know that these types of placement initiatives enhance student employability. For example, all of our chemistry students who graduated as the 20/21 cohort and undertook an industrial or study abroad placement are currently in graduate level employment. The inherent value of these initiatives is further evidenced by our students' feedback:

"In my opinion,I think that an industrial placement is the most beneficial thing a student can do during their degree" Alex, MChem Hons Chemistry with Industrial Training Year.

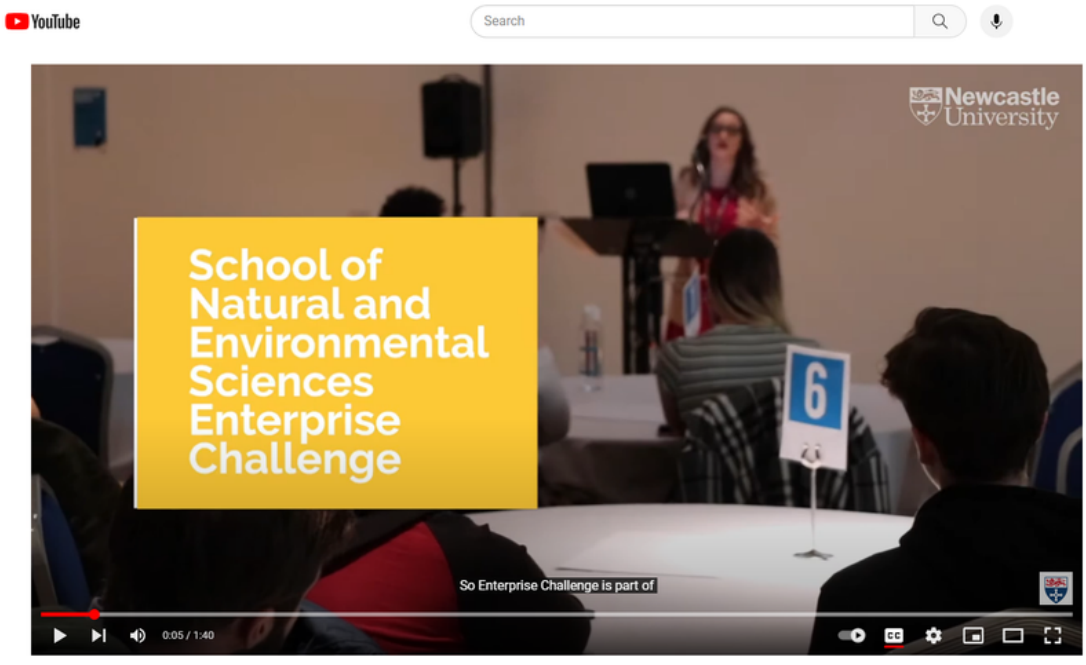
''Starting my brewery straight out of graduation wouldn't have been possible without working with both the Enterprise team and Chemistry department. Getting that support while on placement allowed me to switch courses and enter the Founderships programme while still graduating in Chemistry, rather than simply terminating my studies." Reece, BSc Chemistry with Study Abroad.

In recognition of this positive feedback from students and our understanding of the value of work-related learning, we were keen to ensure that all of our students could gain from a similar experience, even those students not fortunate enough to secure an industrial placement. As a result, our SNES Enterprise Champion (a dedicated Enterprise Advisor from NU Careers Service) worked with the Employability Champion and the SNES Academic Lead for Employability and Enterpise to create an Enterprise Challenge event in collaboration with AkzoNobel. During this day-long event, students worked in multidisciplinary teams on a real-world enterprise problem-solving task. The students were mentored throughout the day by employer representatives, School academics, the Careers Service and a number of SNES EEWG Champions. The event culminated in a Dragon's Den type pitch to all attendees followed by the award of prizes.

"I'd never really experienced the power of teamwork like I did today, it was absolutely brilliant. Everyone worked together and we ended up coming-up with ideas we didn't even know existed and meeting people in industry which I'd not really had a lot of experience of before" Sophia, Applied Plant Science.

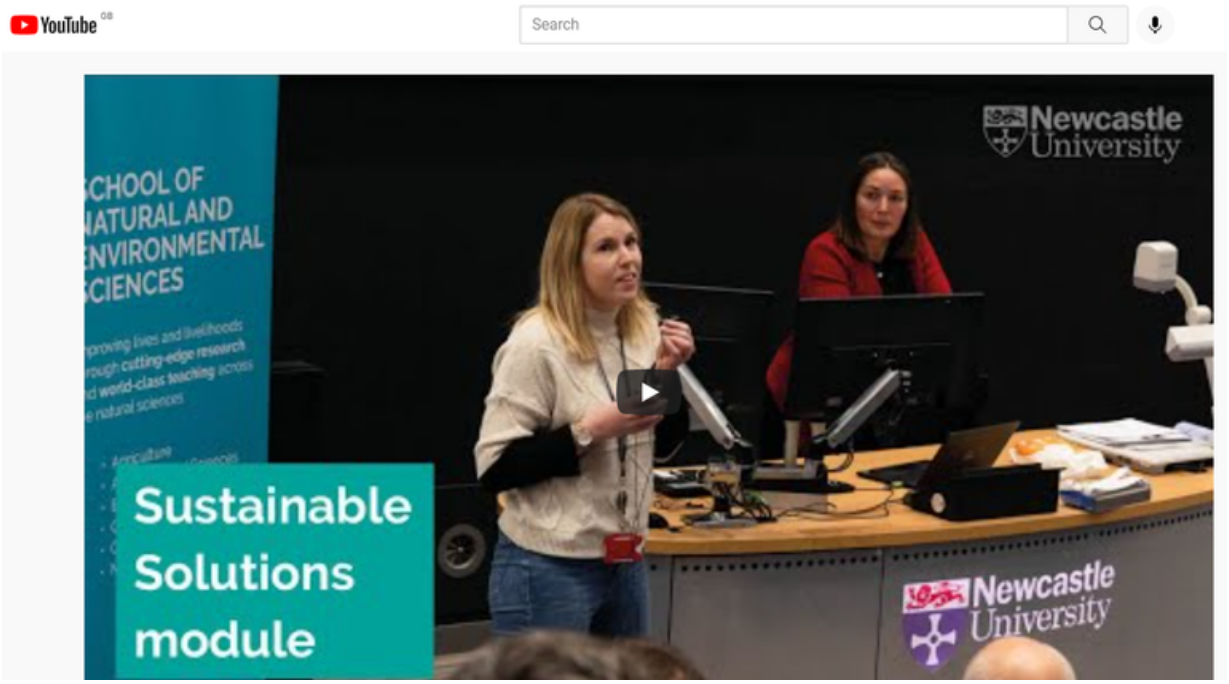
"This activity presents a real-world challenge from a real world company and gives students other skillsets that will help in diversifying their jobs but also get them on that career ladder", AkzoNobel.

Find out more about our Enterprise Challenge



Following the success of this optional one-day event, the Sustainable Solutions semester-long module (ACE2077) was created as a collaboration between academics and professional services of the EEWG and industry. This module helps ensure that the majority of SNES students now benefit from working with a range of companies on real world problem solving. It focuses on wider societal and environmental impact issues aligned to the UN's Sustainable Development Goals. Again, the students work in multidisciplinary teams to research the challenge topic, engaging in active learning to deliver potential solutions in the form of a written report and short video presentation. The module culminates in a 'Grand Finale' event attended by the companies themselves. During this event the winning student team is announced and informal networking between companies and students takes place. The module is currently delivered to over 200 Year 2 students from the agricultural, chemical, environmental and earth and social sciences.

Find out more about our Sustainable Solutions Module



It is the role of our Academic Lead, Industry, Employability, Skills Modules and Placements Champions to help build the necessary company relationships and bring industry on to campus. Sectors represented range from construction to food manufacture, environmental management to chemicals, and even overseas development agencies. These organisations then set the students real sustainability challenges relevant to their context. External partners are drawn from a range of existing University relationships, our networks of alumni and the School's Industrial Advisory Board and being proactive in meeting new potential stakeholders by participating in events organised by external umbrella organisations.. These interactions are an opportunity for us to canvas opinion amongst the different representatives in order to identify current skills gaps in a given sector and facilitate discussion on how we might address these gaps through changes to the curriculum. We also discuss new employability initiatives and modules and promote the offering of placements and internships.

ANALYSIS AND EVALUATION

Whilst it is too early to provide a detailed evaluation of the effectiveness of this embedded approach, there are already emerging indicators pointing to a positive impact. For example, we have seen an uplift in the number of students requesting a placement from 30 in 2019 to 83 in 2022. Similarly, we have seen an increase in students booking 1:1 careers appointments from 45 to 100 in the year following the inception of the Sustainable Solutions module. A few examples of positive student responses to this new module are provided below:

"At the start of this module I was unsure how it would be useful but much of my day-long GSK placement interview focused on these ideas – it was the best experience and I've been offered the role" Faye, Chemistry with Industrial Training Year.

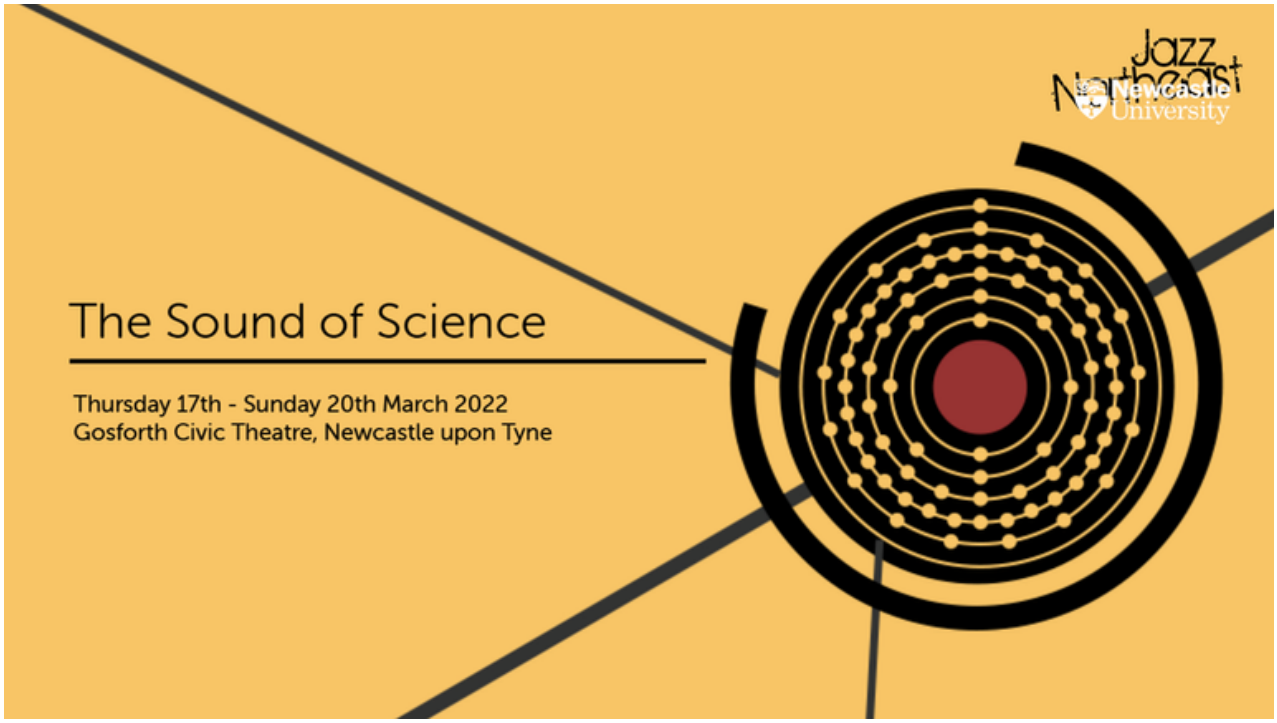
The module also provides an opportunity to incentivise disengaged students:

"Following the module, I booked a meeting with the Employability Champion to talk about my career direction and summer placements. Beforehand, I was still unsure on which areas I should be researching and planning to go into. All of a sudden, I have an aim and a direction and thoroughly believe this module has been the catalyst for this." ACE2077 student.

The ACE2077 Sustainable Solutions module was presented as part of our paper 'Avoiding a 'bolt-on' approach: Linking employability and sustainability in the curriculum' at the Future of Work and Skills Conference in 2022 and a paper entitled 'The Pizza Model: Working at the Academic and Industry Interface to Improve Graduate Employability' was given by the Academic Lead for Employability and Enterprise at the Horizons in Stem Higher Education Conference, 2023.

Another wider spin-off of this early success has been the creation of the Year 3 'Professional Development and Employability Skills for Chemists' module (CHY3012) in 2022. This compulsory module brings in five different companies each year to set and assess Dragon's Den style challenges of relevance to industry. This year's 'Dragons' consisted of a global pharmaceutical giant, a university spin-out SME, a patent law firm, a dairy nutrition business and a rapidly expanding local pharmaceutical company. Typically, these employer contacts are also alumni.

As a result of the collaborative nature of the EEWG, these modules and activities are never run in isolation from each other. Rather the companies interested in engaging with us are offered the choice of providing sustainability challenges, which span the School's different scientific subject areas in Year 2 on module ACE2077, or alternatively they can offer more focused chemistry-specific projects in Stage 3 on CHY3012. This is also the stage when employers start looking for potential graduate recruits. Other smaller scale pilots and projects - such as the Enterprise Challenge - are also options for companies to get involved with; and finally, companies are encouraged to consider offering student placements and internships.



A third key output of the EEWG is the SNES Skills and Employability Canvas website. This website has had over 242k views since its launch in September 2021 - with 37% of students in the School accessing the community in its first week alone. Our EEWG VLE also provides the opportunity for colleagues and students to see themselves as partners in the process by providing regular opportunities for them to shape this community and influence the wider activities of the Working Group. For instance, one colleague created a video on the University farm showing how the different subjects contained within SNES are all related. It also highlighted the existence of graduate jobs from sectors that the students might not be familiar with. Another EEWG colleague worked alongside two industrial placement students as panellists at the Sound of Science Jazz Festival, which aimed to make connections between musicians and student scientists.

The EEWG's Academic Lead for Employability and Enterprise is also a member of BioNow's Industry Engagement Sub-Group which 'aims to create an industry narrative to influence Higher Education provision on the importance of academic and vocational skills required by industry'. This sub-group was influential in helping the EEWG to shape their 2022 objectives of 30 new industrial placements and 100 'speed-dating' industry/student interactions. The EEWG's Industry Champion is similarly involved in the North East of England Process Industry Cluster, NEPIC.

"Your working groups sounds really amazing – I've never come across anything like that before, but I found it very inspiring. You've managed to link new technical skills (digital, sustainability), transferrable skills and industrial/international experiences into one integrated strategy" Royal Society of Chemistry's Head of Research and Innovation

REFLECTION AND NEXT STEPS

Five years after its inception, the EEWG is confident that our collaborative way of working has allowed us to develop initiatives that have had a positive impact on the employability of our students. The group has also raised our visibility and effectiveness beyond our School. We continue to use metrics, databases, industry feedback and the student voice to identify any gaps in our own employability and skills provision. We also proactively network with the wider University community to allow other Schools and Institutes to learn from our own experiences and use them to introduce a greater element of this type of teaching and learning into their own curricula.

Beyond this, we attend national conferences to disseminate our findings and observe the best practice of others. We are currently making inputs to the BioNow Skills Interest Group's work on addressing their skills gap and the Royal Society of Chemistry's Committee for Accreditation and Valuation of international degree programmes. We are also currently in the process of writing a paper on the EEWG journey to date.

The comment below from one of our Faculty Education Managers demonstrates the wider impact of our early work through the EEWG:

"I have seen the Working Group move from an early prototype to a fully functioning method of embedding employability skills and opportunities into SNES. The model has helped bring a number of, at times, divergent subject areas together and given them an easy-to-use framework. There have already been a huge number of successes and other Schools in the Faculty and the wider University are interested in rolling out a similar structure." SAgE Faculty Education Manager.

As a final positive note to end on, in August 2023 the EEWG were announced as one of the national winners of the AdvanceHE Collaborative Award for Teaching Excellence (CATE), which recognises and rewards collaborative work that has had a demonstrable impact on teaching and learning in Higher Education:

https://www.advance-he.ac.uk/awards/teaching-excellence-awards/collaborative-award-for-teaching-excellence/winners

REFERENCES AND HYPERLINKS

YouTube videos:

Find out more about our Enterprise Challenge
Find out more about our Sustainable Solutions Module

Conferences:

https://northumbria-cdn.azureedge.net/-/media/sls/graduate-futures/fwsc-event-programme-final-sept.pdf?modified=20220913095728
https://ukstemconference.com/2023-conference-programme/fco

Collaborative Award for Teaching Excellence (CATE):

https://www.advance-he.ac.uk/awards/teaching-excellence-awards/collaborative-award-for-teaching-excellence/winners

External Partners and Stakeholders:

https://bionow.co.uk/
https://www.rsc.org/
https://www.nepic.co.uk/
Homepage | Fresh Produce Consortium
Home - North East Local Enterprise Partnership (northeastlep.co.uk)

Newcastle University
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DEVELOPING GRADUATE ATTRIBUTES THROUGH A CREDIT BEARING PLACEMENT COURSE

Bethan Wood **University of Glasgow**

Co-funded by the Erasmus+ Programme of the European Union

EPD Feedback Loop

CONTRIBUTORS

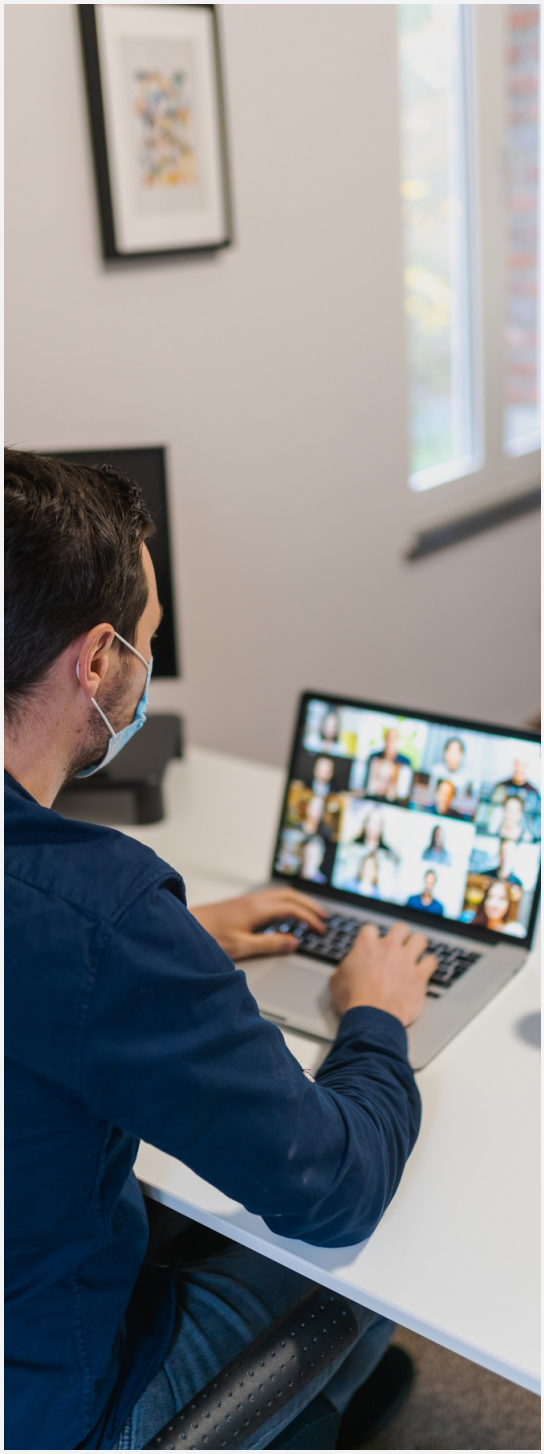
BETHAN WOOD

Bethan.Wood@glasgow.ac.uk

SUMMARY

The School of Interdisciplinary Studies at the Dumfries Campus of the University of Glasgow has offered a placement course at undergraduate degree for many years. As a result, there is now a strong partnership between the university and most local environmental organisations, who are keen to have students on placements and who see them as future employees. There is the potential therefore for our students to boost local employment levels, and some of our graduates have successfully applied for positions in local environmental companies. The placement course is in lieu of a dissertation, worth 60 credits, and is available in semester 2 of the third year; about 70% of the cohort choose the placement option. Students have 300 credits and have acquired sufficient knowledge and understanding and practical skills to be of benefit to the placement organisation. As part of the teaching before students go out on placement, students write personal learning goals which are explicitly linked to the university's graduate attributes matrix (University of Glasgow, 2023a). During the placement, the students keep a work-based journal within which they track the process of the personal learning goals and when achieved (or if they become irrelevant to the work undertaken) they create new goals. The benefits to the students are the articulation of their attainment of graduate attributes onto the CV and into their letters of application for the next stage of their career.

CONTEXT



- Year 3 undergraduate student
- BSc Environmental Science and Sustainability
- <25 students

Rationale: The degree was created with the opportunity for students to gain employability skills in the form of a work-based placement course worth 60 credits. This is an invaluable opportunity for the student to experience the work undertaken in an environmental organisation of interest. Sometimes students have perceptions of an organisation and being able to work for that organisation for 8 weeks supports the student in their career choices i.e., it is not the career for them, or it is the career for them. Understanding how the work they undertake can be used for employability purposes was strengthened by the explicit linking of the graduate attributes to the personal learning goals. Initially students had difficulty writing personal learning goals and relating them to the graduate attributes. The task in subsequent year was made easier by including examples from previous students in the workshops Students had difficulty writing personal learning goals and relating them to the graduate attributes made the task easier – examples from previous students are now included in the workshops, although in the first year I worked with students on how to write their goals. Since their goals relate to graduate attributes it also became easier to show the students how they could then incorporate them into their CVs and letters of application once they graduated.

METHODOLOGY & IMPLEMENTATION

PREPARATION FOR PLACEMENT

The assessments for the placement course are methods of supporting the students as they prepare for their placement, reflecting on the work they do during their placement, and assessing the skills acquired on the conclusion of their placement. The initial report is written before the student commences their placement and enables them to find out about the organisation and write some personal learning goals which are explicitly linked to the university graduate attributes (University of Glasgow, 2023a).

WORK-BASED JOURNAL ASSESSMENT

Many organisations now use working journals in which employees record work done during the day in online accessible forms and the benefits of this sharing of information has been published (Nguyen and Malik, 2020). The work-based journal assessment is therefore an example of an authentic assessment in which students record their daily work and which improves their employability (Sokhanvar, Salehi and Sokhanvar, 2021). In addition, they include a summary each week in which they reflect on the week's work and the progress they are making with their personal learning goals; they also record any skills acquired e.g., use of equipment and software, which can then be included in their CV.

THEMATIC PROJECT DISSERTATION

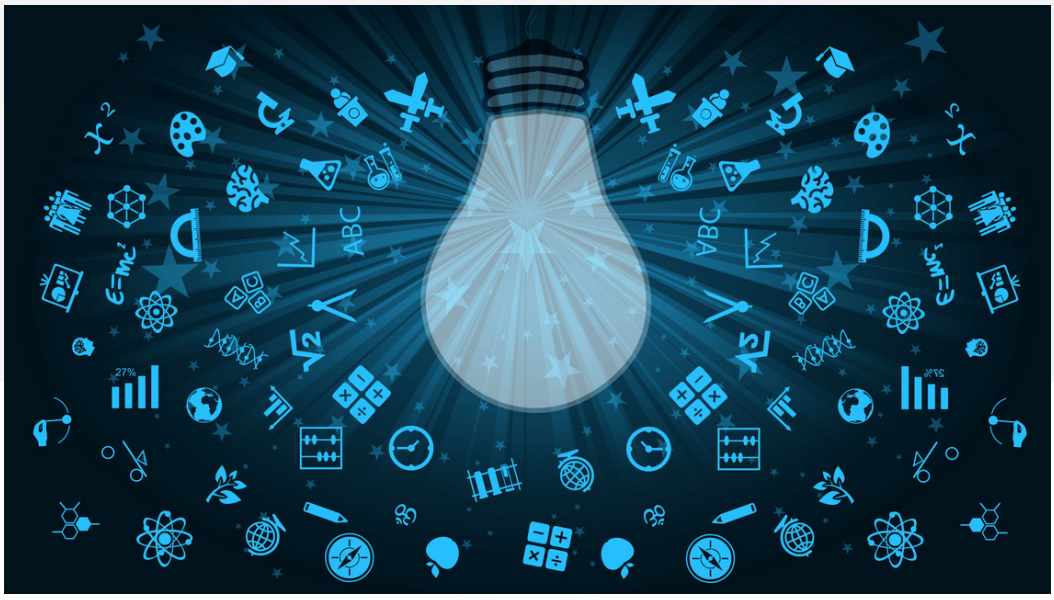
The final assessment is a dissertation based on themes in which they can consider the 'past and present' of the organisation or the project, the 'future and sustainability' of the organisation or project, any ethical concerns, a comparison of routine and creativity in the workplace and finally, any similarities or differences between theory learned at university and the reality of the work in the workplace.

STUDENT SUPPORT

We have a workshop on the placement course which looks specifically at these assessments for the course (Initial report – which includes these personal learning goals); work-based journal (which includes achievement of the goals on a weekly basis); dissertation (based on themes which can include the personal learning goals if relevant to the theme content). During the workshop for the initial report, we cover the personal learning goals, examine the university's graduate attributes matrices, look at examples from previous years - the students then have an opportunity to write some of their own goals. As these are personal to the student they are not shared with the class.

SECURING AND ASSESSING PLACEMENTS

Securing a placement is a key challenge the students face as they take the lead in contacting potential placement providers. Students are provided with text, as students can be unclear about the differences between formal and informal writing (Purcell, Buchanan and Friedrich, 2013) which they can amend to suit their own interests and experiences when contacting a potential organisation. Very occasionally organisations will be in touch with the academic to ask for a student – these tend to be organisations who have had students before – and the opportunity will be advertised on the Moodle site for the course. Most placements are however organised by the students as their interests vary from year to year. Once the student believes that a placement is likely to be offered, the organisation is put in touch with the university to complete risk assessments, health and safety, and the insurance questionnaire. Once everything is completed to both organisations' satisfaction, the placement is confirmed. During the placement the organisation is contacted twice, once halfway through for a one-page report on how the student is performing, and once at the end for a final evaluation of the student's performance – both are shared with the student. Students have been placed world-wide, from the WWT Caerlaverock to the Australian Koala Foundation (University of Glasgow, 2023b).



ANALYSIS AND EVALUATION

TIMING OF THE WORKSHOPS

The workshops before the placement used to be offered in the first two weeks of semester 2 before the students went out on placement in week 3. The feedback from the students was that these workshops were too late, and they wanted them much earlier. So, these workshops are now offered in semester 1 in week 3. This works much better according to the student evaluations of the course, as they have the information they require for their placements, 4 months in advance of them starting the placement.

The alignment of personal learning goals with the university's graduate attribute matrix commenced in academic year 2018/19 during the first workshop. This was, and is, therefore an opportunity to familiarise all students with the graduate attributes matrix and how it can be linked to personal learning goals and the ways in which they can emphasise their acquired skills on their CVs and letters of application.

STUDENT AND EMPLOYER FEEDBACK

From the CVs I have seen from students who have undertaken placements, there does seem to be evidence of better expression of graduate attributes the students can offer an employer. Certainly, every year a small number of the students have been offered voluntary work by the placement organisation, with about two students every three years being offered full-time, paid employment. At the end of the placement the students have the opportunity in their dissertation workshop, and the end of course evaluation, to feedback on their experience with the organisation. Many mention the improvement in their confidence and self-esteem, and the opportunity to enhance their CV; others mentioned that they learnt that they had the ability to motivate people or could relate the work done at university to the world of work more easily. Most importantly, students realised that they could make a contribution to the workplace and valued the opportunity to 'try out a career'.

From the employer perspective, the number asking for a student the following year or ticking the box on the feedback sheet stating that they would be happy to have another student, is testament to their satisfaction with our students' work.

The inclusion of the placement option is undoubtedly a key selling point of our degree, and many students state it as the reason they applied. This was particularly apparent during lockdown when all placements were cancelled for safety reasons – many students cited the placement as the reason they wanted to do the degree and were naturally disappointed that Covid took this away from them.

Co-funded by the Erasmus+ Programme of the European Union

EPD Feedback Loop

REFLECTIONS & CONCLUSIONS

The Scottish undergraduate degree is unique in the UK in that it is generally a 4-year programme rather than the traditional 3-year programme. Couple this with Scotland's retention of the centralised funding system and its willingness to integrate systems to create and utilise skills (Keep, 2014) and you have the potential to offer graduates with the skills necessary for the workplace. Our degrees facilitate the inclusion of a semester for a work-related opportunity in the form of a credit-bearing placement course. This prospect can enable a student to gain experience within a sector they hope to enter and equip them with the graduate attributes to articulate this to future employers.

While a placement course may not be an option for some programmes, we have ensured that our course is as scalable and transferable as possible, by providing template emails for the students to contact their own employers and supporting them to find their own placements, and by incorporating the standard dissertation into the summative assessment-for this course. Another aspect of our courses which is extremely transferable to other courses is the linking of aims, intended learning outcomes and formative and summative assessments to the University's standard graduate attributes framework.

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University of Glasgow

DEVELOPING PROFESSIONAL SKILLS PORTFOLIO FOR PSYCHOLOGY STUDENTS

University of Glasgow

Maxine Swingler
University of Glasgow

Co-funded by the Erasmus+ Programme of the European Union

EPD Feedback Loop

CONTRIBUTORS

MAXINE SWINGLER

Email : Maxine.Swingler@glasgow.ac.uk

SUMMARY

Professional Skills aims to support students in identifying and reflecting on existing skills to enhance opportunities in line with future career goals, informed by the QAA benchmark statement's emphasis on development of transferable skills throughout the degree (QAA, 2019). A BPS accredited psychology degree is required for graduates to be eligible for further post graduate training as a practitioner psychologist (BPS, nd). The course learning activities address BPS accreditation standards by supporting students' personal and professional development in articulating how their learning equips them with transferable skills and taking responsibility for their own learning and skill development (BPS, 2019). Students collate an individual portfolio using 2 assessments from a choice of 5 areas: CV and application; reflection on volunteer/paid work experience; science communication; open science; and a reflection on graduate attributes and goal setting. Students develop a rationale for their choice of assessment focused on their career goal and a reflect how the activities developed their professional skills, and support for developing a rationale is provided in the first lecture. The course is informed by the British Psychological Society career pathways (BPS, 2022), but also recognises that at least 80% of psychology graduates go onto non-psychology careers (Morrison-Coulthard, 2016). Thus, the focus of the activities and resources is transferable to a range of graduate career opportunities and subject disciplines. This case study outlines three of the portfolio assessments: 1. Graduate Attributes Reflection and SMART goal; 2. Volunteer/work reflection; and 3. Succeeding as a candidate (CVS and application).

CONTEXT

Psychology Honours and PGT (conversion) students at the University of Glasgow. Class size of 100-150 students. The 10-credit course is situated in the third year of a four-year undergraduate degree programme and in a one year MSc psychology conversion programme, both of which are British Psychological Society accredited degrees. The course can be delivered online or in person and lectures are supported by videos, interactive in class discussion, and MS teams.

1.GRADUATE ATTRIBUTES REFLECTION AND SMART GOAL

RATIONALE

In a rapidly changing graduate workplace, skills sought by employers need to be transferable across different careers (Barrie & Pizzica, 2019; Morrison-Coulthard, 2016). In addition to the assessment of subject specific and transferable skills, the degree programme also requires students to self-reflect and articulate these transferable skills, empowering them to take control of their own learning (BPS, 2019). With this in mind, we aimed to provide students with opportunities to research their career options, reflect on their graduate skills and develop relevant goals in the form of short reflective activities that can be adapted for lectures, practical classes, tutorials or delivered online (see GAs reflection Infographic).

Over 40% of our graduates in the School of Psychology are going on to full time study, and the remainder are employed in healthcare, business, education and the voluntary sector (U of G Careers service 2017), reflecting the national trend in psychology graduate destinations (HESA, 2021). Given the diverse career pathways of psychology graduates (Morrison-Coulthard, 2016) it was important to design the assessment to be flexible enough to capture a wide range of skills.

METHODOLOGY AND IMPLEMENTATION

In this assessment students reflected on the University of Glasgow Graduate Attributes, although the skills used in the reflection can be adapted to any subject discipline or institutional framework. Students engaged in the 'developing your graduate attributes' reflective activity in class (see slides for lecture 1), set themselves a SMART goal, then submitted their responses and received formative class feedback. For the assessment students used a reflective writing framework to reflect more deeply on their progress with the SMART goal, linking goals to career aspirations, and analysing what they had learned in the process.

ANALYSIS AND EVALUATION

In these examples of the reflective assessments a sense of ownership in applying their learning to personal and professional development is evident, along with meta-cognition on the process of learning, both important aspects of employability (Moon, 2004, Yorke, 2004). The GAs reflective activities have been transferred successfully to different subject disciplines, and evaluation of the GAs reflection reported a small increase in students' self-efficacy in and awareness of GAs after engaging in the reflective activity in the short term (Swinger & Hendry, 2021).

2. VOLUNTEERING AND WORK REFLECTION

RATIONALE

Advantages of a work placements are well known, but it can be challenging to establish placements with employers and offer flexibility to accommodate students' career aspirations (Jackson & Bridgstock, 2021; Moores & Reddy 2012). Voluntary or paid experience working with client groups in relevant settings is recommended by the BPS as a way of building skills and understanding of psychology practitioner roles and counts as relevant experience in applications for highly competitive post graduate training programmes (BPS, nd; Clearing house, 2022). Throughout the professional skills course students are encouraged to seek out voluntary/paid opportunities while they are studying and to apply their psychological literacy to existing volunteer/work experience (Lantz, 2014; Mair, Taylor & Hulme, 2014). In this assessment we scaffolded reflection on experience gained in part-time and voluntary work in the context of students' career goals. Students focus on critical incidents or crucial events (e.g., a difficult situation, conflict) and explain its' relevance, what they have learned from it, and how they will change their future practice (see Volunteering and work reflection infographic). The activities can be used flexibly and online, as a discussion task, a formative or summative assessment.

METHODOLOGY AND IMPLEMENTATION

Students completed an initial reflection on a critical incident experienced at work or while volunteering. In class we encourage students to articulate their reflections, ask questions, voice concerns and uncertainties (see lecture slides) and they receive formative feedback on their initial reflection. Using a reflective writing framework (Gibbs, 1988; Johns & Graham, 1996) students developed their initial reflection into a reflective assessment which contextualised their experience within career ambitions and professional development planning.

ANALYSIS AND EVALUATION

Examples of the reflective assessment demonstrate students' development as critically reflective learners across diverse work experiences, with learning going beyond career orientated motivations to include feelings of reward and personal development (Barton, Bates & O'Donovan, 2019; Fowler, 2008). Students' overall satisfaction in the quality of the course increased by 30 % in 2020-21 and this was partly attributed to the introduction of formative feedback on the reflective activities. Students commented: "I enjoyed learning about the importance of reflection and about the skills needed to carry me forward in my career." "I thought the formative exercises were really useful and good feedback opportunities."

Flexibility is key in the reflective assessments, in that students have the freedom to reflect on the skills and experience that align with their interests and that teachers can adapt the activities to their context. It can be challenging for students in the sciences to adopt a reflective writing style (Marsh, 2004), and providing a framework, exemplars and opportunities for feedback can foster experiential learning (Coulson & Harvey, 2013).

3.SUCCEEDING AS A CANDIDATE: CVS AND APPLICATIONS

RATIONALE

Graduate employment outcomes are a policy priority in HE, yet students can lack in awareness of the skills demanded by employers (Crowley & Jeske, 2020) and often need support in evidencing and articulating their transferable skills (see Dalrymple et al., 2021 for a review). This is particularly important in psychology, unlike some undergraduate science degrees that lead directly to careers in those fields, becoming a professional psychologist requires 2-3 years of postgraduate study and supervised experience. Those who pursue this goal find there is significant competition to gain entry, so preparing in advance is crucial (Lantz, 2014). Gaining relevant work experience is also essential, for example, assistant psychologist posts in the NHS (Clearing House, 2022) require applicants to articulate how they can apply their skills in clinical settings.While the undergraduate degree develops highly sought-after transferable skills in communication, numeracy, teamwork, critical thinking and independent research (QAA, 2019), finding a career focus and a job can be challenging for students studying psychology as a non – vocational degree, with a risk of graduate unemployment/ underemployment (HESA, 2022). For example, compared to science graduates, fewer psychology graduates in Scotland enter full time work and more enter full time study or part-time employment (HESA, 2022). Indeed, psychology graduates reflect that they should have started career planning earlier (Lantz, 2019), highlighting a need for opportunities to explore career options earlier in the degree programme.

The CV and application activities aimed to develop students' career focus and pre-professional identity (Tomlinson & Jackson, 2021) by gaining experience in articulating their skills in the current job market and creating a targeted CV and cover letter. Students also engaged with alumni which helped identify potential career directions and the type of experience required.

This assessment required students to research potential employers and the skills and experience required for their chosen career, then evaluate and apply their transferable skills to a currently advertised post graduate course or job role.

METHODOLOGY AND IMPLEMENTATION

Students searched for a real-life graduate opportunity and created a mock application (cover letter/personal statement and CV). Before the class students were asked to select the best candidate from three cover letters and CVs for an assistant psychologist role and then discussed their evaluations in class. In class activity involved evaluating examples in relation to the assessment criteria and analysing their own CV to develop an action plan on what to improve (see lecture slides). Examples of students' work demonstrate how students applied transferable skills from their academic and extra-curricular activities to person specifications. We developed the assessment criteria to encourage students to present themselves in an engaging manner within a professional context. To support students in career planning beyond the course assessment, we collated video testimonials from University of Glasgow alumni about their career journeys and the challenges they faced, and guest speakers from the careers service and the Student Representative Council signposted opportunities.

ANALYSIS AND EVALUATION

While working on the assessment students often reflected their target careers required more experience or skill development than they currently possessed, and this motivated them to seek our opportunities to gain relevant experience during their remaining time at university and/or rethink their initial career plans. The CV and application assessment and the markers' feedback supported students in their emerging professional identity by fine tuning their knowledge of what recruiters are looking for and adapting their CVs accordingly.

REFLECTIONS, CONCLUSIONS & NEXT STEPS

The Professional skills portfolio is a popular course with students, challenging their conceptions of graduate careers in psychology, and many report that it helps to kick start their career planning at university. The course could be developed to provide a more inclusive and international focus, signposting local and non-Western career options to support increasing numbers of international students and UK graduates working overseas. In future there is potential for the portfolio to be developed in other subject disciplines and labour market contexts and as a tool for self-reflection tailored to students' specific needs and background.

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U of G Graduate Attributes
University of Glasgow Graduate Attributes

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https://gla-my.sharepoint.com/:p:/g/personal/maxine_swingler_glasgow_ac_uk/EcxtczqPvOxMkkqUvm4iWIwBHEkNAHjWoFkvJxWstdavYw?e=69hz6v

GAs reflection Infographic
https://gla-my.sharepoint.com/:b:/g/personal/maxine_swingler_glasgow_ac_uk/EVBvuRINzv5HnM8oqRUsWHQBLJwaiV02HqsaZuRlrSS0Tw?e=57Qi9E

GAs Reflective Activity
https://sway.office.com/zVkoSpgGnLOsBDGy?ref=Link

Link to formative feedback from the lecturer for the GAs reflective activity
formative feedback GAS task_2022_23.docx

Assessment guidance for the GAs reflection assessment
https://sway.office.com/mVchPITfQbDMuWlb?ref=Link

Examples of GAs reflection assessments from previous students
https://sway.office.com/2GanR1eYaAahrQ6Q?ref=Link

Lecture slides: Volunteering and work reflection
https://gla-my.sharepoint.com/:p:/g/personal/maxine_swingler_glasgow_ac_uk/Ea6w4BRV7BVLh9KS5LN_IcoBa5ghTc8PwuDLGMAx_ONuYw?e=BlwwGb

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https://gla-my.sharepoint.com/:b:/g/personal/maxine_swingler_glasgow_ac_uk/EevAgsfmwAhIne_7jBeRDN4B4oQTAN_7BSWibedol5vsgg?e=9XmNbb

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Lecturer feedback on volunteering and work reflective activity
Formative Feedback_volunteering&work reflection_2022_23.docx

HYPERLINKS & SUPPORTING DOCUMENTS

Assessment guidance for the volunteering and work reflection assessment
https://sway.office.com/etaa8NUwCNje7mGx?ref=Link&loc=play

Examples of Volunteer/work reflection assessments from previous students
https://sway.office.com/fYbMvJ6uGaDT2szx?ref=Link

CVs and applications lecture slides (co-authored with Dr Archie Roy)
https://gla-my.sharepoint.com/:p:/g/personal/maxine_swingler_glasgow_ac_uk/EYrEkRxUXatHgOnIOyEF6sQBK0sitsYTIE1vDvg73Fs5TQ?e=Yf4PFK

CVs and applications pre-class activity-selecting the best candidate
https://gla-my.sharepoint.com/:u:/g/personal/maxine_swingler_glasgow_ac_uk/Eb0UHtz1mYZCkAuHupWOOlMBKlplguHwCP4peP1TOR84Tg?e=TOMm1V
(Content authored by Dr Archie Roy)

CVs and applications in class activity- evaluating CVs and applications
https://sway.office.com/0H3gtEE0h9jhkVzP?ref=Link

Assessment guidance for the CV and applications assessment (co-authored with Dr Archie Roy)
https://sway.office.com/znHfXolIh6ejKuGS?ref=Link

Examples of CV and application assessments from previous students
https://sway.office.com/aQAGDOd75jwE5d75?ref=Link

Video testimonials from graduates
https://linktr.ee/CareersSession

University of Glasgow
Co-funded by the Erasmus+ Programme of the European Union
EPD Feedback Loop

EMBEDDING EMPLOYER INFORMED APPLIED RESEARCH AND QUANTITATIVE SKILLS INTO THE CURRICULUM- UNIVERSITY OF READING

SARAH JEWELL

COSTANZA BIAVASCHI

VICKI WILES

UNIVERSITY OF READING

Co-funded by the Erasmus+ Programme of the European Union

EPD Feedback Loop

CONTRIBUTORS

SARAH JEWELL

Email :
s.l.jewell@reading.ac.uk

COSTANZA BIAVASCHI

VICKI WILES

SUMMARY

The aims of this project, which was funded by the University of Reading Partnerships in Learning and Teaching (PLanT) Projects Funding Scheme in 2016/2017, were to explore ways to embed practical research skills into the economics curriculum, to help students engage in research, and to develop practical research and quantitative skills that are sought after by employers. The work has continued since the initial funding and this case study provides a review of that work.

The project fed into the Department of Economics' review of its curriculum in line with the University's curriculum framework. In particular, the Department was keen to explore how their teaching could further develop research and enquiry skills and how these skills could be applied to real world problems and to aid critical thinking. Secondly, it was interested in how these skills could be developed in a way which aligned closely with students' future work environments. The main aim of our work within the Department, was not to radically change the curriculum but rather to look for ways to add and enhance skills development within the existing curriculum and modules. This approach was in line with Daubney's 'surfacing skills' process of supporting students to surface the skills developed within the curriculum (2020).

The project led to a range of recommendations for embedding these transferable and work-related skills which were identified as part of the project, particularly at level 2. Examples of changes included increasing the amount of Excel use across level 1 quantitative modules and embedding careers education within core modules at level 1 and level 2. Ultimately, the project has also inspired colleagues from across the department to review other parts of the curriculum and the broader student experience, including reviewing student feedback and developing course content to enhance additional key transferable skills.

CONTEXT

The University of Reading's curriculum framework is a set of programme principles which underpin the design of the portfolio of programmes across the University. This framework also sets out the attributes expected to be developed by University of Reading graduates. One key component of this curriculum framework is the mapping of skills across all levels and subject pathways within a programme. In this way, skills such as research and enquiry skills are embedded across the programme, from start to finish, an approach which ensures students are able to complete independent research. These particular skills of research and enquiry also feature in the University's key graduate attributes and were also key to our review of economics.

The focus of this particular intervention was on economics undergraduate degree programmes. At the University of Reading, economics cohort sizes are around 150-200 students, so the project had the potential to impact a large number of students. The Department of Economics sits within the School of Politics, Economics and International Relations. In recent years the Department of Economics has embedded quantitative skills into a number of modules throughout the degree programme and introduced several assessed projects to develop research skills. However, there were still concerns by module convenors that by level 3 students lack a number of key skills. In particular, skills relating to the application of economic tools to research questions and the construction of logical arguments. In addition to teaching staff concerns, employers had also stated that students lack certain data skills, such as the proficient use of Excel. The Economics Network's fourth Employer Survey of employers of economics graduates (Economics Network Research: Employers' Survey 2014-15, https://www.economicsnetwork.ac.uk/sites/default/files/Ashley/Employers%20survey.pdf)
[Accessed: June 7, 2023]) listed the application of economic theory, communication skills and quantitative skills as areas that required further development. They also had concerns that students lack the ability "to apply what has been learned in a wider context and general creative and imaginative powers" (2015). Therefore, the project aimed to identify the research and quantitative skills gaps in the economics curriculum with particular reference to skills sought after by employers. The second stage of the project was to then consider how to incorporate these skills more comprehensively into the economic degree programmes to increase the employability of our economic students. In particular, this project aimed to meet two of the University's Teaching and Learning Enhancement Priorities by further developing students' research and enquiry and employability skills, in line with the University's Curriculum Framework.

METHODOLOGY AND IMPLEMENTATION

The project had three main elements. The first element involved meetings with researchers and employers to discuss the skills needs of graduates. Employer discussions took place during placement visits and through conversations with employers and hiring managers involved in both the hiring of placement students and graduates. These were all individuals who were very engaged with the employment process. We spoke to a range of employers, including those in the civil service, banking, business and energy sectors. On average discussions lasted about 20 minutes.

The second element of the project was to conduct 2 student focus groups, with the second of these focus groups attended by the department's own dedicated careers consultant. The aim of the focus groups was to understand the particular research and employability skills students felt they had gained through the programme and how these skills had been developed. We also explored the skills students would like to see developed. The focus group consisted of 7 students from a range of levels and subject pathways, including at least one from each level, 1 joint student (International Relations and Economics), 1 embarking on placement, 1 who had returned from placement, and 1 student who had completed their degree and was currently pursuing postgraduate study at Reading. The focus group also included both BSc and BA economic students who study separate modules on econometrics. Students were recruited by direct invites and a general invitation sent to mailing lists.

The third part of the intervention was to hold discussions with module convenors, particularly focusing on those who taught quantitative skills or were level 1 core module convenors. There were two elements to these discussions. Firstly, to find out more about the skills that the convenor had already introduced into the modules and, secondly, to share the recommendations that had already drawn from our student and employer surveys.

ANALYSIS AND EVALUATION

The employer interviews and focus groups were analysed using thematic analysis. The key findings are outlined below:

Thematic Outcomes from Employer Interviews

One of the main themes which emerged from the focus groups related to software skills. All employers noted that they use Excel extensively in the workplace and that this was the most useful software skill required for graduate roles. Employers also stressed the importance of being able to make effective of PowerPoint and email, particularly how to write an email suitable for a professional context (a skill they felt that many new graduates lack). Employers stated that with respect to econometric software, they are more interested in the skills that are developed through the use of such software than the knowledge of the particular software itself. In particular, employers mentioned key skills which emerged from the use of econometric software, related to the ability to interpret the data and outputs, and to then "tell the story" of the data and "see the bigger picture". They also referenced analytical skills.

Employers also commented on other skill gaps they would like to see further development of, including presentation, communication (both to technical and non-technical audiences), planning, organisation and teamwork skills.

Thematic Outcomes from Student Focus Group

A key finding of the project was the importance of striking a balance between developing the skills that students need early enough on in their programmes but not so early that they could not see the relevance. Ie. we found that students generally do not engage with skills development unless they see their relevance in the near future. Another finding was that students like a mix of theory and practice - for example, having a tutorial followed by a PC class where they apply what they have learnt, or demonstrations followed by exercises where they apply the tools demonstrated in a different way.

Equally, students are keen to see an increased use of Excel and to be introduced to advanced Excel use much earlier and consistently throughout the degree programme. This is consistent with employers' desire for greater Excel use. Students also want to improve their data handling skills: IE. greater experience of sourcing (good) data, cleaning data, using real world (up to date) data, and undertaking real world tasks. They also want to have more practice at interpreting data and opportunities to "tell the story" of their data and communicate its key importance.

Outcomes of Employer Feedback and Student Focus Groups on Curriculum development:

There were four key actions that took place as a result of the project surveys and evaluation. Namely:

1. Discussions with level 1 quantitative module convenors which led to significant modification of the undergraduate curriculum. In particular, it was agreed to increase the students' exposure to Excel at two key points in the curriculum:

- At level 1: Increased emphasis is now placed on the introduction of pivot tables, collecting data (sample vs. population), include distribution of real data (skewed), colour formatting, stress the idea of the underlying story of the data, formulas (averages, standard deviations), and the inclusion of graphs. At this early level, the focus is mainly on smaller samples.
- At level 2: At this level, the focus moves to large samples as opposed to smaller samples. This particular module includes the revision of formulas, graphs, and scatter plots.

2. A significant revamping of the career's education content of the undergraduate economics programme, following discussions between the Microeconomics and Macroeconomics module convenors and their Careers Consultant. It was agreed that students would start developing careers skills (particularly those identified as lacking by employers) within core modules from level 1, through a range of new module activities. These activities will predominately take place in level 1 and level 2 core modules that are undertaken by the full economics cohort (including joint honour economics students). At level 3, there are no core modules taken by all students, so activities are instead spread across key core modules and additional add-on sessions. It is hoped that by level 3, students will have the key career skills needed to choose the sessions that are relevant for them to attend, so there is less need to embed activities directly into every one of their core modules.

3. In addition, the Department of Economics played a significant role in the University's broader embedding employability in the curriculum project being run in line with the curriculum framework project. The Department was the first department in the University to engage with this work, which started in the academic year 2017/2018 and which has been continuing ever since. Specifically, we brought in study advisors and career advisors at an early stage to deliver short sessions within lectures focusing on areas such as group work, sourcing data, and referencing. The idea is to run these sessions on a "just in time" basis, just before the students need the skill.

4. There was also a broader impact of our work within the Department of Economics on the University as a whole. The author of this paper, Sarah Jewell, presented at a university-wide workshop, 'Embedding Employability in an Undergraduate Curriculum: Getting Started', in the summer 2017. This workshop was designed to help other departments and faculties who were starting to embed employability in the curriculum to learn from our approach. This workshop was well attended by a range of departments.

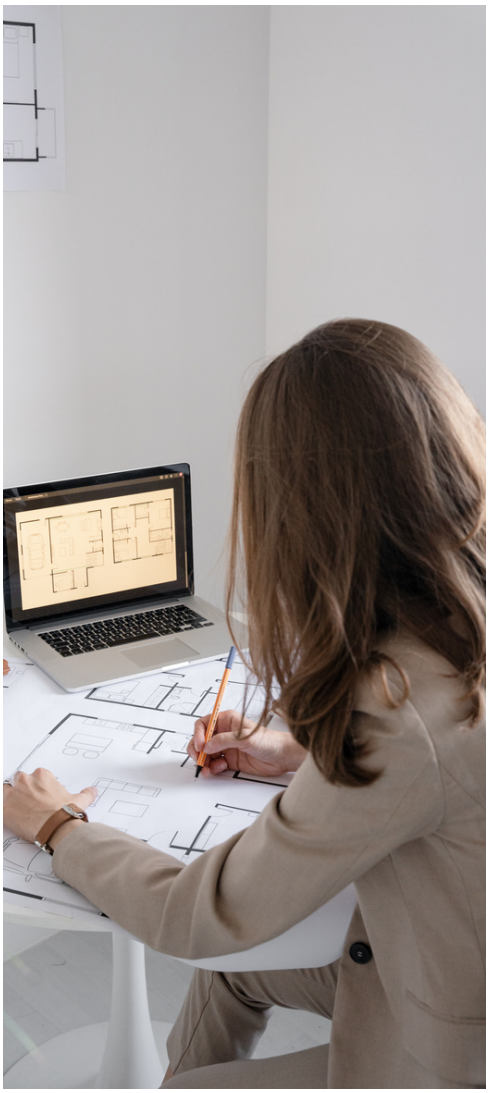
REFLECTION AND NEXT STEPS

Following on from this initial project, there has been further work going on within the Department of Economics to embed quantitative and research skills. This has, in part, been through the development of a non-credit bearing module entitled 'Core competencies' and also through Placement training modules. There are plans to expand Core competencies to include employability skills, particularly focusing on key skills that can be learnt through platforms such as LinkedIn Learning – a service the University of Reading subscribes to. We are also doing work to further embed Excel skills as the main software platform at level 1, embedding it into a wide range of modules. There has also been a move to provide employability skills matrices within modules, so that students can quickly understand which skills they possess. There are also plans to roll this out at a programme level.

Other areas we are already starting to focus on for the future include:

- Making greater use of current and real-world data in exercises and coursework;
- Providing a chance for students to develop software skills, such as Python, by providing optional additional sessions (potentially embedded in the Core competencies module). This develop may draw on LinkedIn learning courses;
- Placing more emphasis on the development of presentation skills through assessed presentations, particularly at level 1.

The project has now influenced others within the Department who have taken inspiration to look at other parts of the curriculum and student experience, such as focusing on student feedback and developing a broader set of transferable skills. The current Director of Employability within the Department of Economics continues to attend placement visits with our Placement Coordinator, to talk to employers about how University of Reading students are performing and any areas for improvement.



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University of Reading

Co-funded by the Erasmus+ Programme of the European Union

EPD Feedback Loop

EMBEDDING THE DEVELOPMENT OF GRADUATE ATTRIBUTES INTO COURSE DESIGN WITHIN AN UNDERGRADUATE MEDICAL CURRICULUM

Amanda Britten
University of Glasgow

Co-funded by the Erasmus+ Programme of the European Union

EPD Feedback Loop

CONTRIBUTORS

DR AMANDA BRITTEN

Lecturer, School of Medicine, Dentistry and Nursing, College of Medical, Veterinary and Life Sciences, University of Glasgow

Email: amanda.britten@glasgow.ac.uk

SUMMARY

In the UK, the General Medical Council (GMC) sets the standard for medical education and training. Undergraduate medical curricula delivered in UK Medical Schools must demonstrate how their students achieve proscribed 'Outcomes for Graduates'[i] to be an accredited provider. In parallel, the University of Glasgow has developed a set of 10 defined Graduate attributes. These are the academic abilities, personal qualities and transferable skills which all students should have the opportunity to develop as part of their university experience[ii].

It is well acknowledged that the medical curriculum is by necessity content heavy and that students typically focus on this medical content. This focus on content can be to the detriment of the broader transferable skills and Graduate attributes students are developing. To address this issue, a Year 2 medical course module - a Student Selected Component (SSC)[iii]- was designed to refocus student attention to the Graduate attributes and transferable skills required for a future medic. This 5-week module introduced students to Forensic Toxicology and the 10 University of Glasgow Graduate attributes. Formative assessment opportunities were built into the design of the module to ensure students were building their awareness of the Graduate attributes and were meeting supervisor expectations within this new form of reflection and assessment before the final summative assessment was submitted.

Overall, students appeared to engage well with the new form of assessment and produced high quality assignments in relation to their awareness of the Graduate attributes. It is still unclear if they fully understood the longer-term relevance of these Graduate attributes to their future careers in medicine. It is hoped that this approach to embedding Graduate attributes alongside medical curriculum content will be developed further and will increase students' awareness of the relevance of these attributes to the medical profession.

CONTEXT

The author of this case study has a strong academic practice philosophy which advocates student-centred learning as described by Cannon and Newble (2000). It has been shown that supporting students to engage in active approaches encourages deep learning and can lead to higher quality learning outcomes (Van Rossum and Schenck, 1984, Trigwell and Prosser, 1991, Trigwell, Prosser and Waterhouse, 1999 and Ramsden 2003). The author's experience of developing workplace-based learning in the NHS between 2005 and 2013 and returning to academia in 2015 increased their desire to support students to develop workplace relevant skills and attributes. These skills and attributes enable students to adapt to the changing work environment. At the same time, these skills and attributes must be balanced with subject-level, disciplinary expertise students need to progress through their programme of study, and which culminates in the award of a subject specific degree.

The 'Outcomes for Graduates' set by the GMC detail the knowledge, skills, and behaviours that medical graduates must be able to show by the end of their studies (GMC, 2018). Medical curricula delivered in UK Medical Schools must demonstrate how their students achieve these 'Outcomes for Graduates' to be an accredited provider. It is also recognised that 'medicine is a lifelong journey, immensely rich, scientifically complex and constantly developing…but also involves uncertainty and the emotional intensity of supporting colleagues and patients' (GMC, 2023a). Accordingly, 'The Reflective Practitioner – Guidance for Doctors and medical students' (GMC 2023b) has been developed jointly by the General Medical Council (GMC), the Medical Schools Council, the Academy of Medical Royal Colleges and the UK Conference of Postgraduate Medical Deans (COPMeD) to support medical students, doctors in training and doctors engaging in revalidation on how to reflect as part of their practice.

The Medical Degree at the University of Glasgow has a 'core curriculum' where many of the 'Outcomes for Graduates' are covered and achieved, but there are elements of the curriculum that further complement the core. These elements deliver generic professional skills, are student-centred, and allow students to demonstrate a depth and breadth of understanding and skills beyond core competencies. They also allow students to explore potential career pathways. One such complementary element of the Medical Degree at Glasgow is the SSC programme.

The SSC programme at Glasgow consists of 3 x SSC blocks spread across the 5 years of the Medical Degree programme. This is currently delivered as a 5-week block in Years 2 and 4, and a 4-week block in Year 3. In Year 2 all the medical students undertake their SSC at the start of Semester 2. This timing of the SSC provides a natural break for the students from the core curriculum which they have studied for the three previous semesters - a total of 39 weeks.

The author of this case study designed an SSC for Year 2 Medical students where the University of Glasgow's graduate attributes were explicitly embedded into a 5-week package of learning and assessment. This learning included the gaining of basic subject knowledge in Forensic Toxicology. This course also aligns with the core aims of QAA Scotland's 'Focus on Graduate Skills' (QAA Scotland, 2018-19).

METHODOLOGY & IMPLEMENTATION

This new SSC entitled 'Forensic Toxicology and Graduate Attributes' was designed for Year 2 Medical students at the University of Glasgow in November and December 2020 using the principles of constructive alignment (Biggs, 1996).

The Medical Degree Year 2 students select their top six choices of SSCs from a menu of approximately 18 choices and then an algorithm is used to allocate students to an SSC in order of their preference.

The 5-week SSC has been delivered three times between January – February in 2021, 2022 and 2023. It was delivered to two groups of six and a group of seven Year 2 Medical students, respectively. Associated summative assessments are completed by the end of the module. All assessments for the SSC are summatively graded and written feedback provided. The students need to pass the SSC module they undertake in Year 2 of the Medical Degree at Glasgow along with written examinations and coursework assignments for Year 2 to progress to Year 3.

A basic introduction to some elements of Forensic Toxicology over a 5-week period is used as a vehicle to explore the 10 University of Glasgow graduate attributes and their academic, personal, and transferable dimensions (University of Glasgow, 2010). The learning outcomes aligned to the learning activities and assessment of the University of Glasgow graduate attributes are as follows:

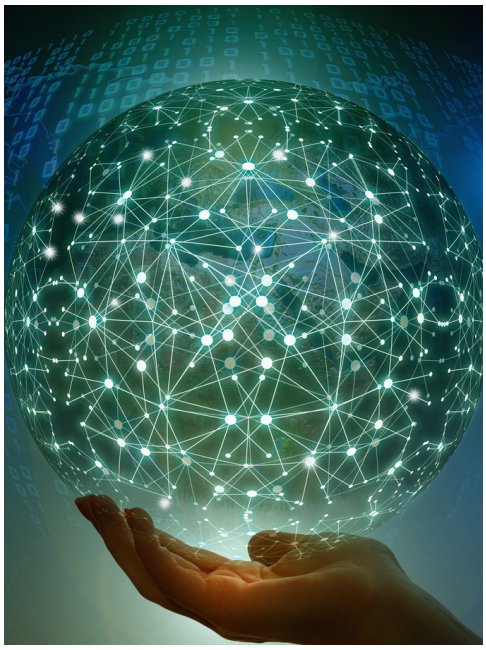
- Determine your graduate attributes in relation to the Forensic Toxicology and graduate attributes' SSC.
- Reflect on your learning, development of graduate attributes and any other relevant experiences whilst undertaking the SSC.
- Generate a personal development plan for the remainder of your Medical Degree Year 2 and beyond.

The mapping of graduate attributes, the reflection on learning, and the personal development plan are all contained within a 1000-word assignment that contributes a 20% weighting to the overall assessment of the SSC. The students are given the summative Graduate Attribute task and submission guidelines at the start of the SSC (Appendix 1). They have 5 weeks to achieve the learning outcomes and submit the assessment.

At the beginning of the SSC, students were asked to indicate 'in class' if they were aware of the University of Glasgow graduate attributes. The University of Glasgow graduate attributes are an area with which Year 2 Medical Degree students are generally unaware and unfamiliar. Accordingly formative assessment opportunities were built into the design of the SSC to ensure students were supported to get to grips with the graduate attributes and to align their assessment outputs with supervisor expectations. Written drafts of some of the graduate attributes assessment elements (including, mapping/identification and some reflection) were submitted by the students at the end of week 2 of the SSC and written feedback was provided by the SSC supervisor a week later. Verbal feedback was given as part of an individual student check-in with the SSC supervisor during week 3 and then later to the group. This highlighted the common themes among the students in relation to the task which were observed from the individual formative assessments.

ANALYSIS AND EVALUATION

The deliberate planning of live and self-directed graduate attributes learning activities across the 5-week SSC enabled the students to engage with the graduate attributes and discuss the topic with their peers and SSC supervisor. The students worked independently and in a self-directed manner to identify activities within the SSC where they not only met the University of Glasgow graduate attributes and the relevant dimensions, but also where there may be gaps. The students were asked to tabulate this activity and give specific examples. Draft reflections on one or two graduate attributes were also written by the students.



The students participation and performance in both the formative and summative assessments is outlined below:

Formative assessment participation and performance:

- Formative assessment submissions were completed by the requested deadline for 15 out of 19 of the students across the 3 cohorts of the SSC. 3 students from the 2023 cohort submitted a formative assessment at least two weeks past the requested deadline and 1 student in this cohort chose not to submit any work for formative assessment.
- The students who submitted formative assessments were able to consider suggestions for improvement prior to the graduate attributes' summative assessment submission.
- Students who covered both elements of the graduate attributes' formative assessment (i.e., mapping/identification and reflection) on-time or late achieved a better summative assessment grade than those students who covered one element and/or submitted on time, late or not at all.
- All student personal development plans contained at least one achievable action to develop a specific graduate attribute(s) during the remainder of Year 2 of the Medical Degree (10 weeks).

Summative assessment performance:

Summative assessment grades for the graduate attribute assessment were as follows: 12 x A (excellent), 3 x B (very good) and 4 x C (good). This roughly equates to 12 x 1st, 3 x 2i, and 4 x 2ii degree classification assignments.

Student evaluation

Student evaluations of the SSC were conducted via Microsoft forms at the end of the 5 weeks of teaching. No specific questions about graduate attributes were asked in 2021, but in 2022 and 2023 a specific question about the value of developing graduate attributes at this point in the Medical Degree curriculum was included.

All students who completed the evaluation in 2022 gave a 'neutral' response to this question. Also, one student indicated that they were uninterested in the graduate attribute's aspect of the SSC (via their reflection), but did understand the importance of analysing academic, personal and transferable skills and how this could help them develop as a student and a professional.

In 2023, 1 student strongly agreed, and 2 students agreed that it was valuable to develop University of Glasgow graduate attributes at this point in the Year 2 of the medical degree; a further 2 students were neutral in response to this question. One student who gave a neutral response about the value of developing graduate attributes during the SSC commented 'I think it was a little hard to fill in the table with things I've done in the past 5 weeks, but I do think it was a good opportunity to reflect'.

REFLECTION AND CONCLUSIONS

Informal feedback from students during the delivery of the SSC and course evaluations show that there was clearly some uncertainty from students regarding the value of mapping activities from the SSC onto the 10 graduate attributes with their academic, personal, and transferable dimensions. Only 1 student out of 19 was aware of the University of Glasgow graduate attributes at the beginning of the SSC, so this could explain some of this uncertainty.

Staff reactions to the graduate attributes activity in the SSC have always been that students will not value this element of the course or see its relevance compared to learning new knowledge about Forensic Toxicology. However, there was a determination by the author to continue with this element of the SSC design to collect data to drive curricular development of the SSC in the future and hone learning and assessment activities for the students in relation to graduate attributes.

As indicated, students across all three cohorts engaged very well with the graduate attributes learning activities, and all apart from one submitted draft pieces of work for feedback. Their summative assessments were completed to a high standard, with over two thirds of summative assessments achieving excellent grades across the three cohorts. However, it is difficult to determine how much of this engagement and learning was driven by the summative assessment as opposed to the value the students placed on the graduate attributes themselves.

It would appear however, there was some uncertainty for the students regarding the mapping of SSC activities to the University of Glasgow graduate attributes due to a lack of awareness of the graduate attributes and their value. Some students also did not know what was meant by the term mapping, which led to the introduction of the term 'identification' for the 2023 cohort. To support this further, live learning sessions were used as an opportunity for students to discuss with their peers and SSC supervisor how activities from the SSC correlated with the relevant dimensions of the UoG graduate attributes. SSC supervisor feedback on a draft of their initial mapping and reflections of graduate attributes was purposely included to give the students confidence that they were on the right track with this assessment, with some suggestions for improvement being given prior to graduate attributes summative assessment submission.

The graduate attribute student assessments from the 2021 and 2022 cohorts also highlighted that students did not have much relevant experience that aligned with the 'effective collaborators' graduate attribute, and its academic, personal and transferable dimensions. As a result, it was decided by the SSC supervisor that one of the assessments – a podcast assessment on a toxicological topic - would be undertaken in pairs or a group of three for the 2023 cohort rather than individually. This was contrary to the findings of an SSC supervisor consultation with the 2021 and 2022 student cohorts, where students had indicated a preference to work individually on the podcast activity. This ambivalent attitude of undergraduate medical students to groupwork compares similarly with author's experience of post-graduate taught students and their negative attitudes to assessed team activities (Hamnett, McKie and Morrison, 2018). However, by resisting this negative attitude and providing a positive, supported small group learning experience (ie. working in pairs), the author believes we can incrementally improve students' attitude towards teamwork and enhance these essential collaborative skills – skills that were shown to be lacking in the previous two student cohorts.

Evaluations conducted so far indicate that Year 2 medical students are ambivalent as to the relevance of graduate attributes at this stage of their medical careers, although 3 students in the 2023 cohort did indicate the value of engaging with the graduate attributes. Despite this, the author still believes this is an important element which should be designed, supported, and assessed within Higher Education modules, courses or programmes.

Supporting students to reflect on the University of Glasgow attributes and their various dimensions over the course of the past three years through these graduate attribute mapping and reflection activities has confirmed the relevance of these attributes to Year 2 medical curriculum. It has also helped us to identify the gaps in student attribute acquisition and support subsequent curricular development of our SSCs to meet fill these gaps.

Having said this, in 2024 the author will take a more targeted approach to those University of Glasgow graduate attributes which align most closely with the SSC content and focus less on those attributes which are covered elsewhere in the curriculum. These attributes and their relative coverage within the SSCs has been well evidenced in student summative assessments submitted over the past three cohorts, but also through staff evaluation of the SSC over the past three years. In the future, for example, there will be more focus on supporting the development of Investigative, Independent and Critical Thinkers, Resourceful and Responsible and Experienced Collaborators attributes and less on Reflective Learners and Subject Specialist. Reflection is covered extensively throughout the medical curriculum and the subject specialism is impossible to achieve within an introductory 5-week Forensic Toxicology course.

In the longer term, we will need to explore an incremental development of graduate attributes across the entire curriculum for medical students. Some of this development may focus on transferable skills, which are more transferable outside the subject area of medicine, whereas others will be specifically occupational as determined by the GMC.

Scalability/adaptation to other HE contexts

The theme of raising awareness of the graduate attributes through mapping, reflection and PDPs could be applied to many other subjects and programmes in Higher Education by adapting the activities and assessment developed for this medical SSC. Introduction to the graduate attributes could be as discipline specific or generic within particular subject areas depending on need. Importantly, our experience shows that learning activities and assessment can be used to raise student awareness of the graduate attributes they are encountering and developing through their degree programmes, which in turn, builds confidence. Conversely, learning activities and assessment can also draw out gaps in graduate attributes and students can use this awareness to plan for future personal and professional development. The SSC in Forensic Toxicology and graduate attributes took this combined approach.

The author believes that the integration of learning outcomes and associated summative assessment, coupled with the allocation of time for formative feedback, is key to the success of student engagement with this aspect of the SSC. The formalisation of learning through assessment clearly still acts as a driver for student engagement (Medland 2016).

Where degrees are accredited by professional and regulatory bodies (e.g., Allied Health Professional degrees, Dentistry, Law, Nursing, Veterinary Medicine) it is likely that curricula are meeting the outcomes which enable the accreditation of the specific degree. However, achievement of key institutional graduate attributes may need to be made more explicit to students, especially in the early years of study. This raising of awareness of graduate attributes is essential regardless of discipline area and will help lay a foundation for more self-directed and student-centred activity in later years, which supports the development of skills relevant to the ever-changing world of employment in the 21st century.

Next steps

In relation to Medicine at Glasgow, an investigation and review of the personal and professional development (PPD) theme within the Vocational Studies (VS) element of the medical degree in years 1 and 2 could be usefully undertaken. This review could determine if there is an opportunity to make the University of Glasgow graduate attributes still more explicit to students and highlight their transferability into contexts outside of medicine and beyond Higher Education. As indicated all medical curricula have to be mapped to the GMC 'Outcomes for Graduates' to be accredited, but these outcomes could be made more explicit to students in the clinical phases of the medical degree at Glasgow and their relevance highlighted as they progress through their early clinical careers; this could include how these graduate attributes articulate into postgraduate medicine and future requirements for continuing professional development.

In terms of advice the author would give on the embedding of graduate attributes within HE degree programmes:

- Believe that the development of graduate attributes is a valid and important consideration in the Higher Education of students in the 21st century alongside subject specific knowledge.
- Consider where your students are in their course of study (e.g., early, or late undergraduate vs postgraduate) and their motivations for engaging with graduate attributes (i.e., assessment vs internal motivation for personal/career development beyond university).
- Consider the relationship between graduate attributes and the other 'occupational' outcomes for graduates that may be required for professional degree accreditation.
- Curriculum developments do not have to be perfect from the outset but can draw on student evaluations and your own reflection on learning activities and assessment outputs to make improvements to those areas of your curricula for the future.
- Some students may not see the immediate value of engaging with graduate attributes. The value and benefit for the student may come years later depending on their circumstances and the context in which they find themselves and that is OK.

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Supporting documents

Appendix 1: SSC Forensic Toxicology and graduate attributes. graduate attributes Task and Submission

[i] [iculture-change-through-graduate-l-d

[ii] [iculture-change-through-graduate-l-d

[iii] a complementary element of the medical degree at the University of Glasgow, whereby students demonstrate a depth and breadth of understanding of the core competencies required in medical degrees

S.HE GOES DIGITAL- GETTING WOMEN INTO IT BY DESIGN

Johan Loeckx

VRIJE UNIVERSITEIT BRUSSEL

Co-funded by the Erasmus+ Programme of the European Union

EPD Feedback Loop

CONTRIBUTORS

JOHAN LOECKX

Email : – jloeckx@ai.vub.ac.be

With indirect contributions by Marie-Modeste Vaeyens (Responsible Lifelong learning activities in the Science faculty of ULB university),
Claire Godding (Senior Expert on Diversity & Inclusion and Societal Needs for the financial sector in Belgium at Febelfin),
Carine Lucas (Expert Digital Innovation at Agoria, a sector organisation for the manufacturing industry), and Laurence Jacobs (Business relationship officer at Agoria)

SUMMARY

In Belgium today, there is both a shortage of ICT professionals and a massive under-representation of women in the sector. The Vrije Universiteit Brussels (VUB) are attempting to address this issue through the creation of an Executive master's programme, a short 6-month programme targeted at women who are approaching the end of a non-STEM master's degree. The objective of the programme is to provide enough foundational knowledge of the IT subject area to support students' transition into the profession.
The programme is designed to build self-confidence, dispel misconceptions, and empower women to enter what may be perceived as a male-dominated IT sector. The programme certification provides sector hiring managers with the formal and certified proof of a student's capabilities. For this reason, it was decided to change the programme name to the gender-neutral "Executive Master in IT essentials".

CONTEXT

Women in IT-related professions in Belgium currently represent only 3% of the sector. Meanwhile, the increasing digitization and automation of society has created a growing need for trained ICT professionals. This lack of gender diversity not only creates problems within the IT sector, but more importantly, also means that many women cannot realize their dreams nor their potential. As the number of STEM students is static, increasing the size of the talent pool by including women, should solve at least part of this problem.

Our original objective in designing the "S.HE goes digital" was to boost the number of women with IT qualifications, an altruistic initiative started by three alumni of the VUB and ULB university. The approach that was taken was to create an "executive master" - a short 6-month programme of about 30 ECTS credits – which was targeted at women at the end of a non-STEM master's degree[1]. The objective of the programme is to give non-STEM students enough holistic IT culture to become so-called "bridge builders", who are professionals that link their field respective field of expertise (it could be accounting, operations, HR, …) to the domain of IT. There is a strong need for these kinds of profiles due to the strong drive to automation by means of algorithms and AI.

[1] The programme targets at least 50% women. In the first edition, the balance was closer to 90%

These professionals should have a conceptual understanding of IT and be able to translate between business requirements and IT.

The main reasons for choosing this programme format were threefold. First, it allowed any student finishing a non-STEM master's degree, and with an interest in IT, to get enough "IT culture" to apply for several roles within the IT sector, with minimal extra investment. Furthermore, it was designed to build self-confidence, dispel misconceptions, and empower women who may feel excluded from a perceived male-dominated IT sector. Thirdly, it provided confidence to IT hiring managers that these students had formal and certified proof of their capabilities.

Overview of the programme learning goals

The programme looks as follows, with technical modules indicated in blue, interdisciplinary ones in green, and methodological ones in yellow. The case studies are indicated in black, as bringing the students in contact with different views and people:

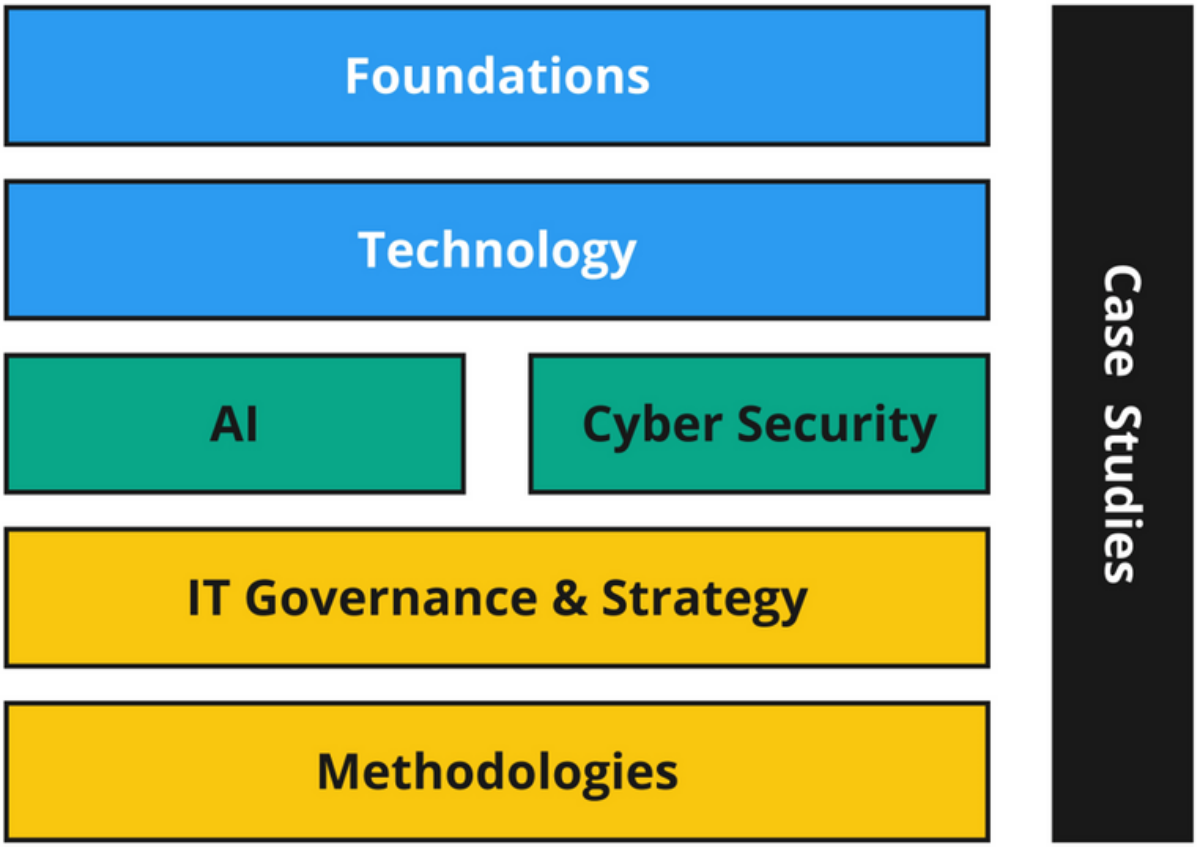
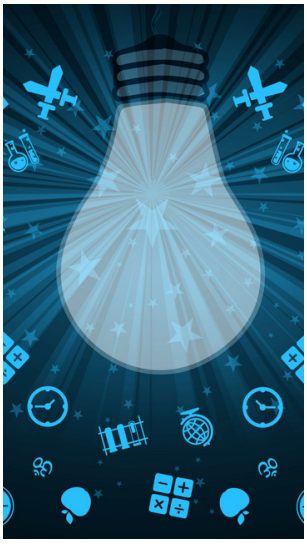


Figure 1: programme learning goals chart

Course 1: The **Foundations** course covers computational thinking, teaching the fundamental principles of computing, programming languages, the structure of information, and abstraction. It also introduces students to the pioneers in the field and the history of computer science. Lastly, the topic of problem solving is discussed, alongside fundamental algorithmic paradigms such as data structures, trees, graphs, and algorithms.



Course 2: A second course covers the **technological** aspects of IT, including hardware, cloud computing, sensors, IoT, databases, encryption, networking and services.

Course 3 & 4: The master's program has a special focus on emerging technologies - namely **Artificial Intelligence** and **Cyber Security** – taught in two dedicated modules that provide a comprehensive overview of these fields.

Course 5: A fifth course looks at IT from an **organisational, societal and sectoral** perspective: how are IT departments structured? How is the ecosystem organised? What does the Open Source Movement encompass? What regulation exists? What are the ethical and societal implications of IT? As a core part of this course, industry practitioners are invited to give a diversity of perspectives.

Course 6: Course 6 pays paricular attention to **methodology**. What methodologies exist? What is design thinking and how can it help? How can we organise interdisciplinary collaboration? How are processes managed such as product management, software development, software documentation, and user experience?

Course 7: A final course explores how IT/digital can **solve real-world issues**. This course pays particular attention to the role of digital, the role of women in IT, and the existence of issues like bias, diversity, gender and equality in IT.

As the industry expressed a strong interest in internships, an optional internship was included – either within the company that the student works, or an external one.

Labour-market information was employed, both explicitly and implicitly, to identify and develop the learning goals. They are broadly divided into vertical, content-specific goals, and horizontal/cultural goals.

The horizontal learning goals are:

1.Feel comfortable in IT environments

a.Understand the vocabulary, the lingo, the roles & jobs the culture

b.Know who to talk to in an IT company (roles), who does what

c.Understand executive summaries of documents across IT organisations

2.Translate and bridge business to technology

a.Talk to business owners, collect their needs and translate for software architects

b.Translate a technical issue in layman's terms and vice versa

c.Understand the impact of a requirement/user need, being able to estimate the feasibility - Assess how difficult a change request is, how much time it will take

d.Understand the limits of technology and the impact on requirements / functionality

3.Manage and communicate on your projects in the digital era

a.Explain a blog, understand a job description - interview a candidate for a role

b.Apply or understand the lean start-up & other methodologies (XP, agile, ...)

c. Identify where things can go wrong

Pedagogical approach

There was a shared enthusiasm and identification of the need for interactive learning experiences that are adapted to IT culture but that also focus on the development of soft and interdisciplinary skills. For this reason, preference is given to active learning formats, including:

·'War Stories'– real stories of IT implementations, experienced by the lecturer or speaker, with a post-mortem analysis of what went wrong, what went well, and lessons learnt.

·'Games & Demonstrators' – one of the key expertise of the AI lab of the VUB is the creation of games & demonstrators, to explain about AI and its impact as well as to showcase the newest research trends.

·Microprojects and situated learning workshops – situated learning experiences to deepen the understanding of the learning material and make teaching more adapted to the application at work.

·Interaction w/ professionals - anthropological sessions in companies, e.g. walk along with an expert in the company as well as roleplay with people from industry.

·A coding project to apply the concepts that were taught.

Recruitment of students

A final note on the recruitment of students. Originally, direct marketing and more traditional methods of open recruitment were planned. However, as we progressed through the programme development stages, it emerged that “two-tiered” recruitment, with sectorial organisations (like FINBEL, Agoria, …) and unemployment offices (Actiris in the case of Brussels) buying seats for the programme, was a more effective solution. In this case, they are responsible for recruitment within their respective organisations. In the first year, we started off with 30 students, of which 6 men.

METHODOLOGY AND IMPLEMENTATION

Process

The process for launching the "S.HE goes digital" programme can be divided into three phases:

Phase 1: Initiation. The idea for the programme was conceived by 3 (female) alumni from the two Free Universities of Brussels, VUB and ULB, currently at work in industry. As such there was a direct connection between the academic world and private sector. At this stage, value alignment was central to the efforts, as well as creating a small but committed group of ambassadors within the university, as the programme was to be legally organised by the university. These ambassadors had an affinity with industry and understood the challenges that the programme wished to solve, as well as the "lifelong learning" context. We will address this latter issue in the "Challenges section".

Phase 2: Definition. Next, a "charter" was designed at a high-level to protect the values shared by the group. Three light working groups were created: one on programme development, one on marketing and one on finance. This intermediate level of detailing the curriculum was crucial because it served as a mediator between the academic world taking care of implementation, and the needs of the business.

Phase 3: Implementation. Finally, a wider group of stakeholders was involved, and the detail of the programme content was mapped out by those responsible for the academic coordination of the programme at the university level (ie. lecturers, deans etc.). This phase also involved creating the necessary legal documents required by the university and government and guiding the programme's development and approval through both universities' administration procedures. This was quite an arduous process with buy-in required from both bottom-up and top-down levels from departmental level, educational programme, and faculty to university-wide strategic level).

Success factors

I would identify the following key factors in the programme's ultimate success:

1. External drivers. The programme was initiated, and the case made, by people in industry who were confronted daily with the problem we wanted to solve and who were, therefore, extremely motivated to solve it.

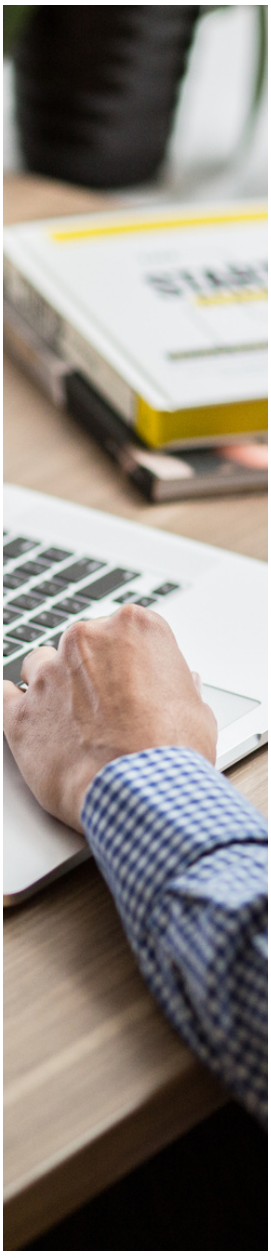
2. High-level support. The rectors of both universities were strong supporters of the idea, backing the development of the programme, but without intervening within university governance processes or strongarming decisions.

3. Allocation of administrative resources. This allocation of significant administrative resources from the earliest stages of the project was key to fulfilling all the relevant governance and approval requirements and to coordinate the many stakeholders involved.

4. Freedom in programme development. From the earliest stages of the project, there was a complete freedom to define the programme, which allowed us to develop a programme that met a real need from the labour market.

5. Stakeholder involvement. The awareness and articulation of the most relevant needs for the programme was present because of intense stakeholder involvement and relationships with the IT sector. As part of this stakeholder engagement, surveys were administered among IT professionals to better understand their needs. An HR roundtable was also organised to discuss potential solutions. The standards and ontologies of key sector organisations were also kept in mind throughout the process. Also, at a personal level, the people responsible for defining or elaborating the program had all worked both in academia and industry.

Challenges



I would argue that the main challenges in our case were organisational, and related to the new needs that lifelong learning poses. These challenges include:

1. Alignment with the university KPIs. How to create enthusiasm among university staff when teaching or organising the programme does not align with KPIs from the institution, and thus introduces a potential opportunity cost.

2. Finding teachers. The existing lecturers were already fully occupied, but the university rules require them to be responsible for the programme to ensure quality control and approval. This is even more problematic in other situations where a course does not carry ECTS credits, often the case for lifelong learning activities.

3. Schedules do not align. Most university processes are aligned with semester schedules (for example rostering, or setting up learning management systems).

4. Agility. Traditional university courses run over longer periods of time like a semester and content changes slowly. Our courses were much shorter - 5 to 10 weeks long – and needed to remain responsive to industry demands.

5. Balancing meeting industry demand and providing solid foundations that last for decades. The question how to divide the learning that happens within universities and at work, remains a difficult problem. A healthy symbiotic relationship is preferred, but not often easy to find.

The other main challenges we faced related to the different pedagogical context of lifelong learning – some that still need a satisfying answer:

1. Teaching to lifelong learners. Many teachers are not used to teaching adults, but rather to younger students that have followed a common school-level curriculum and thus share a common background. Also, the learning goals are imposed by the institution, which is absolutely not the case with lifelong learners. Lastly, while traditional students are expected to spend most of their learning time at home and on their own initiative, in corporate training, students expect to learn everything during the training.

2. Content. Often, teaching to lifelong learners requires a different pedagogical approach, and new content. This makes the quality-centred university organs feel uncomfortable: as the content is not covered by existing courses (taught in the regular university curriculum), how can we trust the quality? Does it mean our current programs are incomplete?

3. Examination and quality control. Traditional exams do not always make sense when students come from a different background and have different learning goals. The traditional model with fixed learning goals and fixed examination per student to verify the learning comes under pressure. How will universities then guarantee the quality of the learning outcomes for their students if they differ for each student? Is it acceptable to measure learning goal, regardless of the learning goals?

ANALYSIS AND EVALUATION

The following criteria will be used to evaluate the effectiveness of the program:

1. Feedback from graduates, gauging usefulness, relevance and effectiveness for their job.
2. Referrals.
3. Mutations of graduates to IT-roles within the company.
4. Hiring of graduates in IT-roles.
5. Public mentions of the programme.

REFLECTION AND NEXT STEPS

The lessons learnt from the development and delivery of our new Executive Master in IT essential scan be summarised in three parts:

Lesson 1. Still a large distance between academia and industry

First, when coping with the problem of defining a curriculum adapted to labour market needs, it is important to realize that the work has often already been done. Sectorial organisations (like ACM, IEEE in IT and engineering), standardization bodies and consultancies (like Gartner), typically have working groups and publications explaining the needs and trends of the labour market, and often even summarizing possible initiatives and solutions. Often, this literature is even known by academics.

The problem lies typically with a disagreement on the solution. There is not a common view on whether it is the role of academia to fill this gap, or whether an academic programme is the correct solution.

Which brings us to a lack of mutual affinity and discoverability. The issue is not that there is an unwillingness to work together towards a solution, and even less that the necessary knowledge is available. Rather, there is an unawareness of the problem. The academic categories are inexistent, and similarly, industry professionals are unaware of the fact that some problems have already been solved in academia.

Lesson 2: Need for high-level and administrative support to facilitate change management

Moving into lifelong learning or, takes time and a change in mindset for academic personnel that are used to regular semester programmes with homogeneous groups of students and fixed learning outcomes. Support from the highest levels of the university, as well as from people who are aware of the politics and sensitivities within the organisation, is essential to overcome the friction that may occur. According administrative and legal support is therefore often lacking and should be provided.

Lesson 3: Curriculum, positioning and marketing interact

Implementing a new programme, introduces two kinds of friction. First, fears of cannibalisation of existing degrees and their potential students (and thus impacting established power relations); and secondly, fears of a lack of market interest and financial sustainability.

In the case of “S.HE goes digital”, these fears were mitigated or avoided by:

- targeting an audience that is currently not yet served by the University (teaching IT to non-STEM students)
- collaborating with an intermediary sector and unemployment organisations to attract students rather than targeting the students directly. Similarly, time schedules, pricing, examination formats and many more details were defined after “contact” with the target audience, rather than being imposed from the outset by the curriculum designer.

HYPERLINKS & SUPPORTING DOCUMENTS

https://www.ulb.be/en/programme/fc-831

ARTIFICIAL INTELLIGENCE RESEARCH GROUP
Co-funded by the Erasmus+ Programme of the European Union
EPD Feedback Loop

WHITE ROSE INDUSTRIAL PHYSICS ACADEMY (WRIPA)

Cross institutional collaboration supporting physics graduates into technical careers

DR ANDREW MIZUMORI HIRST
White Rose Industrial Physics Academy

Co-funded by the Erasmus+ Programme of the European Union

EPD Feedback Loop

CONTRIBUTORS

ANDREW MIZUMORI HIRST
andrew.hirst@york.ac.uk

THOMAS KRAUSS
thomas.krauss@york.ac.uk

BETH MEDLEY
beth.medley@york.ac.uk

SOPHIE PACKMAN
sophie.packman@york.ac.uk

DAVID MOWBRAY
d.mowbray@sheffield.ac.uk

ALASTAIR BUCKLEY
alastair.buckley@sheffield.ac.uk

ANNE BOOTH
anne.booth@sheffield.ac.uk

SAMANTHA PUGH
S.L.Pugh@leeds.ac.uk

ALISON VOICE
A.M.Voice@leeds.ac.uk

SIDDEEQUAH AZMI
S.M.Azmi@leeds.ac.uk

RICHARD CAMPION
Richard.Campion@nottingham.ac.uk

SERGEI ZARKOV
S.Zharkov@hull.ac.uk

EMANUELE VERRELLI
E.Verrelli@hull.ac.uk

OLGA FERNHOLZ
Olga.Fernholz@nottingham.ac.uk

WHITE ROSE INDUSTRIAL PHYSICS ACADEMY

SUMMARY

The White Rose Industrial Physics Academy (WRIPA) is a joint collaboration between HEI Physics departments in the North of England and businesses. It was created to provide physics students with the opportunity to gain graduate attributes and work experience that better prepare them for graduate-level technical employment. The primary objective is to increase the number of physics graduates that pursue technical careers. This objective is realised by incorporating real-life learning within the curriculum that emphasises both factual knowledge and the application of that knowledge. The Academy developed a diverse range of interventions to embed work-based learning, professional skills development, and employer delivery into the curriculum. In total, from Sept 2019 – Dec 2022, the project engaged with 956 businesses and supported 238 students to participate in some form of work experience, with emerging graduate destinations data showing that WRIPA interventions have successfully supported students into graduate-level technical work.

WRIPA also increases the profile of technical industries through employer events and offers (digital) careers support to students. Analysis of the digital career support showed that it was well used across the WRIPA universities (62% student engagement) and was positively evaluated by students. In addition, website analysis has shown that students from non-WRIPA universities are use the digital career support provided by WRIPA.

CONTEXT

Within the Yorkshire, Humberside and East Midlands (YH+EM) economic region sits the White Rose Industrial Physics Academy (WRIPA). Inaugurated in 2014 and supported by HEFCE Catalyst funding, WRIPA is a 10-year collaboration between business and the university physics departments of Hull, Leeds, Nottingham, Sheffield, and York. WRIPA's aim is to provide physics students with the opportunity to gain skills, knowledge and work experience that will better prepare them for graduate-level technical employment, irrespective of where they choose to work. The outcome will be an increased and more relevantly trained flow of graduates into technical careers. This ambition is delivered through physics-contextualised activities based on curriculum development, improved undergraduate laboratories, careers support and the organisation of employer recruitment events. More recently, WRIPA has been awarded funding from the Office for Students' Challenge Competition to improve links between physics departments and regional employers, develop inclusive modes of work-based learning and support physics students to be more work mobile.

RATONALE

Physics-based technical industries contribute significantly to wealth creation in the UK and Ireland. It is estimated that physics-based businesses directly contribute 8.5% of the UK's economic output, more than £77bn per year[1]. Including indirect spending, the total impact of physics-based businesses on the UK economy is more than £220bn. A recent report concluded there were 1.85 million jobs in physics-demanding occupations across UK and Ireland in 2020, with the number growing over the past decade[2]. Despite such impressive statistics, employers find it difficult to recruit sufficient numbers of suitably qualified physics graduates and in parallel, students are often not aware of the range of physics employment opportunities available, or they lack the essential skills for entering these technical careers[3]. At the same time, undergraduate students are becoming much more aware of employability issues and seek exposure to industry as part of their degrees. However, there remain several significant challenges in connecting physics students to highly skilled (regional) employment opportunities, including:

- physics students connect poorly with central careers services
- physics students tend not to look broadly outside of academia when looking for a career
- physics students are often unaware of the regional employment opportunities that are available
- physics students disproportionately engage with large companies via institutional recruitment fairs and are not aware of the opportunities offered by SMEs where a high proportion of high value and technical (regional) employment exist

METHODOLOGY AND IMPLEMENTATION

To address these issues, WRIPA has developed a range of interventions that embed work-based learning, professional skills development and employer delivery into the physics curriculum. WRIPA also delivers extra-curricular support through careers support, the organisation of recruitment events and site visits, and digital career planning tools. Examples of WRIPA interventions are outlined below:

1. Curricular

1.1 Industrial projects that use technical businesses as clients: All 'WRIPA university physics departments' now run final year industrial projects for their students. The research project is provided by the industry partner in collaboration with an academic with relevant expertise. Participating students or groups of students then have the opportunity to apply their academic knowledge to address a technical business problem set by the employer.

1.2 Year in industry placements: All 'WRIPA physics departments' now offer year in industry programmes. Nottingham, Sheffield and York have direct UCAS entry to the year in industry variants of the degree programme. Leeds and Hull physicists internally transfer onto the year in industry programme once they commence their studies.

1.3 Work placement modules: The School of Physics & Astronomy, University of Leeds is now running a level 2 "Professional Experience" teaching and learning module, entitled: Physics into Work. As part of this 15-credit module undergraduate physics students complete 25-30 hours of work with a regional employer. Assessment is by poster presentation, reflective log, and employer evaluation.

1.4. Embedded technical employer input and development of graduate skills:

1.4.1 School of Physics, Engineering and Technology, University of York has embedded alumni businesses into three credited modules (Experimental Techniques, Medical Physics and Professional Skills). For the academic year 2022/23 four modules will have embedded delivery by alumni businesses. The additional credited module will be High Performance Computing. Alumni give presentations on how their current role and organisation relates to the specific module.

1.4.2 School of Physics & Astronomy, University of Nottingham has updated an existing physics communication skills (i.e., scientific writing and oral presentations) module and redesigned how communication skills are taught and assessed. For example, students are: (a) assessed on how well students communicate scientific ideas to a general audience, not the quality of the scientific material per se and (b) taught particular stylistic and rhetorical devices to construct an argument or discussion points.

1.4.3 School of Physics & Astronomy, University of Leeds have embedded a careers component into three year 2 and year 3 credited modules (Experimental Physics, Communicating Physics and Professional Skills. The embedded careers-related component enables students to create an employability action plan aimed at developing skills, work experience and knowledge based on SMART objectives.

1.4.4 School of Physics & Astronomy, University of Sheffield have embedded reflective practice and careers sessions alongside the taught curriculum. For example, a level two core 70 credits module (Classical and Quantum Physics PHY21005/6) has an employer/student networking event in Semester 1 along with employer talks. A novel aspect of this new module is a portfolio, which students must complete to pass the module. The portfolio has four components:

1. Physics and Maths Knowledge – students must complete and pass a minimum of 7 out of 9 pieces of homework. A failed piece of homework can be converted to a pass via a suitable reflection in their portfolio, hence students must act on the feedback received.
2. Scientific Investigation – students produce a poster or a project report. They also must describe one ethical consideration relevant to their lab work.
3. Personal and Employability Skills – students must evidence how they have engaged with various university resources related to employability and personal skills development. This component incentivises students to engage with extracurricular employability events, such as the annual WRIPA Physics careers' fair.
4. Final Reflections, Group Working and Actions on Feedback – students must evidence their contribution to group work, discuss what feedback they have provided to their peers and how they have acted on feedback.

1.4.5 School of Natural Sciences, University of Hull have integrated skills training into Experimental Physics and Mathematics II & III (labs) modules. This enables students to reflect on the technical skills they have learnt and how these skills 'fit' into the graduate labour market. In addition, local employer delivery has been embedded into a level four Data Science Year 4 module.

2. Extracurricular

2.1 WRIPA website and embedded digital careers planning tools: Students are increasingly interested to hear about businesses beyond their corporate messages (eg the organisations ethics, work/life balance). WRIPA has developed a series of digital tools and resources to enable physics students to make better-informed career choices and connect with (regional) employers. These digital career resources are embedded within the WRIPA website and are also used in employability workshops, credited professional skills modules and 1-to-1 careers meetings with students. Two interactive digital tools are highlighted below:

1. The Physics Careers Discovery Tool: This tool is aimed at students with 'low career readiness'. Often students with 'low career readiness' need a 'foundational' starting point to understand how the physics degree fits into graduate labour markets. By answering three simple questions (e.g What's your ideal work environment?) the users are presented with job role 'matches' (eg geophysicists), which give information on what the role is about, skills valued by employers and links to job vacancies and professional institutes.
2. The Physics Case Studies Tool: Based on student and physics alumni interviews, the tool enables users to access 76 cases studies based on search terms including 'experience type', 'region of work', as well as connecting with (regional) alumni businesses via LinkedIn.

2.2 WRIPA Physics Industry and Placement Fair: Since 2014, the WRIPA fair has been a huge opportunity for businesses to engage with a larger and more diverse talent pool of regional physicists drawn from eleven university physics departments from across the Midlands and the North. Typically, there are organised coaches from the 'non-WRIPA' university physics departments: (a) Loughborough; (b) Newcastle; (c) Keele and (d) Lancaster. The 2022 fair has evolved to become a hybrid event consisting of 'face-to-face' (e.g. employer exhibitor stands) and virtual (e.g. sector-specific panel discussions) elements. The fair also utilised 'Career Fair Plus' – an App to facilitate more meaningful and equitable student-employer engagement. The App helps students' confidence by providing pre-event information, including employer profiles, interactive floor plans and a schedule of presentations and panel discussions. A hybrid event enables us to address the various business needs with "strong brand" technical employers keen to retain digital engagement whilst less well-known and often local employers prefer face-to-face interaction with students. The 2022 fair was attended by 43 employers and 1100 UG/PG students. Of the 43 employers, at the 2022 event, 28 were based in the North of England giving the event a regional focus.

2.3 Site Visits: WRIPA has organised site visits to a wide variety of employers, including: (a) EDF Energy, Hartlepool; (b) Rolls Royce, Derby; (c) Castle Hill NHS Hospital, Hull; and (d) MBDA Systems, Stevenage.

ANALYSIS AND EVALUATION

1. Quantitative analysis

Tables 1-4 below show the level of engagement of both students and employers in the WRIPA initiatives. Table 3 additionally illustrates the subsequent graduate employment levels of students. Table 4 shows the extent of digital engagement with the WRIPA website

Table 1: Numbers of students and employers involved in project activities (Sept 2019 – Dec 2022)

STUDENTS		**EMPLOYERS**	
How many (individual) students were involved in the various curricular activities which were run as a result of this funding?	**~1503**	How many (individual) employers were involved in the design and delivery of curricular activities run as a result of this funding?	**100 (28)** – parenthesis indicates regional employers
How many (individual) students were involved in the various extra-curricular activities which were run as a result of this funding?	**~9172** (this includes 6.4K users to the WRIPA website)	How many (individual) employers were involved in the various extra-curricular activities run as a result of this funding?	**202 (79)** – parenthesis indicates regional employers

Table 2: Students' engagement with local employment opportunities, and employers' engagement with WRIPA

Student Engagement	
How many students are now undertaking placements, years in industry, or internships during their degree?	**238.** Additionally at least 26 students participated in (virtual) Bright Network internships during the summer of 2020 (From 2014-2019, **~250 students gained work experience**)
How many students are now intending to seek local graduate vacancies or opportunities after their degree?	Student survey: **28%** indicated they intend to look for a graduate opportunity in Yorkshire, Humberside and East Midlands. This figure increases to **38%** of respondents when the data is aggregated to The North/Midlands.
How many local graduates are progressing into graduate level employment with local SMEs and employers?	Across the academic years 2020/21 and 2021/22, **147** students have progressed into regional employment
Employer engagement	
How many (regional) graduate vacancies/ internships/placement opportunities are currently being advertised through WRIPA+	Across an academic year WRIPA advertises ~300-400 physics-related work opportunities
Total number of employers engaged with WRIPA	WRIPA engaged with 956 local businesses. 2014-2019, WRIPA engaged with 50-60 local businesses.
How many employers are consistently engaging with WRIPA to advertise graduate vacancies/	**103**
How many employers are consistently engaging with WRIPA to undertake curriculum development activities?	**77**

Table 3: Number of Physics graduates employed regionally (i.e. undertaking graduate level work with either their placement host or a different but related regional employer)

(The analysis relates to graduating years 2021 & 2022. Information based on known destinations of graduates).

Leeds Physics:	
WRIPA Student Engagement	**NON-WRIPA Student Engagement**
22 students **completed** either a 'Physics into Work' (PiW) placement and/or a Year in Industry (YiI) placement. All 22 students are in further study (6/27%) or graduate level technical work (16 / 73%) Of the 16 students that are in graduate-level technical work all work for a different but related local/national employer 3/16 students are in regional graduate level technical work	97 students **did not** complete either a PiW or YiI placement. 31 (32%) students in further education 13 (13%) students in non-stem jobs/non-graduate jobs 54 (56%) students in graduate level technical work 19/54 students in grad-level regional employment (35%)
York Physics	
WRIPA Student Engagement	**NON-WRIPA Student Engagement**
80 students **engaged** with WRIPA+ interventions (eg YiI, summer internships, 1-to-1 careers coaching / disability support) 52 (65%) students are in graduate level technical employment 18 (22%) students are in further study 10 (13%) students are in non-grad and/or non-stem roles 21 (40%) students of those in graduate-level employment are regionally	44 students **did not engage** with WRIPA+ interventions 14 (32%) students are in grad level technical employment 19 (43%) students are in further study 11 (25%) students are in non-grad and/or non-stem job 1 student in graduate-level employment are working regionally

In summary, Table 3 shows that:

University of Leeds:

- Students that complete PiW or YiI more likely to be in a grad-level tech role
- Data suggests students that complete PiW or YiI doesn't influence them to remain in the region

University of York:

- Students that engage with WRIPA are more likely to be in graduate-level technical work
- Students that engage with WRIPA are more likely to be in regional graduate-level technical work

Table 4: Digital Engagement of physics students with the WRIPA website (academic year 2021/22)

WRIPA University	No. of Unique Users / Sessions	Percentage of UG students that have engaged with the WRIPA website
Hull	Unique Users: 115 Sessions: 208	78% (total number of students = 147)
Leeds	Unique Users: 193 Sessions: 284	35% (**Note:** Leeds have 550 UG physics students but specifically directed their BSc finalists to the website of which there are approx. 100)
Nottingham	Unique Users: 199 Sessions: 376	33% (total number of students = 600)
Sheffield	Unique Users: 207 Sessions: 293	91% (total number of students = 227)
York	Unique Users: 290 Sessions: 548	54% (total number of students = 540)

In summary, Table 4 shows that across the academic year 2021/22, 1004 physics students engaged with the WRIPA website with 1,709 sessions (lots of returning users). Hull, Sheffield and York has the highest fraction of digital engagement with 78%, 91% and 54% of students respectively using the website. Leeds specifically direct only their BSc finalists to the website and so the fraction of digital engagement will be considerably higher than reported in Table 2. Nottingham had the lowest fraction of students (33%) engage with the website although this fraction represents nearly 200 undergraduate students. Overall, across the WRIPA consortium ~62% of UG physicists engaged with the WRIPA website (figure based on Leeds BSc students only).

It is also worthy to note that from 1st Sept 2021 – 4th Dec 2022 the redesigned website has garnered 47,927 page views with ~6.4K individual users and ~10K sessions (total of individual users and returning users).

Digital engagement from non-WRIPA Universities: Website data analytics suggests that students from non-WRIPA universities are utilising the WRIPA website. There is strong digital engagement from locations, including Edinburgh, Birmingham, Newcastle and Manchester. In the latter two cases, WRIPA has disseminated its digital careers tools and resources to these institutions to help support their respective physics students. For example:

- **Use of the Physics Careers Case Studies Tool**: From 1st Sept 2021 – 4th Dec 2022 this digital tool has been used by 1.9K individual users with 2.6K sessions (i.e. lots of returning users). As of December 14th 2022 there are 70 case studies. 22 case studies (31%) promote job roles and employers in Yorkshire, Humberside and East Midlands. The number of case studies increases to 36 (51%) if the geographic location is increased to The North / Midlands. This highlights the importance of this digital tool to promote regional physics-related roles and technical employers.
- **Use of the Physics Discovery Careers Tool**: From 1st Sept 2021 – 4th Dec 2022 it's been used by 774 individual users with 1.1K sessions (i.e. lots of returning users).

2. Qualitative Analysis

The evidence below explores the positive student and employer feedback to WRIPA interventions.

1. School of Physics, Engineering and Technology, University of York – Student feedback from embedding alumni businesses into 2021/22 physics modules:

1.1 Experimental Techniques (38% response rate)

The majority of students (67%) were aware that the module was relevant to graduate roles. A majority (83%) of respondents now feel they have a better understanding of how the module fits into graduate roles and industry The majority of students (67%) said they are more likely to apply for a technical role with 33% saying no or unsure. General comments – "glad it's part of a module so it doesn't clash with other things but would be good to hear it earlier rather than at the end of the module". "The presentations were really helpful with learning about how different sectors use things from the experimental techniques module". "It was very insightful to hear about student's first hand experiences and helped me gain an idea of what technical industry roles entailed

1.2 Medical Physics (57% response rate)

The majority of students (68%) were aware that the module was relevant to the NHS Scientific Training Programme (STP). 100% of respondents now feel they have a better understanding of how the module fits into roles/industry. The majority (88%) of respondents said they were likely to apply to the STP with 12% saying no or unsure. General comments – "it would be helpful to have these talks before module choices to encourage others to choose Medical Physics and also to understand the STP". "Found the talks really useful, and it was good to see a practical application of the teaching". "I had heard of the STP before the module but hearing from alumni really made me consider applying". "It was very useful and informative. It definitely helped fuel my passion for medical physics".

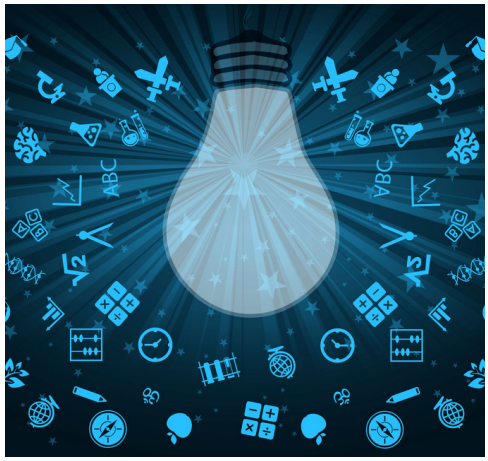
2. School of Physics, Engineering and Technology, University of York - Student focus group feedback on how the digital Physics Careers Case Studies tool influences students' attitudes to graduate employment and career aspirations.

Statement	Average (Mode) Score (Scale 1-5)
I understand better how my skills and interests match to a variety of job roles.	4 (agree)
I have a clearer understanding of the types of roles I would like to do, either as an undergraduate (internship/placement) or graduate.	3 (neutral)
I am more likely to consider a technical career in industry.	2 (disagree)
I am surprised by the broad range of roles that a physicist can do.	5 (strongly agree)
I am more likely to consider applying to employers within the "Yorkshire, Humber and East Midlands" region for roles.	4 (agree)
I can relate to the students in the case studies and can envisage myself being in their shoes in the future.	5 (strongly agree)

Student feedback:

"Before enrolling in University, I was quite sure that I wanted to do a bachelor's, a master's, and a PhD. However, I used the WRIPA Physics Careers Discovery Tool to help narrow down my choices. Technical Author immediately jumped out at me. I looked into the field extensively and deemed that it was a perfect combination of writing (which I love) and employing technical skills on a daily basis, while constantly learning. WRIPA quite literally changed my life."

3. Employer engagement and impact feedback



To explore the impact of WRIPA and our students on our industry partners and employers we have a range of employer case studies. These can be viewed on our WRIPA companies webpages. To find out more about the impact of student internships on our employers and on their own skill levels and career awareness see our range of student case studies.

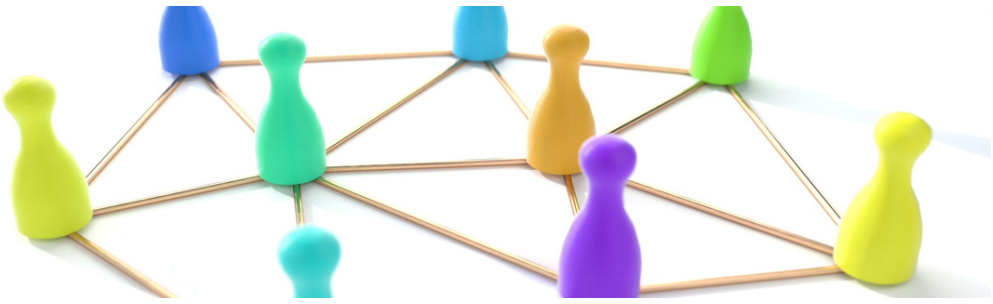
In addition, we have collected a range of employer testimonies in line with the examples below:

3.1 Laser Optical Engineering feedback on their University of Nottingham physics placements students:

"Laser Optical Engineering Ltd (LOE) is a company based upon the industrial estate at East Midlands Airport and prides itself in delivering advanced laser engineering concepts through to real-world customer applications. LOE was fortunate in being able to host three students from the Physics Department. […]. All three students were exceptional and have made significant contributions to the various research programs currently underway at LOE. […]. At the end of one of the internships we were successful in recruiting one of the students to now become a full-time employee, one student is set to return to undertake his PhD, the third is still ongoing with the internship. This has been a highly satisfying experience for both the students and the company. I look forward to further involvement in your program as more students become available."

3.2 Bluesmith Information Systems on the value of their relationship with Leeds Physics

"The relationship that Bluesmith has with the School of Physics and Astronomy has been invaluable, and we regularly take on fantastic graduate talent as a result. I really enjoy meeting with students to discuss the broader opportunities that their degree presents in the world of work, which can seem scary at times. Not everyone studying Physics is looking for a career in CERN, NASA, research or teaching! Bluesmith is a small 65 person data analytics specialist, and the attitude, attention to detail and analytical skills we find in physics graduates is exactly what we are looking for. […]



CONCLUSION

The WRIPA project, from Sept 2019 – Dec 2022, has engaged with 956 businesses and supported 238 students to participate in some form of work experience. 'WRIPA staff' have worked with a diverse range of departmental learning and teaching staff to integrate employability into the curriculum. For example, Leeds Physics created the 'Physics into Work' module and Sheffield Physics embedded employability, work-based learning and skills training at a programme-level. Other examples include York Physics embedding employer delivery into three teaching and learning modules and both Nottingham Physics and Leeds Physics revising existing modules (Communication for Physicists and Professional Skills respectively) to embed graduate attributes into course content. Emerging graduate destinations data suggests that WRIPA interventions do support students into graduate-level technical work. Because of the pandemic the project placed a stronger emphasis on digitally supporting students to make better-informed career decisions, connect with employers and to offer information on physics-adjacent careers. From 1st Sept 2021 – 4th Dec 2022 the redesigned website has garnered 47,927 page views with ~6.4K individual users and ~10K sessions (total of individual users and returning users). Google analytics suggests that across the WRIPA universities ~62% of UG physicists engaged with the WRIPA website. Website data analytics also suggests that students from non-WRIPA universities are utilising the WRIPA website. Student feedback about the WRIPA website and digital tools was positive and highlights the role digital career resources can play in supporting students to make better informed career decisions. These digital resources complement curricular work-based learning opportunities, embedded delivery by employers and recruitment and networking events.

REFLECTIONS AND NEXT STEPS

The evaluation and feedback outlined above show that the activities of the WRIPA have been successful and much has been learned. Curricular interventions support an equitable approach to careers and employability and this approach will continue. Students need near-peer and early career alumni role models to support them to apply for roles and connect with employers. Smaller (regional) employers are less visible to students than larger organisations. This imbalance will be challenged by the continued embedding of employers into the curriculum (eg presentations, final year projects and placements) and by promoting their organisations and vacancies on the WRIPA website. In the latter case, work is in progress to embed a jobs board into the WRIPA website. University-Alumni business relationships will be grown and sustained to support students into (regional) employment and to raise the visibility of physics-relevant technical sectors. Physics students will be encouraged to be more "digitally engaged" – utilising digital career resources and tools to make better-informed career decisions, and connect with and market themselves effectively to future employers.

REFERENCES AND HYPERLINKS

https://www.ncub.co.uk/insight/the-unemployability-of-physics-graduates-in-technical-careers/

1."The importance of Physics to the UK Economy", Institute of Physics (Deloitte),October 2012

2. "Unlocking the potential of physics skills in the UK and Ireland", Institute of Physics, (Emsi Burning Glass) January 2022

3. "The (un)employability of physics graduates in technical careers", (Andrew Hirst) National Centre for Universities and Business", October 2018

All 'WRIPA articles' can be accessed here: https://wripa.ac.uk/research-events/

WRIPA fair videos:

https://www.youtube.com/watch?v=vG0pFunRU9s

https://www.youtube.com/watch?v=hD5SceL9lxM

WHITE ROSE INDUSTRIAL PHYSICS ACADEMY

Co-funded by the Erasmus+ Programme of the European Union

EPD Feedback Loop

GRADUATES FOR A GREATER MANCHESTER: ENHANCING GRADUATE SKILLS AND EMPLOYABILITY FOR THE TECH AND CREATIVE INDUSTRIES

ADAM HUGILL

FIONA CHRISTIE

CERYS JONES

MANCHESTER METROPOLITAN UNIVERSITY AND UNIVERSITY OF MANCHESTER

Co-funded by the Erasmus+ Programme of the European Union

EPD Feedback Loop

CONTRIBUTORS

ADAM HUGILL

Email :
a.hugill@mmu.ac.uk

CERYS JONES

Email:
cerys.jones@mmu.ac.uk

FIONA CHRISTIE

Email:
f.christie@mmu.ac.uk

SUMMARY

Graduates for a Greater Manchester (GfGM) was a three-year project led by Manchester Metropolitan University Careers Service (in partnership with University of Manchester Careers Service) - one of sixteen funded by the Office for Students (OfS) Local Challenge Fund to tackle employability support for 'local' students.

It sought to develop tech and creative digital skills amongst student participants, whilst providing opportunities to apply and gain recognition for these skills, with a view to enhanced employment outcomes. It also sought to develop greater connectivity between participating Universities and local tech and creative digital SME networks and industry bodies in the city region. The project was delivered via two sub-projects- 'RISE Digital' at Manchester Metropolitan University (MMU) and the 'Digital Capabilities and Careers Self-Efficacy' subproject at the University of Manchester (UoM).

Our evaluation of the Graduates for a Greater Manchester Project has shown the success of both sub-projects in achieving their employability targets but also in their development of closer partnerships with City regions policy makers and industry representatives. The projects achieved this success despite the disruption of the COVID pandemic. Areas for future development include expanding the range of employer partners and paying greater attention to the 'demand side' of the labour market within the tech and creative digital industries.

This case study has been adapted by Adam Hugill and Cerys Jones from the Graduates for a Greater Manchester final report (Christie et al, 2022) lead by Fiona Christie. The full report can be found here.

Manchester Metropolitan University

CONTEXT

The original OFS competition call for funding (OFS, 2018) recognised the diverse and often unequal nature of the UK graduate labour market. While Greater Manchester overall has a relatively buoyant labour market and a strong higher education sector, it was recognised that the benefits of these two positive factors were unequally shared across the local population. Our project combined a focus on the growth areas of the tech and creative digital industry and the graduate prospects of local students from less advantaged backgrounds.

A top priority for the project from its inception was the digital skills development of students. Our aims were to equip students better with the skills they needed to satisfy labour market demands whilst helping to establish a pipeline of talent into the tech and creative digital industries. The successful partnership bid to the OfS was able to highlight how a focus on tech and creative digital skills aligned with what city policymakers and sector representatives were calling for. The Decent Work and Productivity Evaluation team (DW&P - Manchester Metropolitan University, Decent Work and Productivity Research Centre) were able to create additional insights on the city region labour market context in two initial reports (Christie & Lupton 2020, Ball et al 2020), which further supported the project's rationale.

Local economic context

The Greater Manchester Local Industrial Strategy (2019) built on the findings of the Greater Manchester Independent Prosperity Review's (2018) and its detailed analysis of the local economy and the social and environmental challenges. In the Local Industrial Strategy, strong opportunities for growth are identified as digital and creative media, health innovation, clean growth and advanced materials and manufacturing. All these broadly align with the 'Graduates for a Greater Manchester' project's focus on tech and creative digital sectors. The Prosperity Review authors also identified a misalignment between learning provision and sector requirements most clearly in Digital and Creative, and Business and Professional Services. The Local Industrial Strategy responded to this with numerous policy aspirations regarding people and skills. A specific one is - 'a skills and work system that enables people to realise their potential, supports emerging industries and is responsive to employers' (2019). Universities and the education they provide are part of this process of creating a skilled workforce and helping to ensure a skilled and qualified workforce, that can respond to high tech and digital needs. However, the Prosperity Review also highlighted that sometimes high skilled labour is under-utilised. The Review found that productivity was being significantly limited by low demand for skilled labour and poor skills utilisation by businesses and in the public sector. This speaks to a wider national debate about a traditional over-emphasis in policy on the supply of skills at the expense of demand.

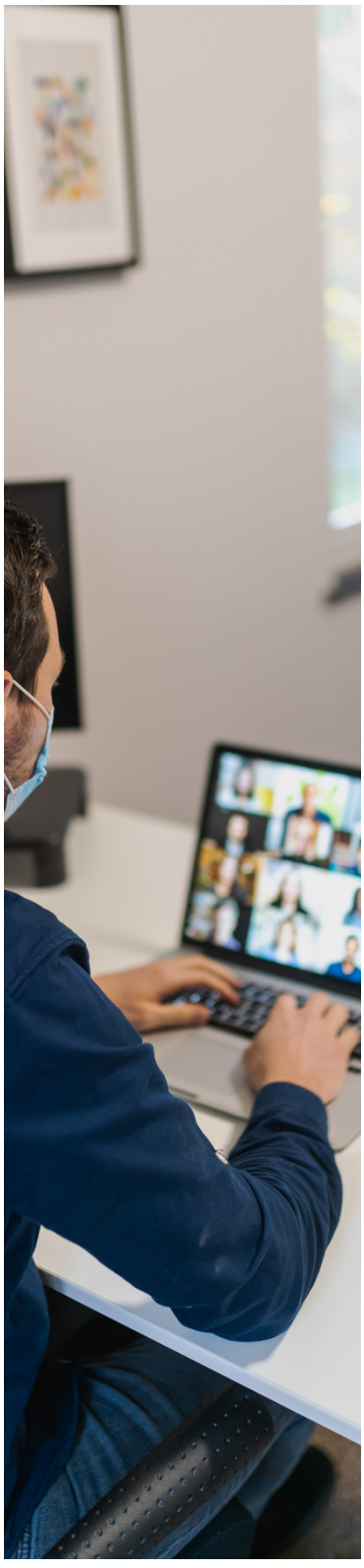
A recognition of this shared responsibility for skills development, which balances supply and demand issues, led to the partnership working that was integral to the GfGM project. This partnership working was evident from the planning stage led by the project Steering Group to the design and delivery of the final activities and initiatives. Alongside the projects headline aims, was a focus on the wider issues of employability, career self-efficacy and confidence as a foundation for digital skills development. Career self-efficacy (drawing upon psychological theory) was explicitly included in the name of the UoM sub-project but was equally relevant to the MMU's RISE Digital project, itself part of a larger university project to support all aspects of student and graduate employability.

METHODOLOGY AND IMPLEMENTATION

As previously mentioned, the overarching GfGM project was delivered via two sub-projects - 'RISE Digital' at Manchester Metropolitan University (MMU) and the 'Digital Capabilities and Careers Self-Efficacy' subproject at the University of Manchester (UoM). RISE Digital was one stream within a large-scale university-wide programme to enable students to claim academic credit for traditionally extracurricular activity, including one off events, self-directed online courses, internships, skills development courses, and more.

Project activities ran from the Autumn of 2019 for three years until September 2022. It should be noted that the impact of the disruption of Covid-19 was enormous. For example, the first cohort of UoM students completed their activities in the Autumn of 2019 in a traditional face-to-face format. However, with the commencement of the first national lockdown in March 2020, online and hybrid modes of delivery were introduced and remained in place until the end of the project in September 2022.

For UoM, in contrast, the embedded nature of the sub-project within the Psychology programme meant the impact of lockdowns was less dramatic as all planned curriculum activity was adjusted to meet the new format of teaching and learning across the university. However, subproject leaders and students at UoM commented on how the disruption of Covid-19 firmly drove home the importance of digital skills amongst Psychology students – students who had previously been indifferent to use of digital skills.



RISE Digital (MMU)

The RISE Digital project was actually one stream within the larger, university wide programme RISE, an initiative designed to enable students to claim academic credit for traditionally extra-curricular activity. These activities included one off events, self-directed online courses, internships, 4–8-week skill development courses, and more. The RISE programme is open to all students at MMU and features several different activity strands, one of which is Digital. The OfS grant specifically funded the RISE Digital activities outlined below[1]:

- 4/6 week Creative Digital Incubators in each year, 2 Digital Photography Bootcamps, 1 UX Design Bootcamp and 2 sets of fortnight long Marketing and Production Placements.
- 6 week Media for Wellbeing Advocacy activity in all three years.
- Coding introductory sessions named "Make a ….. with Code" sessions included music, stories, and art.
- Digital Eagles – Involved all years offering access to specialist training on AI, Influencing and future proofing your profile
- 2 sets of social media introductory sessions focussing on using social media to build a personal brand and to use it professionally.
- Digital career workshops.
- Online certifications for Adobe & Microsoft.
- Created an online learning resource for student learning in social media.
- 2x one day events called Creative Data lab.
- 2 sessions on more career confidence themes and weren't exclusively focussed on digital, but a wider remit.
- 2 sessions for us on 'Using LinkedIn to Smash your job search'
- 2 x Design Thinking Self-Study Kits
- 3 x sessions for us on 'Content marketing' 'International MarComms Management' and 'Influencer Relations Management'

[1] It should be noted that there are many more activities delivered under the RISE Digital umbrella but these activities are funded by mainstream university funding and so not listed here.

Digital Capabilities and Careers Self-Efficacy (UoM)

The University of Manchester GfGM sub-project focused on the BSc Psychology programme and their second year 20 credit modules. The project involved the enhancement of two existing academic modules to build the digital skills and confidence of its students. In their second year, Psychology students either completed a work placement unit (The Short Work Placement Unit) or a career management unit (Career Management). The OfS project funded the development of a new blogging assignment and the associated blogging and social media training delivered to students on both modules. They completed this reflective blogging assignment in April each year, reflecting on their experience of digital skill development and digital confidence.

The OfS project also involved the creation and delivery of an accredited 'Building Confidence' academic module delivered as one option within the Career Management unit. The aim of the module was to build student confidence, and help them engage in career enhancing behaviours, through the discovery and exploration of their career options and the new employment sectors open to them. These new sectors included a specific focus on digital.

During the final year of the project, an online Building Confidence resource was developed to provide an alternative option for building student confidence. This resource took the key elements and success factors of the academic module and built them into an articulate RISE learning resource, which was then embedded into core University wide services as part of their digital skills offering available to all students. The final year of the project then saw the creation of a two-day experience for Psychology students designed to build their digital and creative career awareness, with a focus on the transferability of their psychology learning to the sector. The students were also given the opportunity to build their digital skills through a series of bespoke training workshops.

ANALYSIS AND EVALUATION

For the MMU sub-project team, the impact of COVID and national lockdowns meant that some of the intended activities were significantly impacted, with the providers of RISE Digital activities having to rapidly adapt their activities for online delivery. To expand the offer to students at a time of unprecedented lockdown, there was also a rapid shift to scale up short intensives (e.g., everything from one hour to one-week activities), in addition to more extended activities envisaged in original "Third Term model".

The DW&P evaluation explored how partners delivering RISE Digital activities experienced benefits (e.g., ability to scale up) and some drawbacks (eg. harder to identify talent) from in a shift to online. Whilst the courses and activities designed by partner organisations were not always able to be delivered as intended, the partners' digital expertise meant they were able to adapt efficiently to new demands. Indeed, many delivery partners (already immersed in tech and creative digital fields) commented that the move to online delivery had been relatively easy for them. Having said this, even these digital specialists missed face-to-face interactions and argued that the combination of both in-person and virtual activities were crucial for the development of students' more generic employability skills.

Questions were raised about what mode of delivery worked best for developing different purposes in relation to various skills. For example, short online activities were considered good for working at scale, for basic upskilling, for creating awareness of job roles, and for building digital confidence. Indeed, partners observed that online activities required students to do more independent exploration of digital skills and that this in turn could lead to enhanced independent learning skills greater self-learning ability, which tested their own skills as activity creators.

Overall, the shift to online learning, which was an unexpected consequence of by the pandemic, was helpful to the project as it served to accentuate the role and value of digital skills as moves to online learning and delivery were accelerated.

The context in which students undertook these projects was notable. The value of higher education in giving students the opportunity to still gain experience and skills at a time of crisis cannot be under-estimated. Many students recognized the opportunities that the project gave them to keep engaged and connected during lockdown restrictions. Overall, students saw their participation as a valuable employability opportunity during in a period when that many other career options were closed to them.

Action research conducted by delivery partners during the delivery process provided additional insights into the about students' experience of two projects and this were created proactively by delivery partners which formative feedback assisted them in planning the next iteration of activities. Findings from their research work align with the themes generated by the DW&P Evaluation team. Details of this quantitative and qualitative evaluation are detailed below.

Quantitative analysis- performance against initial success criteria

On commencement of the overall GfGM project, success criteria for both sub-projects were established. Many of these initial criteria were quantitative outcome targets. The projects performance against these initial criteria are outlined below:

MMU Number of credits accrued by students		
Date	Target	Actual
2020	1500 credits (Equivalent to 50 students)	Practice credits: 4,290 credits
2021	3000	Practice credits: 5,535 credits
2022	6000	Practice credits: 9,930 credits

MMU Hours of skills training in T+CD		
Date	Target	Actual
2020	2000	6,696
2021	4000	10,161
2022	8000	41,985

MMU Hours of placement and project work		
Date	Target	Actual
2020	1000	2516
2021	2000	21527
2022	4000	14552

MMU Students Engaged in T+CD		
Date	Target	Actual
2020	100	Engaged: 634
2021	200	Engaged: 861
2022	400	Engaged: 750

MMU Number of students holding a relevant T+CD external accreditation		
Date	Target	Actual
2020	100	176
2021	200	155
2022	400	167

UoM Number of graduating students having engaged in a digital literacy assignment and reflection on skills.		
Date	Target	Actual
2020	200	204
2021	200	232
2022	200	307

UoM Number of students from population of interest engaging in targeted career enhancing behaviours in their 2nd and final year of study.		
Date	Target	Actual
2020	50	36
2021	100	133
2022	200	200

The results above show the level of success the project enjoyed over the three years of activity, with the majority of our annual targets significantly exceeded. In addition, the increased ratio of hours of skills training to the numbers of students engaged highlights the increasing engagement of students over the course of the project. One area which requires further improvement is the number of certifications awarded. This slower progress was largely due to these processes taking longer to adapt to hybrid approaches following the pandemic than expected.

Qualitative analysis- RISE Digital (MMU)

The DW&P Evaluation team conducted qualitative research interviews with a range of partners and stakeholders in the summer of 2020 and 2021. These partners were responsible for providing and delivering a range of RISE Digital activities and courses for students from the commencement of the project in July 2020 onwards. This evaluative research evidences the 'deep partnerships' of the sector specialists who collaborated with RISE Digital project leaders to create learning experiences for students.

The interviews sought to understand partners' perspectives of the RISE Digital sub-project at MMU. Moreover, the interviews explored the extent to which the RISE Digital skills sub-project successfully addressed labour market needs and the effectiveness of industry partnerships in delivering these specialist activities. The time lapse between partners' delivery of activity and their subsequent evaluation interview varied due to the dispersed nature of RISE Digital provision.

Overall, the evaluation evidenced an increase in the perception of positive and lasting partnership between the parties. Similarly, all partners were supportive of a shared social responsibility to develop student skills and address skills gaps. The partners recognised their important role in providing placement opportunities, short intensive courses, project work and networking opportunities that were aligned with emerging job roles, occupations, and skills gaps. The positive working relationship developed between industry partners and the RISE Digital team also enabled them to adapt their activity design swiftly (eg. as a response to Covid-19) and to ensure they delivered activities that were appropriate to meet the needs of the wider digital sector (eg. addressing skills shortages) but that would also appeal to the students.

Partners involved in RISE Digital were overwhelmingly supportive of the sub-project. RISE Digital was considered mutually beneficial, valuable, and positive for both students and for themselves as employers, stakeholders and learning providers. Partners described the success of RISE Digital in raising awareness of the sector and contributing to upskilling the next generation and providing a talent pipeline to fill entry level positions. Some partners, who also had a role as recruiters, saw engagement in RISE Digital as a valuable opportunity to spot future talent. All partners acknowledged the success of the project in delivering effective courses and were keen to continue their collaboration with MMU and RISE Digital in the future.

In addition, the RISE Digital programme was considered an effective way of enabling students to gain valuable experience which would help students transition from university to work. Therefore, RISE was seen as mutually beneficial in helping to creating a mini-digital skills ecosystem through which:

a) students taking degrees aligned to a digital sector and non-aligned degrees could learn about Technical and Creative Digital skills and careers and gain a more realistic understanding of what to expect from their first job.
b) employers could foster and find new talent whilst also addressing both existing and emerging skills gaps.

At the level of the broader GfGM project, the collaboration between the two sub-projects facilitated by the project Steering Group and project team meetings led to the sharing of partner contacts for mutual benefit. For example, some of the partners who had worked with MMU, went on to support digital skills activities at UoM.

Both the evaluation carried out by UoM and that conducted by the DW&P Evaluation team for RISE Digital at MMU, questioned the value of one of our original Key Performance Indicators – that of impact on students' career intentions.Instead, a more valuable indicator was the impact of both sub-projects on subjective feelings of confidence. These confidence levels increased across the board, with students reporting higher career self-efficacy and preparedness to respond to challenging situations. Although digital skills improved (more so at MMU due to the specific focus of this sub-project), most students were more appreciative of the increased confidence levels that they acquired when interacting with others and undertaking project tasks. This improvement in interpersonal and employability skills reported through both sub-projects was particularly appreciated against a backdrop of increased anxiety caused by the pandemic. Interestingly, the UoM sub-project foregrounded increases in confidence and career self-efficacy in their work more strongly, but this also emerged as a strong theme for MMU students.

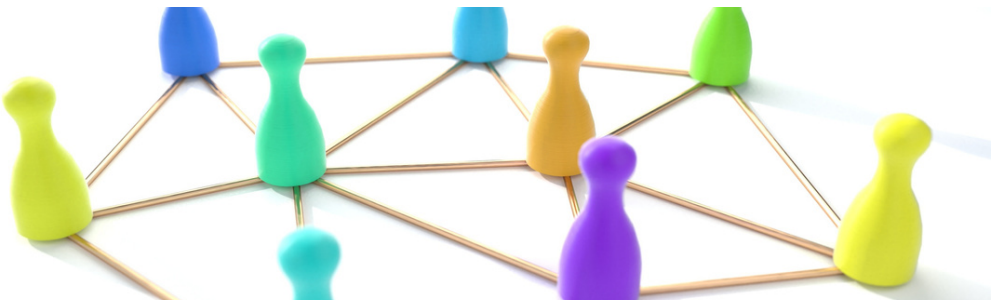
Overall, students showed positive changes in their digital confidence levels as the result of their participation in the programme. Although some students saw these programmes as very short-term and commented on the need for longer duration, many appreciated that short experiences could introduce topics and spark interest and confidence to learn more. For instance, some students started engaging with specific digital platforms (eg. LinkedIn, Futurelearn and HobSport) because of their exposure to the project and the internships they had experienced. They also commented that after the participation in the programme their confidence in using digital skills in other parts of their lives had increased. The need to be adaptable and to continually learn new digital skills emerged as a theme in student reflections. Students commented on the relationship between developing interpersonal and social skills which complement digital capabilities. For instance, students were particularly positive about learning teamwork skills in an online learning context and facing the difficult challenges that this posed.

Qualitative analysis- Digital Capabilities and Careers Self-Efficacy (UoM)

The UoM sub-project team created a career self-efficacy survey based on the work of Bandura and Taylor and Betz (1994) that students completed at appropriate times before and after activities took place to measure impact and change. Internal reports were created each year using this data. The UoM sub-project put greater emphasis on broader career self-efficacy rather than specific digital career self-efficacy. Having said this, students were required to develop digital skills in creation of their digital literacy assignment. For UoM students, the project increased the confidence levels of year one (2019-20) and year two (2021-22) participating Psychology students. In terms of both career self-efficacy and digital capabilities, confidence levels had significantly increased after the completion of the project activities.

In all three years of the project the biggest impact on confidence levels came from those behaviours that the students originally felt the least confident about; namely, connecting with people doing different roles and marketing themselves to others. Increases in confidence levels as reported by students resulted from being pushed outside their comfort zones, having to deal with new and challenging tasks, and working with different groups of people. Experiencing unfamiliar situations and communicating with new people was seen as a key benefit of the project.

Students seem to have increased their confidence levels following support from either the Careers Service or the career module, with many citing help with applications, coaching for interviews and confidence building sessions as important confidence drivers. Students regularly commented on the significance of the compulsory careers units – either the short work placement module or the career management unit (which included assessed video interviews, assessment centres and a confidence building option). Work-based learning seems to have been particularly appreciated by students and seen as a key driver for their increased confidence levels after participation in the programme. All types of part-time work for students – from customer service positions to support worker roles – as well as short work placements and volunteering appear to have had a positive impact on student confidence levels. The increased confidence levels of students led to an improved sense of self and career behaviours as evidenced in their self-described attitudes to career situations and opportunities.



REFLECTION AND NEXT STEPS

Whilst longer term data trends on entry to the tech and creative digital labour market is limited, both sub-projects have been successful in achieving the targets set as part of their original success criteria.

For MMU, closer alignment with the city region's policymakers and industry representatives has been cemented through three years of regular meetings (e.g., Steering Group) and delivery (eg. partners running RISE Digital activities). This has contributed to improved connectivity between students and the regional labour market. Students on non-aligned degree programmes have had the chance to develop digital confidence and skills, which would not have been possible without the RISE Digital stream. Additional learning opportunities have been created for students that can be recognised for academic or practice credits providing an impetus for engagement in activities that may have previously been dismissed by students as "just extra-curricular".

For UoM psychology students their enhanced digital skills were able to be paired with greater career self-efficacy, their interventions supporting them to upskill digitally whilst also improving their practical career learning.

A three-year funded project involving multiple collaborators provides ample opportunity to consider lessons for the future. Moving beyond the pandemic, future activity development needs to consider the benefits and drawbacks of how and what activities are delivered. Both sub-projects also highlight the nuanced nature of career self-efficacy and the steps required to facilitate this. This is particularly the case for the RISE Digital sub-project which relies on the optional engagement of students and partners. Maintaining this engagement will require careful consideration of the intended outcomes of their planned activities, as well as their duration (eg. short intensive, or longer-term courses), format (eg. soft skills development, artefact creation, hard skill development) and mode of delivery (face to face, virtual online, or hybrid). In contrast, the UoM sub-project's more compulsory nature affords greater opportunities to embed and stage digital skills acquisition and even scale up learning across the University.

Graduates for Greater Manchester has been very successful in meeting its outcomes. Its relevance and value have only been accentuated by the impact of the pandemic. Stakeholders and partners are now turning their attention to a consideration of the legacy and sustainability of the activities that sit under the GfGM umbrella. Areas to consider for university partners going forward include expanding the employer network and paying more attention to the 'demand side' of the employability ecosystem in tech and creative digital industries.

The annual Manchester Digital Skills Festival provides an opportunity to do this and was attended by sub-project leaders in 2022. The festival offers an opportunity for universities to raise awareness amongst tech and creative digital employers of the opportunities to work with them and to plug their skills gaps for graduate level jobs. These events that bring employers together with students and university stakeholders are an essential channel for developing and enhancing university and employer partnerships. They also educate sector employers as to the value of 'fusion skills' alongside the technical skills (eg. software development) which they often report shortages of in entry level staff.

Several new initiatives which take forward best practice learning from the project, are currently under discussion. These include, the creation and development of e-learning modules, online certification, ongoing collaboration with organisations to create further 'experiential learning', reviewing evaluation and assessment practices, sharing best practice across institutions, and building digital fluency as part of ongoing 'business as usual KPI's. University partners are also exploring how they support this process through the provision of more in-depth micro-credential learning in tech digital skills. Our project has shown us that there is currently tremendous demand in this area of provision, and it is imperative that universities increase short course and CPD opportunities to support non-linear careers and enable our students to adapt to an ever changing graduate labour market

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Manchester Metropolitan University

Co-funded by the Erasmus+ Programme of the European Union

EPD Feedback Loop

THE PEER ENHANCED E-PLACEMENT (PEEP)

A Case Study Exemplar For Online Work-Based Learning Placements

LISA TAYLOR
Medicine and Health Sciences, University of East Anglia

GILLY SALMON
Education Alchemists Ltd UK

Co-funded by the Erasmus+ Programme of the European Union

EPD Feedback Loop

CONTRIBUTORS

LISA TAYLOR

Professor of Employability and Learning Innovation and Associate Dean for Employability for the Faculty of Medicine and Health Sciences, University of East Anglia Norwich UK

Email : Lisa.Taylor@uea.ac.uk

GILLY SALMON

Professor, CEO and Principal Consultant – Education Alchemists Ltd UK

Email: gillysalmon@education-alchemists.com

SUMMARY

Introductory video by Lisa Taylor, Learning and Gilly Salmon https://youtu.be/ivbrIuE9PZM

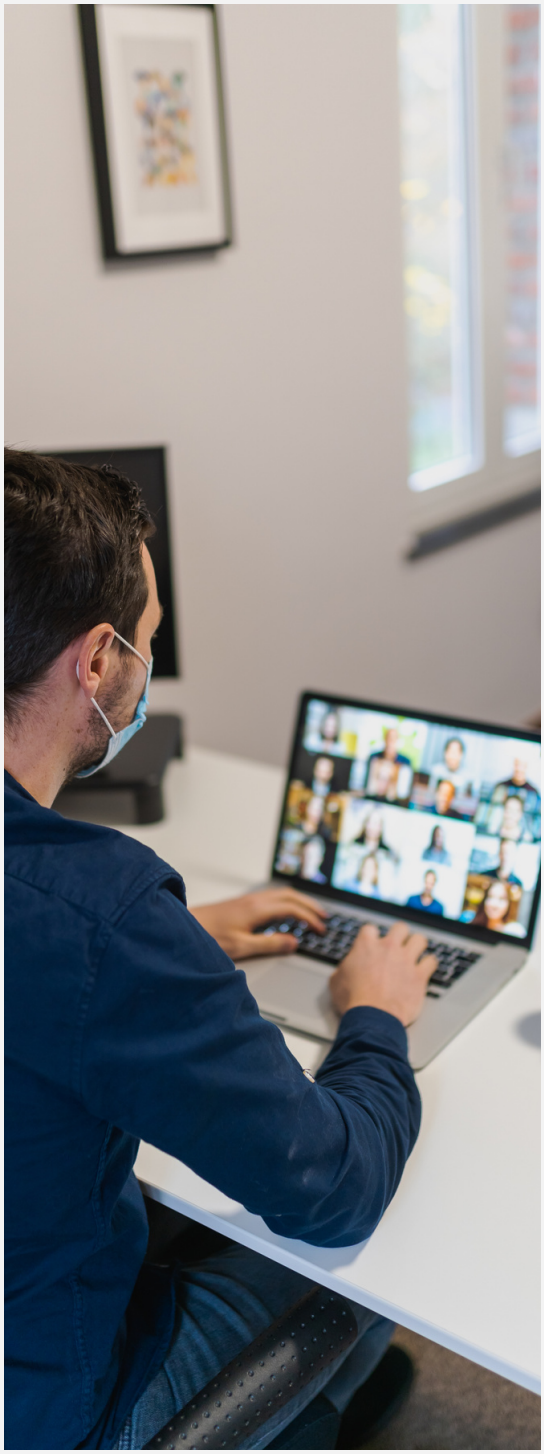
Finding and completing statutory work-based learning placements for health higher education students has become a challenge in terms of institutional and organisational capacity along with increased student numbers. The pandemic (2020) further exacerbated existing log jams through covid placement suspensions, which in turn inspired the creation by the University of East Anglia of an innovative online placement model for Occupational Therapy students.

Following positive reviews and feedback from both students and staff, the model was further developed by working with a highly experienced researcher and practitioner in online learning design and delivery. This expertise, combined with the evidence and insight gained from this first online placement exercise and the extensive experience within higher education of the initial placement creator, resulted in the construction of an innovative new model of student work-based learning placement called "The Peer Enhanced e-Placement (PEEP)" .

The PEEP model has not only successfully challenged the need for students to be physically in the workplace setting for work-based learning placements but has facilitated a reimagination of work-based learning placement provision which is now moving beyond health into other disciplines across the higher education sector. In response to the demand an online "PEEP acquisition experience" has been developed for higher education and employer staff, working together in placement teams to facilitate adaption and adoption of the PEEP for their own profession and student needs.

The PEEP model has now been widely disseminated and adopted across the UK and beyond. Over 80 placement teams from HE health and social care from 20 professions and disciplines have engaged in the PEEP acquisition experience to and to date over 1800 students have benefited from the PEEP model experience. The model is now being used beyond health disciplines as the core robust pedagogical and evidence-based principles of the PEEP model design and delivery are applicable for work-based learning placement provision across the higher education sector.

CONTEXT



Peer Enhanced e-Placements started in April 2020 at the beginning of the pandemic. Pre-existing placement capacity challenges had resulted in a 'log jam' in being able to easily fulfil statutory work-based learning placements for health higher education (HE) students. The log jam was exacerbated by covid placement suspensions. Lisa Taylor created a 3-week online placement, based on her employability and health HE experience and knowledge, for University of East Anglia (UEA) BSc Occupational Therapy students, to help progress their placement learning; a statutory part of their academic programme. The first online placement received good reviews from students and the staff involved. Not only did the students meet the placement learning outcomes required for them to pass, but they exceeded them in some areas. Seeking further understanding, evidence and insight, Lisa collaborated further with Professor Gilly Salmon, who is a specialist in online design and delivery. Together they researched and constructed a model for others to follow, which they called the Peer Enhanced e-Placement (PEEP) model. A PEEP is delivered to students entirely online and harnesses evidence-based online (Salmon, 2011, 2013) and peer-learning pedagogy (Topping et al., 2017). It also facilitates collaboration between employers, and HE institutes, throughout its design and delivery (Taylor and Salmon, 2021).

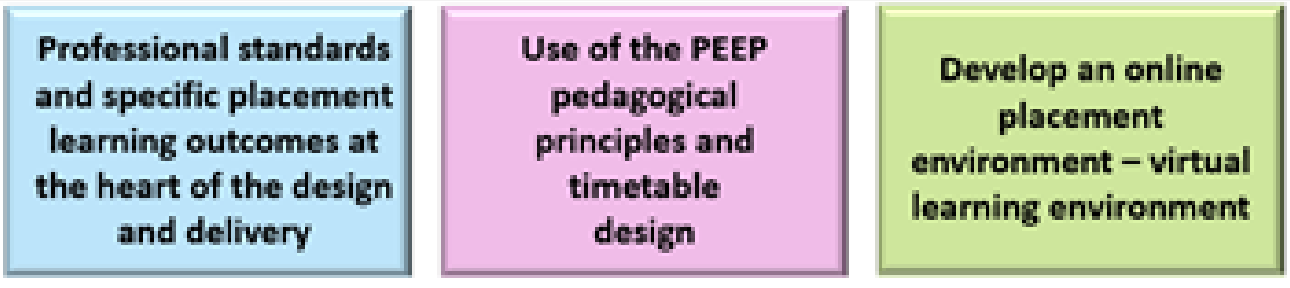
Fast forward two and a half years - Lisa and Gilly have worked with over 80 placement teams from HE health and social care organisations, spanning 20 disciplines. There has been wide dissemination about the model and its outcomes through many conference presentations and publications internationally. Around 1800 students have already benefitted from the PEEP, rising exponentially.

The PEEP model challenges the need for students to be physically in the workplace setting for work-based learning placements and demonstrates emergent additional benefits, including preparing students for future digital workplaces. PEEP has facilitated a reimagination of work-based learning placement provision and is now moving beyond health and into disciplines across the HE sector.

The PEEP offers HE providers with an online work-based learning placement option, that can be delivered via existing Virtual Learning Environments/Learning Management Systems (VLE/LMS). The PEEP model encourages collaborations between HE providers and employers to design and deliver authentic materials, activities, and learning events to facilitate learning towards employability skills and attributes relevant to current and future workplaces.

Work-based learning is highlighted as a crucial part of employability learning within HE (Jackson and Bridgstock, 2021). There are reported gaps between employer expectations and graduate preparation, with soft skills and critical thinking emerging as key areas of development in recent literature (Arsenis et al., 2022; Dalrymple et al., 2021). All these areas of employability can be supported and developed through the PEEP model design and delivery.

Figure 1 – Key Components of the Peer Enhanced E-Placement (PEEP) model for students.



METHODOLOGY & IMPLEMENTATION

Scaling up the PEEP: the PEEP acquisition experience

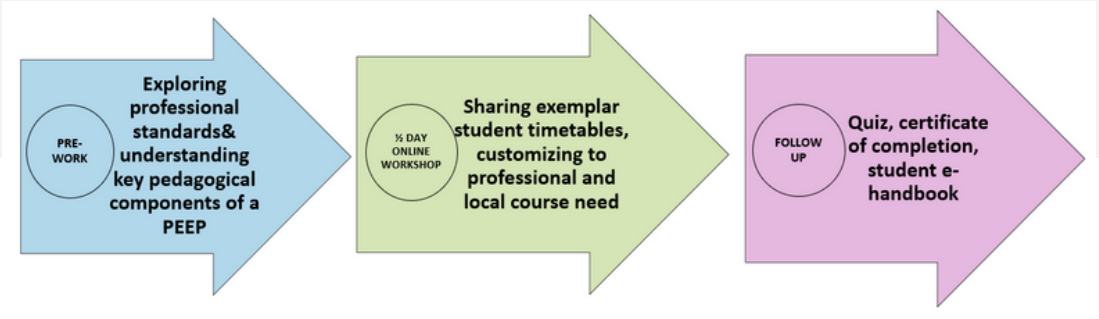
Realising the demand for the PEEP model, Lisa and Gilly developed an online, flipped learning, PEEP 'acquisition experience' for staff in placement teams. The experience includes pre-workshop activities and a half day synchronous online workshop – led by Gilly and Lisa. The three stages of a PEEP acquisition experience are shown below.

The workshop includes HE academics and employers working together. In the first half of the workshop, the teams develop their understanding of the pedagogy and of the researched evidence underpinning the PEEP, and how to adopt and adapt it. In the second half, the participant teams work together to contextualise the PEEP model for their own local students' needs, with the support of Lisa and Gilly.

An online quiz at the end of the workshop quality-assures the knowledge of participants from the workshop who are then able to adapt and adopt the PEEP for their own profession and students' requirements. Lisa and Gilly have worked with over 75 placement teams between 2020-2022 (and are still working with new PEEP placement teams now!) spanning 20 health professions and fields across the UK and beyond. Around 14,000 potential weeks of PEEP based work-based learning placements have been created so far. In addition, many others have picked up on our dissemination efforts through many conferences, blogs, publications, and meetings.

There is consistently positive feedback as to the usefulness of the PEEP acquisition experience and the workshop has been sustained and developed based on action research.

Figure 2. The three stages of a PEEP acquisition experience



ANALYSIS AND EVALUATION

Action research explored the participants' experiences of the PEEP acquisition experience and their subsequent capability and capacity for of adapting and adopting the PEEP for their own students. Ethical approval for the research was gained from the UEA Faculty of Medicine and Health Sciences research ethics committee. The data collection and analysis were conducted by an independent researcher.

An online survey was developed and distributed with a mix of closed and open questions (n=26) to placement teams who had completed a PEEP acquisition experience. Evaluative interviews (n=3) were conducted to provide in-depth discussion of the areas of investigation. Inductive reflexive thematic analysis of the qualitative data (Braun and Clarke, 2006) from the survey and the interviews was completed using NVivo 12 (Richards, 2005). The quantitative data was collated and analysed descriptively.

IMPLEMENTATION

The PEEP is highly flexible and can be adapted to professional body and employer requirements, and local students' needs. For example, the PEEP has been developed to accommodate live links to service users and clients, where desired. The design once and deliver many times approach to PEEP enables the required number of placement weeks to be created by repeating the initial PEEP design with subsequent cohorts of students.

At least ten HE Institutions have now implemented the PEEP so far, with some delivering PEEPs for more than one profession within their organisation. Consistent positive feedback on learning outcomes for students have been received.

Almost all report that they plan to embed PEEPs on an ongoing basis as part of their work-based learning placement provision for their programmes. Their initial weeks of placement capacity generated will be repeated for subsequent cohorts, providing sustainable placement capacity for them through the 'design once and deliver multiple times' concept of the PEEP.

ANALYSIS AND EVALUATION

The feedback from students and placement teams on the quality of the learning achieved through a PEEP has resulted in the PEEP being considered as a sustainable work-based learning placement option beyond the Covid emergency phase, by many placement teams throughout the UK, initially spanning multiple health professions but now being considered across the HE sector.

PEEP facilitates HE and employer collaboration, has helped increase student numbers from the guaranteed placement capacity generated from the PEEP. Placement capacity assurance is required to increase student numbers on programmes with statutory placements as part of their academic programmes. PEEP provides confidence for PEEP adopters to develop further education innovations. has been embedded in policy within HE and a national health and social care strategy report (COD, 2022).

Stakeholders and impact on employers include placement providers, hospital trusts and community health and social care services, charities and social enterprises, higher education institutes – in short, all HE providers and employers of health graduates.

We followed up PEEP acquisition participants as a later stage of our action research process to check on their local adoption and PEEP implementation experiences.

One response reported an increase in students on their programmes by at least ten students resulting from the additional placement capacity created through using PEEPs. All but one of the HE institutions reported that they plan to embed PEEPs on an ongoing basis as part of their placement provision. Further, PEEPs will be repeated for subsequent cohorts, providing ongoing sustainable placement capacity for them through the design once and deliver multiple times concept.

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EPD Feedback Loop

PEEP benefits for the sector

• offers appropriate mitigation against ongoing and increased disruption and placement capacity challenges;

• supports an appreciation of "non-hands-on" placement and employability learning -critical for the digital work-place;

• proven success and adoption across multiple professions in the health sector;

• Is flexible and adaptable for local need and contexts without compromising the pedagogical principles of design and delivery, with the specific placement learning outcomes at the heart of its design;

• the design once and deliver multiple times ethos for PEEP helps with the longer-term sustainability of PEEP;

• PEEP supports collaboration between HE and placement providers and employers;

• PEEP is acceptable to professional bodies – able to fulfil their statutory learning standards.

PEEP benefits for placement teams

• diverse range of curricula, case studies, and scenarios can be delivered through to target specific areas of learning, widening the learning and preparation for the workplace and the profession without losing the integrity of the PEEP model;

• consistency of learning opportunity for students and transparent quality assurance;

• the model is scalable and sustainable, ultimately lowering costs;

• offers practical insight and use in seminal online learning research, such as the 5-stage model (Salmon, 2011; 2013) which assists staff with their online, hybrid and blended learning as well as placements;

• opportunity to for cohorts of students to be exposed to clinical area or organisations that may otherwise not be possible within usual face to face in situ placements;

• can be designed to access specific areas of learning that otherwise could not be accessed by students through location-based placements. Thus equipping students with a more comprehensive and consistent placement learning experiences to take into the workplace when graduating.

PEEP benefits for students

• 90% of students were reported to have passed their PEEP placements and met their placement's learning outcomes (reflecting the usual historical outcomes for previous traditional placements);

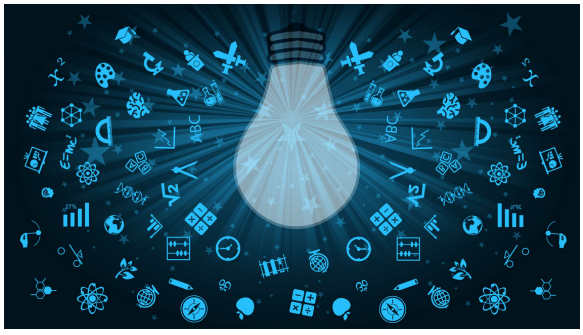
• students added value their learning (compared to regular in situ, in person placements) through increased peer learning and additional critical analysis and reasoning;

• offers students a safe space to learn, share, engage and question their own, and others' learning;

• students accessed the PEEP via their usual VLE/LMS;

• the adaptability and the design and delivery of the PEEP provides a placement option that facilitates a better accessibility and inclusive experience for students;

• many students find travel and accommodation challenging to attend their placements, from a financial, emotional, time and physically draining point.



Considerations for PEEP implementation

• extra support and understanding from the placement team involved in designing and delivering the PEEP may be required, to support culture change and understanding of viability of online learning;

• sustainability and efficiency of the model – being able to re-use and share resources, and its ability to address work-based learning for whole cohorts at a time, hence low costs over time but investment needed in design to start;

• supportive resources for the PEEP are developed with the inclusive and universal design principles (https://udlguidelines.cast.org/) in mind. The PEEP timetable structure allows for personal time for consolidation and reflection of learning by students.

PEEP acquisition experience participant personal learning

• the PEEP acquisition experience for staff impacts on participants' understanding of online placement and key elements of the PEEP design - helping to 'change the mindset';

• wider personal and professional development outcomes from the PEEP acquisition experience, include a change in thinking around how to provide quality placement learning opportunities and the value of peer learning pedagogy;

• many participants saw opportunities for widening and improving the bespoke curriculum content and clinical area exposure through PEEP;

• confidence was increased for participants, encouraging wider innovation around work-based placement learning.

REFLECTIONS & CONCLUSIONS

• The PEEP acquisition experience facilitates collaboration between HE institutes and placement providers and employers;

• The flexibility of the PEEP to be adapted, customized and adopted to local circumstances and different professions is appealing and sustainable

• The PEEP timetable template provided can be used to help to underpin the evidence-based pedagogy;

• There needs to be time resource allocated locally to support staff to develop and design their PEEPs;

• PEEPs can be designed once and delivered multiple times providing cumulative benefits to placement capacity and efficiencies over time;

• Sharing resources within an organization, and across professions, increases the sustainability and efficiency of the PEEP.

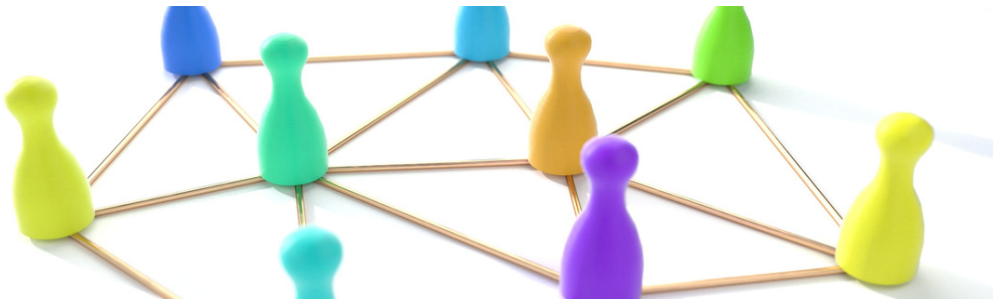
Figure 3. Overall conclusions from the initial PEEP research

• An evaluation by a nursing placement team has shown the development of mental health clinical knowledge and skills but also interpersonal and team working skills. Their research methodology included a of mix of quantitative and qualitative data, with respondents from clinical providers and service users in the delivery of the PEEP. This nursing placement team is now developing a cross region PEEP in collaboration with one of the large NHS Trust placement providers (project in progress with full publication of the evaluation to follow).

• An Occupational Therapy programme implemented a PEEP for 100 students receiving positive evaluation from the students. The students reported an in depth understanding from their participation in the PEEP, the positive findings resulted in plans for the PEEP to be embedded into ongoing programme provision (Payne and Downes, 2021).

• A detailed example of a nationwide PEEP contextualisation project led by the Gilly and Lisa - was for the Operating Department Practitioner (ODP) profession. Within the first six months of the commencement of the project, 175 ODP PEEPs were delivered, with positive feedback from students. Subsequently a further 636 four-week PEEPs have been delivered, with programmes embedding PEEPs into their ongoing placement provision.

• In an evaluation of PEEP for physiotherapy students, 93.9% of students felt expectations were clear and they were prepared for placement, with 81% reporting they met all the learning outcomes. The three top most valued learning activities were the simulation suite (56.4%), the patient journey (37.5%) and the case histories (31.3%). The pre-placement anxiety that students had reported reduced post PEEP, with little anxiety being reported. The strengths of the PEEP model were reported to be exposure to a range of different teams, the peer group learning and support, the clarity of the structure of the PEEP, the opportunity to follow a patient journey and the good support from the staff leading the PEEP. Internet stability, the lack of hands-on learning, one-one opportunities and feedback and real time assessment for this specific design and delivery of the PEEP and the need for self-motivation were identified as limitations of the PEEP experience (Stears et al., 2022). Overall, the evaluation demonstrates that the PEEP was effective to provide physiotherapy students with an initial experience of practice-based learning.



Participants commented on the PEEP acquisition experience and the ability to customise the PEEP model for their highly specialist HE environment and learning standards:

"Threshold points have been a powerful part of our reflection on [the PEEP] education"

"I have been through a journey of learning about the PEEP through the PEEP acquisition package from the pre workshop activities and the workshop and now I want to take my students through that journey too with their own PEEP"

"Such a valuable tool, so many ideas to individualise and implement across all three years of the ODP programme"

"PEEP is a valuable evidence-based tool to support learning"

"…I think virtual placements could be effective in exposing ODP students to non-traditional roles, such as working as a practitioner in ED [emergency department] or transferring an intensive care patient to a different hospital"

"It would be good for ODP students to see the patient journey [through a PEEP] from admission to discharge including their surgery and the input they receive from the MDT including radiography, dietetics, Occupational Therapy and Physiotherapy"

All corners of the ODP profession, from the President of the College of ODPs, the immediate past president, the chair of the education standards committee, clinicians, academics, and student ODPs were involved in the contextualisation process. An artist in residence used visualisation not only to explore context, make meaning for all involved, but also to empower and promote design thinking and future goal setting (Brand, 2017). The resulting visualisation used the metaphor of a fairground ride image and can be seen described via this link

https://www.youtube.com/watch?v=Nt-a2cqc2DI&t=3s

Feedback from the ODP PEEP acquisition experience participants suggested a breadth of ideas areas of practice that could be captured in the delivery of PEEPs for students to respond to the call to build extended roles beyond the theatre environment into the student experience that is not always possible in the face-to-face placement environment. Areas of practice were identified for the PEEP, to enhance the breadth of student experience beyond the theatre environment. It also highlighted how the use of PEEP could help students to experience non-technical areas of practice, which has been reported previously in the literature to be less of a focus on a traditional face-to-face clinical placement environment (Rutherford et al., 2015).

PEEP AWARDS

• Finalist for the UEA Innovation and Impact Awards 2021 – Outstanding Contribution/Response to Covid-19

• 3rd Place Pearson HE Innovate Award for Most Innovative Hybrid or Blended Learning Project

• Winner of the National Undergraduate Employability Awards 2022 – Outstanding Contribution to Work Experience

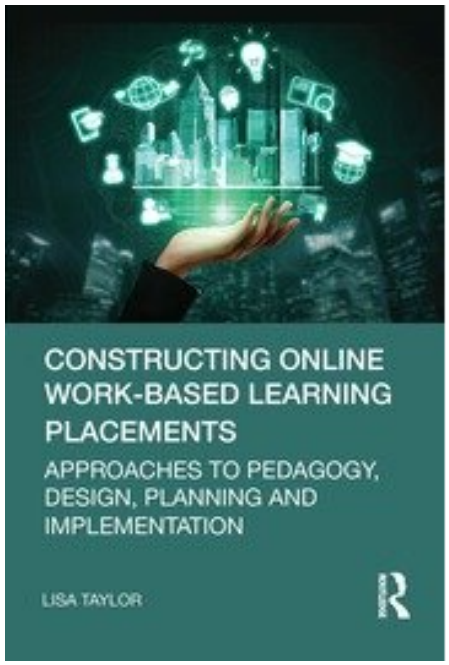
• Finalist of the AGCAS Awards for Excellence 2022 – Supporting Student/Graduate Employability Award

• Winner of the AGCAS Awards for Excellence 2022 – Strategic Innovation Award

• Winner of Innovation from Teaching award for the Faculty of Medicine and Health Sciences Annual Research Prizes competition 2022

• Finalist for Wharton-QS Reimagine Education E-learning Award 2022

BOOK BASED ON THE PEEP



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HYPERLINKS & SUPPORTING DOCUMENTS

Please find further contextual and published evidence for the PEEP below.

www.e-placements.net and https://www.educationalchemists.com/placements.html#/

- The original PEEP – structure and pedagogy; https://www.youtube.com/watch?v=_EHZfjUjwM8
- PEEP placement innovation; https://www.youtube.com/watch?v=6nQn2y3eXNg&t=6s
- PEEP 6 months on – adapting and scaling; https://www.youtube.com/watch?v=uXaFM9CXTI8&t=8s
- Achieving online health placement delivery with Deborah Lewis and Martin Rhodes - Highly Specialist Orthoptists; https://www.youtube.com/watch?v=Q052vMeb57I
- PEEP implementation with Helen Lowes Sheffield NHS Trust; https://www.youtube.com/watch?v=g3Xz2BaAapI&t=367s
- Student experience and feedback Glasgow Caledonian University Physiotherapy students; https://youtu.be/YBGtCsumFiw
- Peer Enhanced e-Placements - Accessibility, Diversity and Sustainability; https://www.youtube.com/watch?v=TtXf-lDVlgw
- Council of Deans Innovation Fortnight CoDHCast; https://www.councilofdeans.org.uk/2022/01/codhcast
- Visualisation work as part of the PEEP contextualisation https://www.youtube.com/watch?v=Nt-a2cqc2DI&t=2s
- 5 stages of learning information https://www.gillysalmon.com/five-stage-model.html
- Student experience and feedback Glasgow Caledonian University Physiotherapy students; https://youtu.be/YBGtCsumFiw
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- Warren et al., (2021) https://www.youtube.com/watch?v=u7wEZhiU0cc and https://www.hee.nhs.uk/our-work/allied-health-professions/increase-capacity/ahp-pre-registration-student-practice-based-learning-programme/practice-based-learning-6

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EDINBURGH FUTURES INSTITUTE: EQUIPPING STUDENTS FOR COMPLEX, UNKNOWN FUTURES THROUGH RADICAL CURRICULUM DESIGN

THE UNIVERSITY of EDINBURGH

GAVIN MCCABE SABINE ROLLE ANDY CROSS

Co-funded by the Erasmus+ Programme of the European Union

EPD Feedback Loop

CONTRIBUTORS

DR GAVIN MCCABE

Email : Gavin.McCabe@ed.ac.uk

PROFESSOR SABINE ROLLE

Email : S.Rolle@ed.ac.uk

DR ANDY CROSS

Email: Andrew.Cross@ed.ac.uk

SUMMARY

At the University of Edinburgh, we are transforming our curricula to ensure our graduates, and the knowledge we discover with our partners, make the world a better place; to ensure we are a place of transformation and of self-improvement, benefitting individuals, communities, societies and our world; and to ensure our students' degrees are a foundation for future learning, ethical global citizenship, and enhanced employability. Underpinning this vision and effort are a range of insights and evidence, including around the future of work and associated skills and mindsets needed by our graduates. This same research has fed into our Edinburgh Futures Institute and its new interdisciplinary degree programmes.

In this case study, we unpack some of the institutional and departmental contexts that are driving these developments, and then look specifically at the new MA (Hons) Interdisciplinary Futures degree programme: its overall ethos and approach; the stretch it will provide students and the associated importance of reflection; its focus on employability, graduate attributes, and networks and collaboration; and how a core course will act as a spine throughout the degree to integrate, strengthen, and deepen students' learning and development, and to equip them for success, now and in the complex, unknown futures they will step into.

CONTEXT

Institutional context and rationale: At the University of Edinburgh, our vision is that our graduates, and the knowledge we discover with our partners, make the world a better place. As part of our values-led approach to teaching, we seek to be a place of transformation and of self-improvement, driven to achieve benefit for individuals, communities, societies, and our world (University of Edinburgh, 2022a). Supporting this vision, we are undertaking a major and long-term Curriculum Transformation Programme to review the shape, design, and delivery of our current curriculum to ensure it develops with the needs of our future students in mind (University of Edinburgh, 2022b). A key aim of our Curriculum Transformation work is that students will find it easier to tailor and complete their degree as a foundation for future learning, ethical global citizenship, and enhanced employability.

To enable this, our Edinburgh Student Vision will inform the design of our future courses and programmes. Developed through a process of exploration, investigation, and consultation across our University community, its purpose is to define a shared ambition for the distinctive qualities and impact of the curriculum for our applicants, students, and graduates. It will inform the design of future courses and programmes, be something that students and staff can identify with, and help shape our approach to teaching and assessment in the long term. This vision, and the wider Curriculum Transformation Programme are being informed by a range of insights and evidence, including a clear emphasis on future-focused global, societal, and labour market needs. Some of the specially commissioned briefing papers look specifically at, for example, our research into and thinking around skills for the future of work and graduate attributes (University of Edinburgh, 2022c).

Departmental context and rationale: This same future-focussed approach, thinking, and research, and the associated skills needs, are already fundamentally informing all degree programmes in our new Edinburgh Futures Institute (EFI). The purpose of EFI is to pursue knowledge and understanding that supports the navigation of complex futures. EFI's distinctiveness stems from its approach to research, education, and engagement – an approach that combines multi-disciplinarity with co-production. Working with industry, government, and communities (at home and abroad) EFI builds a challenge-led and data-rich portfolio of activity that has demonstrable ethical, social, cultural, economic, and environmental impacts (University of Edinburgh, 2021a). As a result, EFI's work was informed not only at the outset by future-focused labour market intelligence but through these external partnerships EFI's work will have a sustained, vibrant, and future-focused collaboration with the labour market, shaping and benefitting the student experience, for example through students working on real-life challenges.
Our EFI postgraduate degree programmes launched in 2022/23 and our new EFI undergraduate programme, MA (Hons) Interdisciplinary Futures, will launch in 2023/24 (University of Edinburgh, 2021b). This new undergraduate programme will help students develop the confidence, knowledge, and skills to work, live, and make a difference in a rapidly changing world.

METHODOLOGY & IMPLEMENTATION

Programme ethos and approach: The new undergraduate programme MA (Hons) Interdisciplinary Futures is designed to develop key employability skills and collaborative experiences, focused on global and local challenges, and linked to cutting-edge research and the big future issues facing our planet and societies (University of Edinburgh, 2021b). The programme is aligned with EFI's aim to build educational programmes that encourage students to challenge, create, and change. Using a problem-based, experiential approach to student learning, it scaffolds students' activities and learning around a series of challenge questions (linked to Grand Challenges and the UN's Sustainable Development Goals). Those challenges are almost by definition so complex that they are beyond the reach of a single discipline, and thus our programme is interdisciplinary in outlook and design from the very start.

Stretch, reflection, and reflexivity: Our market research has shown that students are potentially very excited about this approach. It may not be for everyone, but there is a growing number of prospective students who will love to learn skills and methods taken from different areas of academic enquiry and analysis, and use them to explore some of the big questions our world is facing today. However, it is also very clear that this is a very challenging new approach for our prospective students. This kind of interdisciplinary and problem-based learning, with its lack of neat answers and the need to cope with high levels of uncertainty or ambiguity, will take many of them out of their comfort zone. Reflection and reflexivity are therefore going to be key both in supporting students to deal with this stretch and uncertainty, and as an essential skill and quality needed for the future of work and society. With this in mind, our approach is to embed reflection at the programme level, rather than just through individual course assessments. Reflective learning (and its assessment) is at the programme's centre to encourage students to challenge, create, and change (Cross & Rolle, 2022).

Employability, graduate attributes, and networks: Informed by our research into the needs of the future of work, career outcomes and employability are key aspects of our undergraduate programme, its design, development, and content. Interdisciplinary study is designed to give students the confidence, knowledge, and skills to work and pursue a career in a rapidly changing world. They will develop the personal and professional skills required to work across a range of roles in different fields and careers. The MA Interdisciplinary Futures will do this by offering practical, hands-on learning. It is designed so students can connect with the communities, businesses, employers, and environments they will find in the professional world. For example, students will work in small interdisciplinary teams to respond to complex challenge questions set by an external organisation, business, or local community. Students get support and training to develop their skills in areas such as team working, problem solving, and critical data analysis and use these skills together with their understanding of academic theories and methods to propose a solution to the challenge. A variety of authentic assessment methods such as impact reports, presentations, and blogs will support the development of strengths in communicating with different audiences and through different mediums. This means students on the degree will be able to develop applied and practical skills that are valued by employers and access a diverse network of support to help them on their journey (University of Edinburgh, 2021c).

Reflections on Interdisciplinary Practice: Throughout the undergraduate degree, the development of these future skills is central. This is being tackled not only at the individual course level, but also at the programme level. To ensure the degree is greater than the sum of its parts, we are creating a core course that integrates the learning within and across all four years. This course, 'Reflections on Interdisciplinary Practice', will exist in all four years of the undergraduate degree, drawing together learning throughout each year of study, and building on the previous. Through this, students will develop honed, nuanced, and adaptable strengths across a diverse portfolio of future-focused attributes.

The credit-bearing course will give space to:

- more fully recognise, value, understand, and explore these future skills;
- reflect on these skills, students' development within and beyond their degree, and on interdisciplinary practice, drawing on progressively more advanced reflective approaches and frameworks (McCabe & Thejll-Madsen, 2018);
- unpick the interplay between these skills or mindsets and key agendas such as academic scholarship, wellbeing, equality, diversity, and inclusion; and
- frame these future skills in a careers and employability context, using a life design approach and framework (Stanford Life Design Lab, 2022).

The course will be highly interactive, harnessing the strengths of both individual and team elements, and will both draw out and add to the skills, insights, and experiences students are gaining in their other courses and life beyond their studies. Reflection will be built in throughout – with light-touch reflections incorporated weekly, baseline and goal setting reflections completed at the start of semester, revisited and reinforced at key points during the year, and assessments having a strong reflective focus.

The course will also have a consistent feel and flow within and across the years of study. Within each year, students will increase their understanding of, and ability at working academically on, interdisciplinary practice. They will also foster and reflect on skills and mindsets required for success (informed in part by our future-focussed labour market information), and then harness and deploy skills, mindsets, and techniques in a purposeful way to support current and future success. Across the years of the degree programme, each year will deepen and expand the knowledge, thinking, skills, mindsets, and techniques used, and each year will build on what has gone before. As the students progress through the degree programme, in this course they will take on increasing responsibility for the creation of knowledge and learning, both within their year of study, and in supporting students in earlier years of study.

ANALYSIS AND EVALUATION

Given the level of innovation involved, and our hopes that the learning from this new model of degree programme will inform our curricular provision more widely across the University, evaluation will be critical. Multiple perspectives will feed into the evaluation, including students and staff, and this will be particularly key as the first cohort encounters each year of study. But we will also review and re-evaluate each year's provision as we progress. This will be particularly the case for the Reflections on Interdisciplinary Practice course. Here, our plans for peer and near-to-peer interaction between students within and across multiple years of the degree mean that some elements of the structure will continue to be revised throughout the first four years of the degree programme's life. We are still developing our planned approach to evaluation for this programme and will want to harness both established 'student voice' routes and perspectives beyond our current students, including external stakeholders, alumni, employers, and even prospective students in terms of how this new type of curricular offering is communicated, understood, and valued.

REFLECTIONS, CONCLUSIONS, AND NEXT STEPS

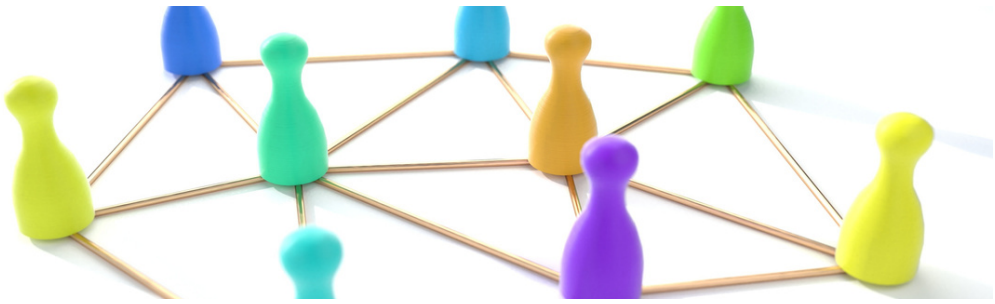
Senior support and buy-in has been, and continues to be, essential. This is true at the institutional level where we hope our Curriculum Transformation Programme will support our vision of being a place of transformation and of self-improvement, and will provide our students with an educational foundation for future learning, ethical global citizenship, and enhanced employability. However, this is also true at the departmental, programme, and course levels within EFI where we strive to achieve a transformation in our learning and teaching, and in our students' skills and mindsets, preparing them for complex and unknown futures. The underpinning future-focused insights, evidence, and labour market intelligence mentioned throughout this case study, have contributed to securing that support and buy-in.

Alongside this senior support and buy-in, the staff community formed in and around EFI has been pivotal in its existing and ongoing innovation and success. We have been able to draw together staff from across the University and beyond who are passionate about contributing to this new and exciting venture, often as secondees or as critical friends, harnessing their disciplinary, educational, and professional services expertise to create our vibrant student experience and educational offering.

This is not to say that there have been no challenges along the way. Developing an interdisciplinary programme can be difficult where many staff have strong and research-related discipline identities and where long-standing structures have been built around established disciplines. On top of this, any kind of innovation is costly in development.

However, alongside the senior support, there has been a lot of freedom for staff to build the desired curriculum. Our success has been dependent on the ongoing enthusiasm from these staff and in turn this has drawn out others who are excited by the potential, including those who do not always find it easy to make space for this type of work where there are other competing demands on their time.

At the time of writing, the development work for the new EFI undergraduate degree is still underway. The first cohort of students will start in September 2023, and the work to build, revise, and refine the degree will continue progressively over the following years leading to our first students graduating in 2027. We are excited to see how they will change the world around them, both during the degree and beyond, and how our curricula will evolve and transform as a result of what we learn with them!



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THE UNIVERSITY of EDINBURGH

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EPD Feedback Loop

BUILDING ENTREPRENEURIAL SKILLS THROUGH UNIVERSITY-BUSINESS COLLABORATION: THE CASE OF THE TECNOCAMPUS

Anahí Moyano Larrea **Rosario Scandurra**

TecnoCampus
University Pompeu Fabra

Co-funded by the Erasmus+ Programme of the European Union

EPD Feedback Loop

CONTRIBUTORS

ANAHÍ MOYANO LARREA

Head of Entrepreneurial University, TecnoCampus, University Pompeu Fabra

Email : amoyano@tecnocampus.cat

ROSARIO SCANDURRA

Department of Sociology, Universitat Autònoma de Barcelona

Email: rosario.scandurra@uab.cat

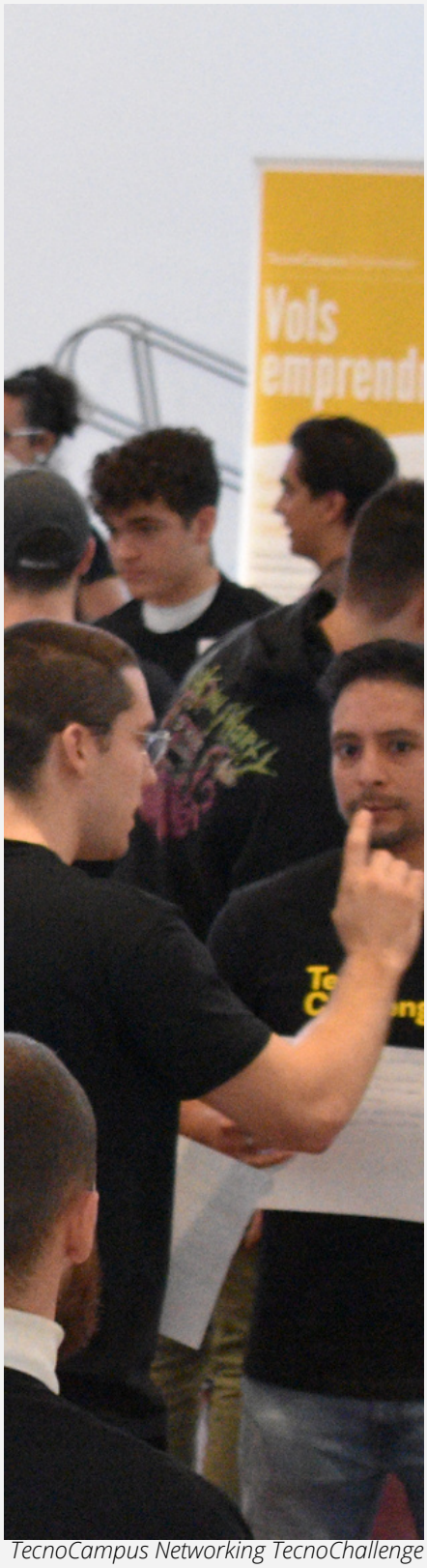
SUMMARY

The Campus Emprenedor (Entrepreneurial Campus) is part of TecnoCampus – a university and technology park based in the Catalan city of Mataró. The uniqueness of this campus is its integration of a business and startup community with a university to create a dynamic ecosystem that promotes entrepreneurship and business growth for local economic and social development. The Entrepreneurial Campus brings together programs and activities that promote entrepreneurial culture and facilitate the development of intra- and entrepreneurial competences alongside the creation of startups with social and sustainable impact.

The University has 41 professors and staff dedicated to entrepreneurship and innovation and provides more than 25 distinct resources of entrepreneurial support and training – such as education and training, challenges, spaces networking, and internationalization. These resources are aligned around the pillars of innovation, impact, community, and internationalization. This entrepreneurial university pathway supports students through the stages of awareness and education, pre-incubation, incubation, and acceleration, on a journey that starts in the classroom and ends at the business and technology park (see Figure 1). TecnoCampus offers mandatory and optional entrepreneurial courses, entrepreneurship-focused study-abroad programs, and a Master´s Degree in Entrepreneurship and Innovation.

Student skills linked with entrepreneurial competences are developed in coordination with TecnoCampus Job Board, through workshops, educational cooperation agreements or internships, industry-specific talent forums and, ultimately, through job offers. TecnoCampus uses various indicators to evaluate the impact of its programs, including the percentage of final degree projects which focus on entrepreneurship, the number of projects and participants in the pre-incubator stage, and the number of successful startups within our incubators.

CONTEXT



TecnoCampus Networking TecnoChallenge

TecnoCampus is in Mataró, the capital of the Maresme region. It is located 20 kilometres north from the city of Barcelona and has 128.956 inhabitants (Idescat, 2022). The University has three schools: Engineering and Technology, Business and Social Sciences and Health Sciences, all affiliated to Pompeu Fabra University. With a total of 3,936 students enrolled for the academic year 2021-2022 (TecnoCampus, 2023a), it is a private university, with a strong commitment to the local economy and local economic development. As a result of a public-private alliance, the Mayor of Mataró is also the president of the TecnoCampus Mataró-Maresme Foundation. This organization was created by the Mataró City Council to oversee TecnoCampus from the start of the project. The TecnoCampus Strategic Plan 2023-2026 (LeadtoChange, 2023) establishes the entity´s mission to create value around learning, research, entrepreneurship, and innovation.

Every student within our technology and business schools takes a mandatory course in entrepreneurship and all students across all schools have access to curricular and non-curricular entrepreneurial education and training. The chairs of Social Economy, Aging and Quality of Life, and Circular Economy and Sustainability – all have strong links to the entrepreneurial community.

The Master´s Degree in Entrepreneurship and Innovation develops the skills of potential entrepreneurs to think creatively and empower them to transform an idea into a commercial product. From an interdisciplinary approach, it focuses on the analysis, management, and assessment of innovative processes. This 60 ECTS programme is aimed at businesspeople and potential entrepreneurs that want to create a new company or drive innovation within existing companies. There are also four entrepreneurship-focused study abroad programs, developed for international students and professionals by the HUB4T, TecnoCampus Center for Postgraduate Studies and Lifelong Learning. These programs are Entrepreneurship in Digital Environments, Investment School, Digital Marketing Entrepreneurship, and Circular and Sustainable Tourism. It is a core part of the University's strategic plan to connect students to the business park and its entrepreneurial business.

METHODOLOGY & IMPLEMENTATION

The institutional model for the development of entrepreneurship draws on an action plan aimed at enhancing research, innovation, and knowledge transfer. Programs and activities follow the six axes of entrepreneurial competences, - transfer, incubators and differential spaces, entrepreneurial support, internationalization, and financing. The Entrepreneurial Campus concentrates on programs, activities, and training that promote an entrepreneurial culture, the development of entrepreneurial competences, and the creation of startups with social and sustainable impact.

Alongside the entrepreneurial pillars of innovation, impact, community, and internationalization, TecnoCampus encompasses programs and activities that facilitate the development of entrepreneurial competences identified in EntreComp - the European Entrepreneurship Competence Framework (Bacigalupo et al., 2016). The University has implemented an education and training program that takes students from the classroom to the business park, transforming their business ideas into startups with triple impact (ie. economic, social, and environmental). As seen in Figure 1, resources and initiatives which support students are organized into categories such as education and training, challenges, awards, mentorship, other tools, spaces, networking, and internationalization. Most of the resources in columns one and two are dedicated to both intra and entrepreneurial students, while columns three and four are exclusively for those who have created startups.

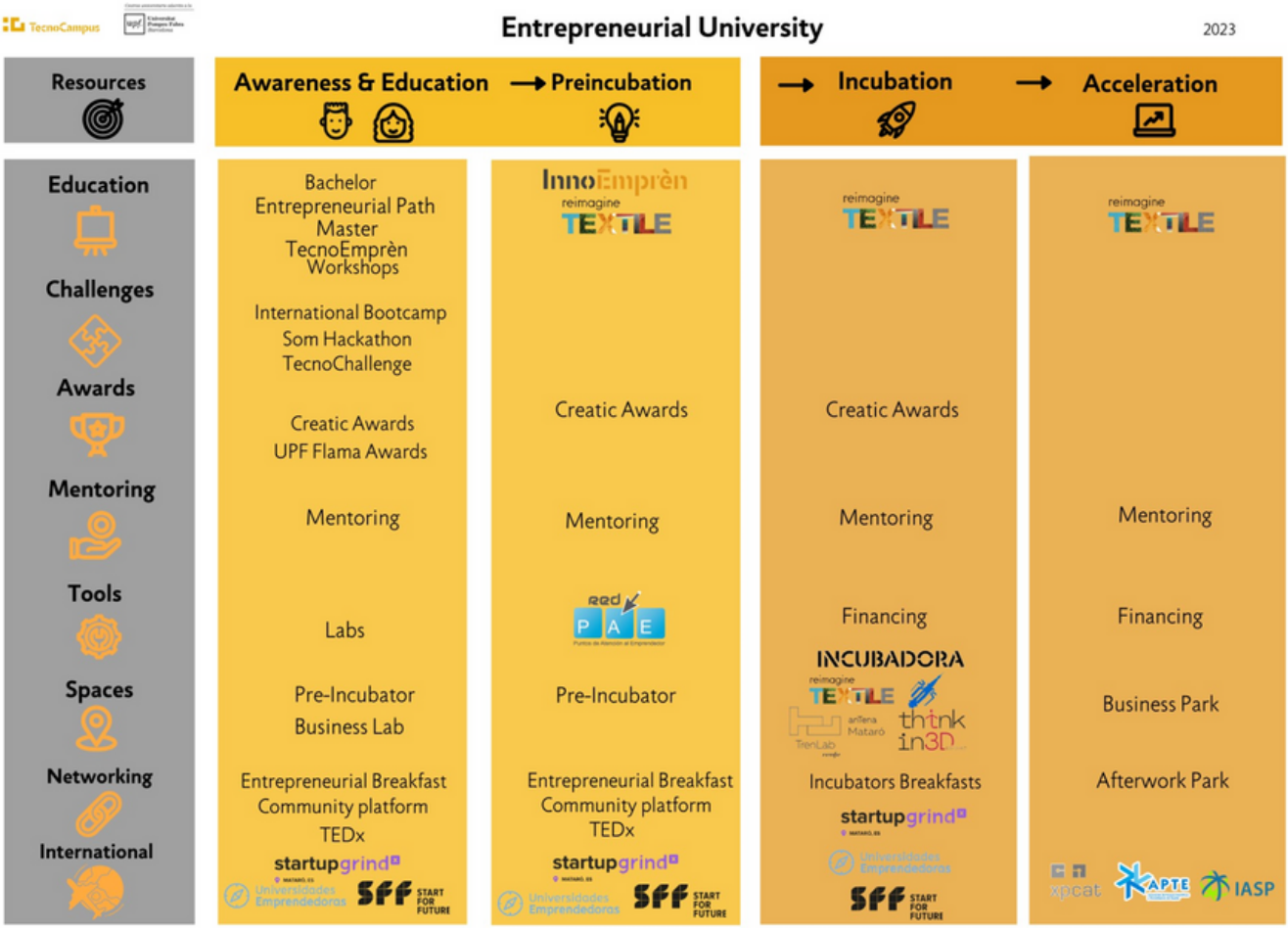
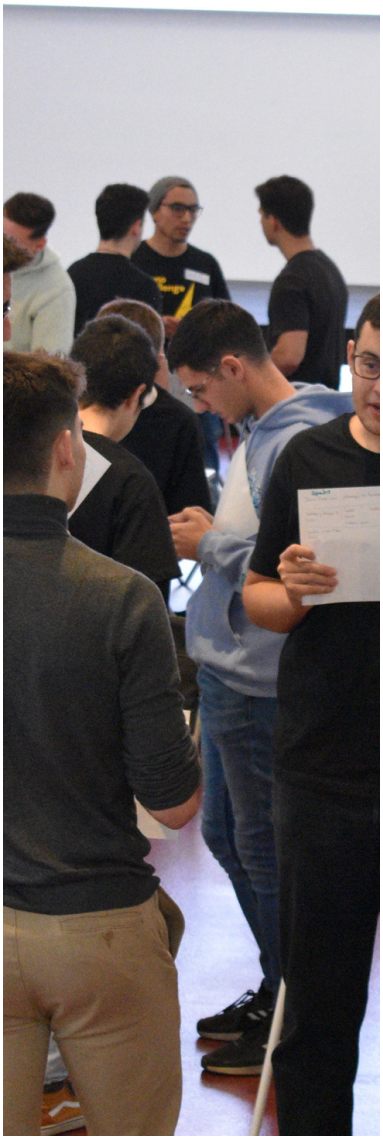


Figure 1: Resources and initiatives which support students' entrepreneurship

Specific initiatives include bootcamps, challenges and real case studies, gamification, outdoor training, peer coaching, digital simulations, co-creation, and even role-playing games. The main methodologies which underpin these initiatives are Design Thinking and Lean Startup. TecnoCampus also employs a practical methodology for the development of entrepreneurship and innovation projects called ToolBoard Canvas, created by the entrepreneurial professor and researcher Jaume Teodoro. Drawing on Design Thinking, the canvas consists of a manual, a book, and a card game. ToolBoard Canvas holistically integrates the client, other stakeholders, the team, the problem, the solution, and the market; from challenge to opportunity, from opportunity to solution and from solution to market (Teodoro, 2023). Outlined below are just some of the entrepreneurial resources that have been developed for TecnoCampus students:

(i) TecnoChallenge: The TecnoChallenge is an intensive, weekend-long event, where students solve current real challenges from TecnoCampus Entrepreneurial Community. This event fulfils a triple objective: to develop entrepreneurial competencies among students, to enhance company-university collaboration, and to solve real challenges with effective solutions that can be implemented immediately afterwards. In 2022, the activity evolved from to the development of new business ideas, to the solving of key challenges from our three main ecosystem stakeholders: the University, startups, and established companies. Students are drawn from undergraduate and master's programs, from across the three schools to work together in multidisciplinary teams.



TecnoCampus Networking TecnoChallenge

Student teams are formed by the organizers according to career, level, language, and gender criteria. There are two open calls, one to define the challenges and another for the registration of the students. The organizers select the three most innovative challenges, one from a startup from our incubators, one from an established company within the Business Park, and one from an area of the University. One week before TecnoChallenge, there is an introductory workshop, where members of the teams get to know each other and select their challenge. The stakeholders pitch and interact with the three or four teams that choose their challenge and accompany them throughout that week and over the course of the event itself.

There are around 50 participants each year. TecnoChallenge takes places on a November weekend, close to the Global Entrepreneurship Week. Teams work on their solutions using Design Thinking and guided by facilitators. They present a video and a final pitch in front of a panel (comprised of the owners of the challenge and entrepreneurial staff). The panel have prior access to each team's online file with all the milestones achieved during the event. The evaluation criteria includes: 1) successful solution to the challenge; 2) practical implementation possibilities; 3) degree of innovation/uniqueness of the solution; 4) effective teamwork, including commitment, values, enthusiasm, and technical knowledge; 5) social and environmental impact, alignment with the UN Sustainable Development Goals (SDGs); 6) communication skills: pitch and video. The winning initiative for each category receives a cash prize and collaboration on the implementation of the solution with the owner of the challenge. The involvement of the challenge stakeholders allows them to get to know the students and is a great opportunity for them to identify student talent.

(ii) Creatic Award for University Entrepreneurship: Organized by TecnoCampus and the City Council of Mataró, the Creatic Awards are an incentive for innovative and/or technology-based business projects, offering financial, logistical and acceleration support. There are five categories: 1) Best business initiative in the field of technology and innovation; 2) Best project led by women; 3) Best project with social impact; 4) University entrepreneurship award; and 5) Best entrepreneurial project for vocational education and training students. The University entrepreneurship award is aimed at undergraduate, and masters' students enrolled in the current academic year, who present an entrepreneurial project through the submission of an executive summary. The selection criteria for this particular award include 1) singularity of the idea; 2) market orientation of the value proposition; 3) business model; 4) degree of project development; 5) social and/or environmental impact and alignment with the SDGs. This final criterion, introduced for the 22nd edition of the awards in 2022, recognises triple impact and responsible entrepreneurship. The prize for this award consists of a cash prize, a grant for travel expenses to an international entrepreneurship event, participation in an entrepreneurship program, and access to the Pre-incubator for one year. The prizes are awarded in November, at the Night of Entrepreneurship, an annual meeting point for business, academia, civil society, and the civil administration of Mataró and Maresme.

(iii) Pre-incubator: The Pre-incubator is a program for supporting projects developed by students or alumni with a value proposition, a business model, and a time to market of less than a year. It's a free program, available for 9 months. Alongside access to the plug and play open space, the team receives tutoring and expert support to assess and validate the idea. The Pre-incubator is physically located on the same floor as the main Incubator (Incubadora) and aims to bring the reality of startups closer to entrepreneurial students, whilst also facilitating interaction and networking opportunities. TecnoCampus has five incubators, the non-aligned or agnostic main incubator called Incubadora, and four incubators with specific specialisms (or verticals): Antena TrenLab (urban mobility), Reimagine Textile (textile), ThinkIn 3D (additive manufacturing) and Apollo (logistics and technology). The first four incubators only admit startups (previously incorporated legal entities) and have a monthly fee, while Apollo is a project launcher program, offered by TecnoCampus and the company Bytemaster, to teams free of charge.

(iv) Entrepreneurial Breakfasts: On the last Monday of each month the entrepreneurial community gets together to learn about training and support opportunities, future events, and to share experiences. It is the primary meeting point for matching, networking, and sharing inspiration. While it primarily focuses on entrepreneurial and intrapreneurial students and alumni, it also brings together faculty, staff, businesses, and other participants. Its goal is to raise awareness about available entrepreneurial support resources, to gather feedback from students on the value of these resources, and to create new resources which better match their needs. These events also promote networking and synergies and help to consolidate the entrepreneurial community. The standard breakfast agenda has seven sections: 1) entrepreneurial resources, presented by their coordinators; 2) entrepreneurial students, who share their experiences from events, challenges, and programs; 3) startup pitches, where alumni and students present their startups and, the path they took to get there, and any advice they may have for those who are at an earlier stage; 4) events, where we look at future events and programs linked to entrepreneurship and innovation; 5) "I look for…", a space to ask for resources, partners, employees, or any other entrepreneurial need 6) M.I.M.O, a caring and effective feedback method, where the participants add value and express what they want to keep, incorporate, improve, or omit for the next breakfast; and 7) open networking coffee (sometimes preceded by other dynamics, such as speed dating).

TecnoChallenge 2022

(v) Start-UPFlama: TecnoCampus and the University Pompeu Fabra (UPF) developed this joint entrepreneurial program, which promotes entrepreneurship by harnessing the creativity, initiative, and knowledge of undergraduate and postgraduate students and alumni. It helps them to create innovative companies that bring wealth and well-being to society. The program consists of three phases: 1) Business Model Canvas 2) Training 3) Legal constitution and first steps. After phases 1 and 2, the teams pitch in front of a panel and the winners obtain a cash prize and an incubation opportunity. Start-UPFlama awards four prizes: Best business project, Best innovative idea, Best impact project, and Best evolution within the program. TecnoCampus then leads on phase 3, incubating these four winner teams through a six-month process, with individual tutoring and coaching, and access to all the entrepreneurial resources of the campus.

(vi) Start for Future (SFF): The SFF is a European alliance of twenty incubators and universities, with the partnership of EIT: Urban Mobility, Manufacturing and HEI Initiative. SFF has four main programs: Academy, Open Incubation, Open Incubator and Regional Innovation Valleys. These programs have three main stakeholders: universities and incubators, students and startups, and corporates. The Open Incubation Program has three phases: 1) Learn - a cross university, project based, entrepreneurship program for student teams that runs for 3 months; 2) Match & Start - a pre-acceleration two-month sprint program for individual talents and early-stage startups; and 3) Develop and Co-create - an incubation six-month program in partner ecosystems. All phases are online, in English, and aligned to six themes:

circular economy, energy, food, health, manufacturing and mobility. TecnoCampus students participate in all three phases. Within the Develop and Co-create strand there is a special focus on co-incubation with a team being incubated at the same time in both the TecnoCampus and one other incubator (such as Strascheg Center for Entrepreneurship from Hochschule München University of Applied Sciences in Germany, or the University of Economics Varna Accelerator in Bulgaria). Local and European teams and startups have opportunities for market entry, pilot projects, co-creation with industry and investment. The program offers individual mentoring and coaching, access to a pool of industry experts and co-creation partners, open sessions, a grant for prototyping, a mobility voucher, and international co-creation summits.

(vii) International Network of Entrepreneurial Universities: TecnoCampus leads a network with eight Latin American universities from Argentina, Chile, Colombia, and Peru. These entities share a vision of entrepreneurial education and culture, based on three axes: a strong commitment to innovation and entrepreneurship, their university role as engines of regional development and innovation, and an innovative and unconventional approach to teaching and learning models. The Network's current action plan for 2022-2023 has six priorities: 1) Business training for teachers, staff and students; 2) Methodologies and tools for entrepreneurship management; 3) Presentation of projects to calls for the financing of the Network; 4) Indicators of university entrepreneurship; 5) Financing for entrepreneurs; and 6) Communication strategy and positioning of the Network.

(viii) PAE Point: TecnoCampus supports teams of students and alumni mature enough to establish a legal entity through the PAE Network (Entrepreneurship Service Point) of CIRCE (Information Center and Business Creation Network). The teams receive information and advice on different forms of legal entities and all the procedures are carried out electronically from the PAE Point located in the park.

ANALYSIS AND EVALUATION

The University has 41 people dedicated to entrepreneurship and innovation within the institution, including 21 professors and researchers and 20 associated staff members. This represents around 10% of the 426 employees of the whole university. At the Business School, there is a Research Group Applied to the Financial, Economic and Social Environment (GRAEFES), with a research strand dedicated to entrepreneurship made up of four researchers. There are also two entrepreneurial researchers from the Technology School. In 2021-2022, 4 scientific articles and 1 book related to entrepreneurship were published by these researchers. There were 195 ECTS dedicated to entrepreneurship and innovation in the last academic year, including mandatory and optional entrepreneurial subjects for undergraduates and postgraduates. Students who opt for intrapreneurship or entrepreneurship, can choose from the more than 25 training initiatives and resources listed above that the University provides to support their development (Moyano, 2023).

The majority of the programs affiliated with the TecnoCampus utilise satisfaction surveys, such as the MIMO method, to gather feedback and continuously improve their offering. In 2022, there were 2 workshops for entrepreneurial professors and researchers from the three schools and 1 workshop also involving associated entrepreneurial staff members, to promote community, synergies, and feedback. At last year´s TecnoChallenge, a pilot study was carried out focusing on the generation of social capital and the role of gender, which also produced recommendations for the next challenge.

One other key area of the Campus is the TecnoCampus Quality Service whose objective is to develop a Quality Plan for the institution (TecnoCampus, 2023). This Service is responsible for planning, setting objectives, evaluating, measuring, and making proposals for improving quality. The Service focuses on both the university and the business park areas. The Internal Quality Management Systems (SGIQ) has the users at the center of their improvement plans focusing on students, startups, and companies. All the main directors of the University and the business park areas are included as members of the TecnoCampus Quality Commission. Their role is to approve the annual Quality Report, assess the key performance indicators, and monitor key improvement proposals (TecnoCampus, 2023b).

The entrepreneurial program at the University is evaluated using various indicators, as reported by TecnoCampus in the Academic Year 2021-2022 (TecnoCampus, 2023a). These indicators include:

- 1,962 internship offers published: This indicates the University's commitment to providing students with practical experience and exposure to the working world.
- 1,030 educational cooperation agreements signed (internships): This further highlights the university's efforts to provide students with opportunities to gain real-world experience in their field of study.
- 639 job offers published: This suggests that the university is successful in connecting students with potential employers and helping them secure jobs after graduation.
- 9 industry-specific talent forums: These forums provide a platform for students to network with professionals in their field and learn about job opportunities in their industry.
- 42 career guidance sessions: These sessions are aimed at helping students identify their career goals and develop strategies for achieving them.
- 27 Skills program sessions: These sessions may focus on developing specific skills that are in high demand in the job market, such as coding or project management.
- 313 final degree projects in entrepreneurship (33%): This indicates that a significant proportion of students are interested in entrepreneurship and are pursuing projects related to starting and running their own businesses.

TecnoCampus Entrepreneurial Breakfast

- 17 Projects, with 48 participants in the Pre-incubator: The Pre-incubator program provides support and resources to students who are interested in starting their own businesses, which can help increase the likelihood of success.
- 21 startups in the incubators, including students and regional entrepreneurs: This suggests that the university is successful in fostering a culture of entrepreneurship and providing the necessary resources and support for students who have created startups.
- 76 companies created (and 106 jobs created): This is a concrete measure of the impact of the University's entrepreneurial program on the local economy and job market.
- 118 hosted businesses (93% park occupancy): This indicates that the University has successfully created a supportive environment for businesses to grow and thrive.
- 799 workers employed by the park businesses: This further highlights the positive impact of the University's entrepreneurial program on the local job market.

According to the Transfer, Innovation and Business Area of TecnoCampus, the success rate of our startups is 75%. Some success stories amongst local entrepreneurs, students and alumni include Minoryx Therapeutics, Verkami, Net Rivals, Inviertis, Bambai and Exheus.

REFLECTIONS & CONCLUSIONS

The original impetus for the Entrepreneurial Campus comes from an institutional commitment to entrepreneurship and innovation, which is also reflected in the strategic plan of the University 2023-2026. This has led the institution to promote entrepreneurship and employability consistently across all three of its schools. There are a whole range of training and support opportunities available to students and alumni that aim to cross the gap between education and industry. They are all aligned with the four pillars of entrepreneurial university: innovation, impact, community, and internationalization, as well as to the institutional model for the development of entrepreneurship.

A unique characteristic of this campus is its integration with a business and startup community that promotes entrepreneurship and business growth for local economic and social development. Another characteristic is the public-private alliance between the University and the City Council of Mataró.

By 2023, we are expecting a major change in the organization of the University. Our three schools will become four departments. Namely, Cultural Industries, Business, Health, and Technology. A few of our current challenges and milestones include the development of tools capable of scaling our training provision to the entrepreneurial community, such as an online learning platform and app. The institution is developing a communication strategy to inform and promote the use of the 25 entrepreneurial resources available to both students and alumni. Going forward, the University is currently looking for complementary key performance indicators aimed at improving the measurement of entrepreneurial competences and the creation of further high quality entrepreneurial training initiatives and academic programs.

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