Building bridges between higher education and employment: learning from practically-based HE

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Introduction

This research, carried out in collaboration between UCL's Institute of Education and the Edge Foundation, focuses on the complexities of building bridges between higher education (HE) and industry. Specifically it unpacks the ways in which HE institutions respond to these complexities and develop approaches and strategies when moving their academic provision towards a more work-related provision, to enable students to engage with industries and learn alongside industry professionals. This requires developing and sustaining a practically-based learning environment underpinned by the links between HE and industry through integrating theory and practice and fostering stakeholder collaboration and communication. The research is timely given an ever-growing focus on graduates' work-readiness and integration into the world of work.

The focus of the research is on identifying and exploring characteristics, challenges and implications of practically-based and industry-engaged HE models. Specifically, the following questions are explored:

- What are the main features of practically-based/industry engaged HE models and how this contributes to university transformation?

- How can these models support HE graduates skills development and employability?

- What are the processes, strategies and approaches that universities develop when moving their academic provision towards a more work-related provision?

- How can networks of HE institutions and businesses facilitate, support and sustain these models?

- How can the integration of theory and practice in HE support this model? What are the implications for crossing boundaries between education and work?

Methods

To address these aims a qualitative methodology was adopted using two case study HE institutions. The two post-92 HE institutions, one based in the North East of England, the other in North West of England. The approach to the data collection included, firstly, desktop and contextual research about the two case study universities such as the skills and employment profile of the local area of the institutions in order to give deeper understanding of the university and local context in which they are situated. Secondly, empirical data was collected using semi-structured interviews with a range of stakeholders from the two universities, including pro-vice chancellors and other members of the senior leadership teams, heads of schools, lecturers, staff members with either a university-level or school-level professional role such as employment engagement officers, and students. A total of 20 interviews were conducted across the two universities.

Findings

Employability is now seen as a broader part of the university agenda – more than the careers service teams' responsibility but something embedded through all disciplines and throughout teaching and learning. Fostering employability and work-readiness has become a part of institutional strategies across our cases, and the involvement and collaboration of all key stakeholders has been emphasised as crucial. This requires continuous boundary crossing between different spaces and contexts to link academic teaching and learning with the workplace, through practically-based approaches within the HE classroom and beyond.

New staff roles have been created across the universities to support the employability agenda. These roles may encompass, but are not limited to, initiating opportunities such as placements, work experience, and other employer engagement activities to bridge the gap between industry and academia. At the same time, existing academic roles are being stretched and moulded to incorporate elements of the employability agenda and crossing boundaries between theory and practice across different disciplines.

In addition to highlighting the fundamental importance of theory, the curricula have been reorientated and redesigned to understand how knowledge can be effectively applied in real-world contexts. This is achieved by aligning the curriculum with real-world opportunities, this model not only equips learners with relevant, actionable skills but also fosters a meaningful and sustainable relationship between education and employment.

To achieve this agenda, collaboration is key between different stakeholders to develop the curriculum, including the involvement of industry partners. By involving industry advisors, the ecosystem bridges academic theory with practical, real-world applications, enhancing the relevance and impact of the educational programmes for students' employability.

Collaboration enables students to work closely with staff and industry partners on various work-based learning opportunities throughout their courses, such as placements, client-facing projects, and other work-related experiences.

There are some challenges associated with employer engagement for universities, such as relying on individual academic's links and ensuring partnerships are both sustainable and mutually beneficial. There were also issues with co-ordination in ensuring that staff across the university are not approaching the same employers in a non-joined up approach. Our findings indicate that listening to and involving employers as equal and active partners provides a meaningful foundation for sustained cooperation and industry engagement.

Creating learning spaces to bridge theory and practice emerged as a significant development, occurring through both formal and informal learning activities across various contexts and environments in the universities. These learning spaces can include work experiences, networking opportunities, classroom activities, and client-facing projects.

Universities are actively incorporating personal career planning into their employability strategies, with a strong focus on supporting students from underprivileged backgrounds. For example, mastering video interview techniques, and embedding relevant technical qualifications within programme delivery allows students to graduate with not only academic credentials but also industry-relevant skills.

Interviewees highlighted the significant benefits of networking and collaboration, both among students as peers and with external stakeholders. These interactions are described as extremely valuable in breaking down barriers and boosting students' confidence. They also contribute to students' sense of belonging within their professional communities, as they gain industry insights, engage with employers, and build meaningful relationships.

Students value the acquisition of practical skills and appreciate the links made between the theory of their chosen subject with the realities of the workplace. This is what students emphasise as meaningful learning outcomes to their higher education experiences. Learning methods beyond traditional lectures supported the bridging of the gap between theory and practice, such as smaller, classroom-based seminars, integration of digital tools, practical lab work and virtual simulations.

Diverse portfolio and broader assessment methods provided students with a more practical and relevant evaluation of their skills, aligning with employers' expectations, such as project-based work and developing films. Many students expressed that these methods carried greater weight and currency in their future careers, allowing them to demonstrate critical thinking, creativity, and applied knowledge in a manner that was more in line with employers and professional environments.

Confidence was cited as one of the most crucial attributes for career success, and students felt that the programme played a key role in fostering this. A sense of empowerment came with the development of confidence of subject knowledge and its applicability to the real world. While some opportunities to engage with employers and build professional networks were available, many felt that earlier exposure to professionals, e.g. through guest lectures, mentorship programmes, workplace visits, or career fairs, would have further enhanced their confidence and career readiness. Ultimately, students expressed diverse perspectives for pursuing their degree; while many appreciate the career-focused aspects of their degree, others feel that the strong emphasis on employability should be balanced with the intrinsic value of academic enrichment.

Innovation and diversification in higher education have been described as challenging processes that require adaptation to continuous changes and developments in the sector. One of the key challenges lies in striking the right balance between top-down initiatives and bottom-up approaches. Another is ensuring work experience and placements are meaningful for students, which greatly relies on fostering successful university-industry collaborations. The research highlights the importance of creating structured opportunities for dialogue, ensuring that both parties can work together to refine and adapt work placements in ways that benefit all stakeholders. This collaborative approach is essential for bridging gaps and addressing the shared challenges of preparing students for the complexities of the contemporary workplace.

Introduction

The project focuses on the complexities of building bridges between higher education and industry. Specifically it unpacks the ways in which higher education institutions respond to these complexities and develop approaches and strategies when moving their academic provision towards a more work-related provision, to enable students to engage with industries and learn alongside industry professionals. This requires developing and sustaining a practically-based learning environment underpinned by the links between higher education and industry through integrating theory and practice and fostering stakeholder collaboration and communication.

This research is timely, as contemporary policy and research debates bring attention to an important issue of higher education (HE) graduates' work readiness (Kornelakis & Petrakaki, 2020; Bridgstock & Tippett, 2019). It is also relevant as many universities introduce programmes that are supported by industry in a variety of ways and are more practically-based. There is a strong emphasis on the significance of adequately preparing young people for the world of work and equipping them with the skills needed in the labour market to facilitate their employability and career chances (Cranmer, 2006; Prokou, 2008; Cook, 2022). The study focuses on two case studies (higher education institutions), specifically exploring the ways, the universities have been developing strategies to facilitate stakeholder engagement within a local ecosystem.

Research questions

The focus of the research is on identifying and exploring characteristics, challenges and implications of practically based and industry engaged HE models. Specifically, the following questions will be explored:

- What are the main features of practically-based/industry engaged HE models and how this contributes to university transformation?

- How can these models support HE graduates skills development and employability?

- What are the processes, strategies and approaches that universities develop when moving their academic provision towards a more work-related provision?

- How can networks of HE institutions and businesses facilitate, support and sustain these models?

- How can the integration of theory and practice in HE support this model? What are the implications for crossing boundaries between education and work?

Review of recent literature

The changing landscape of HE

The changing landscape of higher education has received increased attention in both policy and research literature over recent decades (Department for Education, 2021; Marginson, 2023; Fagence and Hansom, 2018). In response to recent social and economic changes and challenges, the higher education (HE) sector in England shows a growing trend towards diversifying its provision, aiming to meet the needs of today's students by enhancing graduate employability and addressing employer demands for work-ready graduates. According to Mason et al. (2009), UK universities have been under increasing pressure to equip graduates with more than just the academic skills typically associated with their degree subject and classification. This has been supported by reports from employer associations and higher education organisations, which have called on universities to make a more deliberate effort to cultivate the 'key,' 'core,' 'transferable,' and 'generic' skills essential for various forms of high-skilled employment. (Mason et al., 2009, p. 1). In line with this, recent policy and research discussions (e.g., Department for Education, 2021; Kornelakis & Petrakaki, 2020) highlight a critical issue concerning the work readiness of higher education graduates. This focus also responds to concerns that university offerings do not always align with labour market needs (Tomlinson, 2012), reinforcing the importance of work-related experiences in higher education and equipping students with skills to foster their employability, 'whereas in the past job security was the desired state, in today's turbulent employment system, the key for sustainability is employability' (Donald et al., 2018, p.514). Definitions and debates around employability have been evolving particularly to take into account the changing nature of work in the early twenty-first century (Emms and Laczik, 2020), which requires graduates to develop employability skills which goes beyond simply getting into employment (Cook, 2022). Some of the key literature on graduate labour market outcomes emphasises the importance of distinguishing between graduate employability and graduate employment (Green, 2016; Succi and Canovi, 2020; Siivonen et al, 2023). As argued by Robson (2023) while employment represents a fixed outcome, employability introduces a dynamic, agency-focused perspective, highlighting that the economic contributions of higher education extend beyond immediate financial returns to include graduates' ability to navigate the labour market and apply their knowledge, skills, and experiences in personally meaningful ways (Robson, 2023). In this context, innovation and diversification in higher education increasingly should support these employability goals, seeking to improve life chances and expand career opportunities, where 'career decisions are not a one-off process, rather they may evolve over time as circumstances change' (Baldauf and Luchinskaya, 2019, p.44). This is consistent with contemporary definitions of employability, for example, as defined by Small et al. (2018, p.4), employability relates to 'the capacity to be self-reliant in navigating the labour market, utilising knowledge, individual skills and attributes, and adapting them to the employment context, showcasing them to employers, while taking into account external and other constraints'. Such approaches to defining employability consider it as an integral part of lifelong and lifewide learning, where being employed is one of the possible outcomes (Cook, 2022). What is more, as further observed by Donald et al. (2018) students are now seeking to differentiate themselves; to stand apart when applying for graduate employment, recognising that a degree alone is no longer sufficient. Given the importance of understanding the factors that can enhance the student career transition from HE into to the global labour market, there is now a greater impetus on students gaining other skills whilst at university, relating to both their perceived employability and what skills can realistically be transferred to the workplace from an employers' perspective (Donald et al., 2018, p.515).

The transition from higher education to work has been described as a multidimensional process (Brooks, 2009; Römgens et al. 2020; Cook, 2022), involving a complex interplay between academic and practical knowledge. Integrating these two types of knowledge provides a foundation for developing students' employability and

work-related learning. Increasingly, higher education institutions view this as one of their core responsibilities, offering students opportunities to apply academic knowledge in real-life (or simulated) work-related settings relevant to their fields of study. Specifically, 'practically-based learning spaces,' as conceptualised elsewhere (Kersh & Laczik, 2022), integrate academic and practical learning, thereby enhancing both employability and work-related skills in the context of higher education. This process is supported by continuous boundary-crossing between academic and practically-based spaces.

Practically-based higher education: crossing boundaries

The theoretical lens adopted by this study is based on the notion of boundary crossing (Tuomi-Gröhn & Engeström, 2003; Akkerman, 2011; Akkerman & Bakker, 2011). A distinctive feature of practically-based HE is its emphasis on the importance of crossing boundaries between education and work. In the literature, the concept of 'boundary crossing' has been used to advance knowledge and understanding of work-related learning, as well as the ways learners acquire and apply their knowledge and skills across different contexts and settings. The process has been described as highly complex, as 'knowledge enters into a new set of social relations when it moves between work and the academy' (Garraway, 2010, p. 212). Bakker and Akkerman (2014; 2019) define boundary crossing as the efforts to establish or restore continuity in action or interaction across different practices (Bakker and Akkerman, 2014, p. 225). They further observe (Bakker and Akkerman, 2019, p.354) that such efforts can be found at different levels: at the individual level (e.g., a student trying to connect two or more different parallel participations, such as a school programme and a workplace), at the group level (e.g., a teacher team collaborating with workplace supervisors), or at the institutional level (e.g., school institutions creating partnerships with organisations to facilitate dual trajectories for students). Those who cross boundaries, sometimes referred to as brokers, boundary crossers, or boundary workers (Bakker and Akkerman, 2019) shift among practices, and, more than others, transfer some elements of one practice into another as they cross boundaries (Veltman, 2019).

When considering the concept of boundary crossing, our starting point is the idea that all boundaries, such as those between education and work, or between different occupational areas, represent both a potential learning resource and an opportunity to contextualise learning. This perspective draws attention to the interpretation of boundaries as spaces with potential for learning (Harris & Ramos, 2012; Edwards, 2011). As noted by Garraway, (2010) when two different communities interact their differences become a resource and there is the possibility that previous contextual constraints fall away or are muted as a new, developmental space (p.220). In this interpretation, the interplay between learning and working spaces is characterised by blurred boundaries, where the boundaries and spaces are multifaceted and multidimensional (Kersh, 2015).

Practically-based HE occurs through continuous boundary crossing between diverse spaces, settings, individual teaching and learning approaches, and various other elements. The central argument presented here is that what makes practically-based HE distinctive is the involvement of HE institutions, their staff, and their learners in a process of continuous boundary crossing between spaces of learning, the relationship between education and work, and the interaction of practice and theory.

Boundary crossing is regarded here as a major contributor to the development of practically-based HE. In this context, boundary crossing is seen as a continuous feature of practically-based HE, enhancing the quality of academic teaching and learning. This process is constructed and co-constructed through collaboration between university lecturers, practitioners, learners, and employers.

Methodology

Research approach

The aim of the research was to identify and explore characteristics, challenges and implications of practically based and industry-engaged HE models. Specifically, the following questions were explored:

- What are the main features of practically-based/industry engaged HE models and how does this contribute to university transformation?

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- What are the processes, strategies and approaches that universities develop when moving their academic provision towards a more work-related provision?

- How can networks of HE institutions and employers facilitate, support and sustain these models?

- How can the integration of theory and practice in HE support this model? What are the implications for crossing boundaries between education and work?

To address these aims a qualitative methodology was adopted using two case study HE institutions. The two cases have been selected to identify both common and diverse approaches that facilitate graduate employability by embedding work-related provisions into the higher education curriculum. Purposeful sampling was used to identify universities that had recently developed their institutional strategies with one of their foci being the employability of their students.

The approach to the data collection included, firstly, desktop and contextual research about the two case study universities such as the skills and employment profile of the local area of the institutions in order to give deeper understanding of the university and local context in which they are situated. Secondly, we undertook empirical data collection to explore the practically based HE offering of the case study institutions. The empirical data collection was done using semi-structured interviews with a range of stakeholders from the two universities, including pro-vice chancellors and other members of the senior leadership teams, heads of schools, lecturers, staff members with either a university-level or school-level professional role such as employment engagement officers, and students. A total of 20 interviews were conducted across the two universities between Spring 2023 and Summer 2024. A summary of the interviewees can be found in Table 1.

Table 1: Number of participants interviewed

	University 1 (U1)	University 2 (U2)	Total
Staff	8	5	**13**
Students	3	4	**7**
Total	**11**	**9**	**20**

Thematic content analysis was used to identify themes and sub-themes from the interview data using a combination of both inductive and deductive approaches (Fereday and Muir-Cochrane, 2006). It must be acknowledged that the universities' practices are continually adapting and evolving therefore further changes may have occurred at the case study institutions since the data was collected.

Ethical considerations

Edge follows the British Education Research Association (BERA) ethical guidelines 2024, concerning issues such as informed consent, anonymity of interviewees, confidentiality of research data and data protection. The ethics committee at IOE, UCL's Faculty of Education and Society also granted ethical approval for this research. Each participant was invited to take part in an interview voluntarily. They were given an information sheet about the research and signed an informed consent form. We have taken the decision to anonymise the two institutions involved in this study to protect the confidentiality and anonymity of the interviewees.

The research has some limitations in terms of the small number of interviews that were conducted and the fact that the research only encompasses insights from two universities. The interviews were conducted with university staff members and students and therefore perceptions are limited to these two stakeholder groups. Interviews with other stakeholders, such as employers and graduates, would provide a richer insight into the topic. However, we ensured that interviews were conducted with a broad range of staff members, across subject areas and professional services, and with staff at a range of seniority levels.

Findings and Discussion

Employability and work readiness agenda: innovation and diversification of HE

The changing landscape of higher education has significantly influenced universities' priorities and agendas, fostering new approaches and strategies to promote employability, job-readiness, and industry-engaged, practically-based higher education. Both universities participating in this research emphasised the importance of employability and preparing work-ready graduates who would have a 'taste and understanding of industry' during their higher education studies. Fostering employability and work-readiness has been identified as one of the key priorities in both universities, as well as ensuring that graduates are equipped with the skills, knowledge, and behaviours needed to prepare them for the workplace. There is a growing recognition that the changing perspectives on employability, previously seen predominantly 'as a career service agenda,' should now be embedded into teaching and learning across all higher education disciplines. This has become a core part of the employability strategies being implemented by both universities.

University leaders describe this as a multi-dimensional process that has been initiated in response to both the changing landscape of higher education and the requirements of industries and students. The question of what makes a good degree is continuously being reflected upon, with fresh perspectives on employability and skills development for the contemporary workforce:

> *You know, those definitions around what constitutes a successful outcome for a student, […] what is a good job? What is a good degree? […] those things become more and more kind of measured I think* (Middle Leader (ML), U2).

Both universities have demonstrated their commitment to the employability agenda, enabling students to develop essential skills, confidence, industry knowledge, and behaviours for workplace readiness. It has been noted that students' attitudes toward higher education and the value of their degree are changing, 'probably as a result of the economic climate, as well as also students' outlooks about working for employers and wishing to be in more control about what they do, when they do it, and the nature of work' (Senior Leader (SL), U1). In both universities, there is a strong focus on what has been described as a 'wide push for improvement for graduate prospects' centred around 'employability, enterprise, and engagement with industry and practical things that are going to help sort of longer-term career moves instead of just you do your degree and then you're gone' (Lecturer, U2). In addition, there is widespread recognition that 'your degree alone will not get you a job,' and there is growing emphasis on enabling student success, talent recognition, and celebrating achievements. There is also a focus on building networks, enabling students to connect with others, and recognising best practices of teaching and learning:

> *We also have building networks, so enabling building networks, enabling us, and celebrating best practice. So, we do all of those things within the scope and umbrella of academic practice* (Senior Leader, U1).

Student interviews have supported this perspective, indicating that students have high expectations of their courses, which go beyond earning a degree to include developing employability skills, gaining practical experience, and engaging with employers:

[Our learning] is not just something theory-based that actually holds no weight in the real world, especially from like, an employability type of perspective (Student, U2).

I think in regards to employability for what we want to do, I think the main thing that the university gives you is the confidence really (Student, U2).

In the current landscape of higher education, it has been noted that students are looking for more than a conventional academic experience, and expect their programme to foster their career path and help develop their professional and wider networks:

And I think all of that pulled together, in terms of value for money, what students are coming to higher education for is absolutely critical. They're joining us with the expectations that this is going to get them into a career path that they couldn't have. So, it's important not only to provide their academic experience, but their wider enrichment, and also how they can connect and network. The networks they build at university are absolutely key. It's how we can bring people in to partner with us to build that wider network (SL, U1).

Providing students with opportunities to build their professional networks through organising various activities, such as work experience, career fairs, and employer presentations, facilitates their awareness of the workplace and gives them a taste of what it's like in the real world of work. There is a common view shared across our cases that this is where the university can play a crucial role:

We want our students to be confident in their career choices, and hopefully we can give them enough experience and exposure to, you know, that working for an organisation as well as on their own to make that decision. That's ideally what we're aiming for (SL, U2).

This requires what has been referred to as 21st-century skills, which go beyond subject-specific knowledge and include transferable skills to enable graduates to think beyond their discipline and adapt to the constantly changing workplace:

We need to ensure that our students have the 21st-century skills. So, be able to problem-solve, critical work, and have creative mindsets. But also link and be able to work outside their discipline is absolutely key and be able to have an entrepreneurial mindset in the sense that they can go into a different discipline. And they can change their language to something that discipline can understand. So, you know, it's exciting when engineers work with health, or lawyers work with engineers, just creating that synergy. There is something special and you could only get that in a university because that's where we've got the broad skill set (SL, U1).

Fostering employability and work-readiness has become a part of institutional strategies across our cases, and the involvement and collaboration of all key stakeholders has been emphasised as crucial. Our data indicate that this requires continuous boundary crossing between different spaces and contexts to link academic teaching and learning with the workplace, through practically-based approaches within the HE classroom and beyond.

The development of practically-based approaches involves engaging students through different forms of learning, workplace, and community experiences. The data indicate that the cross-over between academic studies and practical experiences involves more than simply transferring knowledge and skills from one context to another. It requires enabling learning spaces, underpinned by a range of components, including continuous stakeholder collaboration, curriculum development, and the integration of theory and practice.

The role of university staff in fostering cross-boundary learning

The interviews indicate that in both case studies, one approach involved the development of new roles within the university and the expansion of existing roles to facilitate employability, career development, and employer engagement across university departments. This included roles such as 'employer engagement officers', 'partnership and work officers', and others. These brand-new positions were created to foster graduate employability and career development by developing strategies to strengthen university-industry links. This may encompass, but is not limited to, initiating opportunities such as placements, work experience, and other employer engagement activities to bridge the gap between industry and academia. For example, one newly developed role at U2, at the central level, involved working with and developing communication with employers, aiming to understand their expectations in terms of graduate employment and recruiting students for internships and work experience.

> *It's quite a new role [...] and there's a number of different functions of that role. First of all, it's kind of primary contact for businesses and local employers and national employers to get in touch with me. So I can sort of go through that process of figuring out what it is that they want to engage with. [...] It's kind of just making sure that those businesses and those employers get to the right place for what their sort of perception is of what they want* (SL, U2).

These dedicated roles have been described as multi-dimensional, with student outcomes and experiences at the core of their objectives. A particular focus is on enriching student experiences by connecting them with employers and providing opportunities to learn about industries relevant to their career aspirations, thus enhancing their employability:

> *So, a bit like business development with a graduate outcome, objective. And that involves engaging employers of all different shapes and sizes and descriptions to work with the university for the purpose of ultimately, permanent graduate positions, but also the things that might lead an undergraduate to find permanent work. So, internships, placements, work experience, all of those will hopefully lead them to graduate employment* (SL, U1).

At the same time, some existing roles, both central and within specific departments, have been expanded to include aspects of developing collaborations with industries and fostering 'crossing boundaries' between theory and practice. In addition to newly created dedicated positions, our interviews indicate that increasingly, other roles within academia incorporate elements of the employability agenda and crossing boundaries between theory and practice across different disciplines. For example, a lecturer in the area of filmmaking noted that his responsibilities go beyond teaching and curriculum design:

> *Within my role, though, I've got a lot of non-teaching responsibilities, such as being a very new role within the university linked to the [Graduate/Employability Office], [...] [the role of] academic champion for employability and enterprise. And I run two businesses, social enterprises, and that's been my primary focus anyway. So that's got a lot of insight and passion and interest in that area, as well as the creative side of things. So I'm doing more and more of the things that feed into curriculum where everything's developing, rather than [having] just standard [...] lecturer position* (Lecturer, U2).

These developments are not without challenges, and bringing together academia and industry, and crossing boundaries between both contexts, is a complex and multi-dimensional process. The role of academic staff goes beyond what may be considered the traditional academic role of acquiring (through research) and distributing (through teaching) knowledge. It involves a responsibility to bridge the gap between knowledge

acquired at the university and its relevance in the outside world, through the additional responsibility of engaging with employers (Emms et al., 2024, p.6). Some challenges include an increase in workload for staff and differing (sometimes opposing) perspectives and approaches from the point of view of industry vs. academia.

This is often being supported through university staff's pre-existing experiences and contacts. Many academic lecturers retain strong links with industry and continue to practice professionally, which enables them to continuously cross boundaries between theory and practice, as well as industry and academia, bringing a 'currency of industry knowledge' and sharing with students their insight, passion, and interest in their professional areas:

> *They [lecturers] will retain a currency of industry knowledge. That's quite a strong flavour both across everything from our professors, right down to our teaching fellows and associate fellows, etc. We also make significant use of part-time hourly paid lecturers* (SL, U1).

The rich experiences in running businesses and enterprises that lecturers bring to their teaching create an environment where academic instruction is strongly intertwined with professional knowledge and skills, offering deeper insights and inspiring passion and interest in their fields.

> *I have been at [U2] in the capacity at first as more like a freelance academic tutor since roughly 2009. And then, in 2020, I was doing various amounts of part-time equivalents with regular work […] So, I've gotten between point six and point eight as a lecturer […]* (Lecturer, U2).

Engaging in professional activities outside their contracted teaching time allows lecturers to foster an authentic industry perspective into the academic environment. As the excerpt below indicates, these experiences offer opportunities to 'go beyond' the campus, thus crossing boundaries and bridging the gap between theory and practice. This active involvement in the industry not only keeps lecturers updated with the latest trends and developments but also enables them to bring fresh insights back to their students. By participating in current projects, such as working on high-profile shows or collaborating with major production companies, lecturers contribute a dynamic, real-world perspective that enriches the learning experience and connects students to industry networks and emerging opportunities. This hands-on engagement ensures that academic instruction remains closely aligned with professional practices, fostering a learning environment that is both relevant and inspiring for students aspiring to enter these fields:

> *[Name of the Lecturer], who runs the Masters in [name of the course related to the filmmaking discipline], does a lot outside of teaching time. He does a lot of freelance work on things like Emmerdale and Coronation Street and other shows to keep in with opportunities and to see where things are developing. [Name of the lecturer], who's the Deputy Programme Leader, works closely with a production company […], and going to be linked into hopefully the multimillion-pound film studios that are going to be a mile away from the campus. And then all three media who's based in London and various others* (Lecturer, U2).

Our case studies illustrate some emerging strategies and processes related to crossing boundaries that both universities develop when moving their academic provision towards a more work-related approach. Specific strategies include (1) curriculum redesign, (2) industry engagement and (3) bridging the classroom and the work environment through creating innovative learning spaces. It's worth acknowledging, however, that there are overlaps between these strategies. We will turn to each of these next.

Curriculum (re)design

The strategy related to curriculum redesign has been strongly associated with re-orienting the provision of the different disciplines to ensure they fit suitably with the cross-disciplinary nature of 'industry collaboration' (Emms et al., 2021), enabling both students and university staff to cross boundaries between working and learning, theory and practice, and industry and academia. At the core of the curriculum redesign strategy, the broad objective is to address the question: what do students need to learn from this subject to be able to apply their learning in the real world?

> And we are still asking ourselves, what do I need to teach my students about this subject? I think that's the wrong question for the environment that I've painted. The key question is: 'what do my students need to learn from this subject and apply in the world?' And that's a fundamentally different value proposition that genuinely brings the student to the heart of the matter (SL, U1).

This calls for a shift in curriculum development, with the curriculum 'being built around students', taking into account their aspirations and needs, and enhancing their employability through practically based learning and industry engagement.

The integration of practical elements into curriculum development does not undermine the significance of disciplinary knowledge. Instead, subject-specific expertise remains a foundation in the context of higher education, as 'there is an element of theory behind everything' (SL, U1). However, there is a growing shift in focus - from merely acquiring theoretical knowledge to understanding how it can be effectively applied in real-world contexts.

The example below, that comes from a member of the senior leadership team at U1, emphasises the importance of applying or activating theoretical knowledge:

> One needs to know physics, you just need to know it. You can't avoid it. That's fine. You need to know it because it informs all else. However, the means of that dissemination, and the means and the purposes of that have radically changed and are radically changing such that having that knowledge is not the endpoint. The endpoint is how to activate it in a real-world setting (SL, U1).

A key principle of curriculum development in this context is its 'outward-facing' orientation, characterised by a strong connection to the outside world. This innovative, demand-led approach ensures that course design is informed by labour market needs, with particular emphasis on addressing the demands of local industries. This focus was emphasised by both universities involved in the study.

Such an approach supports both the aspirations of students and the evolving expectations of employers and professional sectors. By aligning the curriculum with real-world opportunities, this model not only equips learners with relevant, actionable skills but also fosters a meaningful and sustainable relationship between education and employment.

> So the way I would describe our curriculum where it works best, is outward facing. So there is always connection with the outside world. It isn't a knowledge for knowledge sake again. It is demand-led, so that the course has come about via an element of market analysis which includes both ends of the pipeline-both the student demand for that kind of course. But also the employer demand or the jobs market demand, or the professional landscape demand for that kind of skill set (SL, U1).

Responding to industry requirements has been described as an important element of curriculum development across disciplines in both case studies. Being responsive to changes and developments in relevant industries, and reflecting these developments in specific programme curricula, has been identified as one of the emerging strategies. However, it's been acknowledged that this requires joint efforts and collaboration between those involved in the process. As noted by a Programme Leader (U2):

> So I think really, in terms of the curriculum development, it's keeping an ear to the ground and keeping an eye on what the industry changes are and the requirements and where the job market labour markets [are] going. Looking at relevant industry and sector statistics and things. And there's other staff in the faculty, three or four, that are very heavily involved in these areas that then drip-feed it down to everybody else. So it's always covered for the specific specialisms as well (Lecturer/programme leader, U2).

Similarly, University 1 noted the significance of collaboration with various stakeholders, including industry representatives:

> there's some really interesting models started to occur. So, when we do curriculum development, usually, the academic developer and the programme team, with other stakeholders from quality [and] from the library, will come together. And it's that norming, forming, storming that is absolutely essential. And there's usually an industry advisor as well in that (SL, U1).

This quote highlights the importance of collaboration in creating effective learning and working ecosystems, particularly in the context of curriculum development. The process described involves bringing together a diverse group of stakeholders, including academics, programme teams, library staff, quality assurance personnel, and industry advisors, to co-create educational content as part of curriculum development. Such collaborative environments foster knowledge sharing and mutual learning, which are key components of a broader ecosystem where learning and work are interconnected. By involving industry advisors, the ecosystem bridges academic theory with practical, real-world applications, enhancing the relevance and impact of the educational programmes for students' employability:

> And that industry advisory board is really key in terms of ensuring the curriculum is current and has currency. They will also advise on other things. They'll come in and do live briefs, they will connect us, they will offer placements, internships, mentoring opportunities; there's a whole range of things that can be offered in that stakeholder group. But making sure students have the opportunity to network with like-minded people, with people from other disciplines and from mentors outside the organisation. Because everybody can learn from everybody (SL, U1).

The involvement of industry representatives in the process of curriculum design has been described as 'critical', with the growing tendency that a programme 'won't get through validation unless employers have been involved and consulted, at the very least consulted, and shown that a range of employers have been shown the curriculum' (SL, U1). Employers have also demonstrated responsiveness to this development, recognising the importance of collaborating to enhance students' practical skills and employability within the context of higher education:

> I think, yeah, just as a sort of a last note, from talking to a lot of employers on a weekly basis. They're really keen to be involved, to get involved in curriculum development in what we do, and so they're quite open to suggestions as to how they can get involved with that (ML, U2).

In addition to practical and industry special skills, there is a growing demand from employers towards embedding so called transferable skills in the curriculum, that would enable the students to engage with multiple experiences as they progress through their career development journey:

> But a lot of them [employers] recognise that unless students have a very specific and defined career path, such as a nurse or a doctor or an engineer, it's those career supporting skills that are most important, such as your critical thinking, your problem solving, your communication. And those skills can't be learned in a lecture theatre. And that is kind of the bones, that's the foundation for what we're doing, I think. And those skills take time, and a number of different experiences will help build those. So I think that's kind of where we're coming from, with that rich and varied curriculum experience that we're trying to offer (ML, U2).

The notion of curriculum development is increasingly shifting towards curriculum co-creation, emphasising the need for active involvement from all key stakeholders in the process. At University 2, a new department has been developed which focuses on graduate prospects and plays a mediating role by bridging the gap between academics and employers, fostering collaboration to align higher education provision with industry needs:

> The natural progression of that kind of stuff is to then go okay, you're developing this new module, why don't we all sit around and figure out what the best approach might be? […] We let the academics decide the content, but we help business through our mediation (SL, U2).

It has been noted, however that this process is often complex, and it involves collaboration among diverse stakeholders, often coming from different perspectives and priorities:

> Now, this [curriculum co-creation] is obviously more complicated. And it's complicated by a range of different factors. One is, it wouldn't be unusual to find yourself with an industrialist, let's call them, who believes that students should be learning X. And an academic who may or may not have had any industrial experience, saying, actually, we prefer to teach them Y (SL, U2).

Developing dialogue and fostering meaningful collaboration has been acknowledged as critical for facilitating industry engagement. Consequently, creating approaches to strengthen relationships and encourage employer involvement has become central to the employability strategies of both universities. In particular, engaging with local employers has been recognised as an important strategic priority.

Industry engagement

As a key development of practically based higher education, specific attention is paid to employer engagement in its various forms, including working with SMEs, i.e., contextualising academic learning in local industries. The notion of industry collaboration enables students to work closely with staff and industry partners on various work-based learning opportunities throughout their courses, such as placements, client-facing projects, and other work-related experiences.

Employer engagement takes many different forms, ranging from industry representatives being on university industry advisory boards to involvement in curriculum development (as noted in the previous section), providing placements, work experience and project work for students, and taking part in career fairs and employer-led presentations. Such opportunities for employer engagement are considered beneficial ways in which students can be exposed to employers and start learning about their industry:

They [academic departments in University 1] have employers who are involved in the assessment of projects as well as the setting of live projects. So, these are all beneficial ways in which undergraduate students can be exposed to employers and what employers have to offer, and get a greater understanding than they might otherwise have of how an employer functions and the type of works and opportunities that are there for them (ML, U1).

Placements

Our data highlight both the benefits and challenges of employer engagement. In both universities, the obvious benefits of industry placements have been discussed, such as learning about the industry, acquiring practical skills, and developing networks. Employer engagement has been linked to the development of employability, skill development, career support, as well as entrepreneurial and enterprise skills in students, aiming to

inspire our students to think independently, to encourage that self-discovery, to get involved in as many things as they can to make that decision in terms of what's after university. What comes next, what am I, what am I going to be fulfilled by in a career. [...] to help them make those decisions, and go on that self-discovery journey (Graduate prospects officer, U2).

However, there have been inconsistencies identified. As noted by a SL (U1), there is an opportunity for students to have a placement of some nature, however at the moment, it's not mandatory, and the nature of a placement in terms of duration and content varies between different disciplines and programmes. The ambition is to ensure that all students undertake placements. However, this has been associated with a number of challenges, such as difficulties for students with caring responsibilities or those with part-time jobs:

[...] about 60% of students now have a part time job. It was in the paper in the last month. [...] Well, I'm pretty sure the figure is a lot higher than that. Because survival for students is very challenging and therefore, when you are planning the curriculum, engaging the employers, and then the students finding the time, as well as working at Tesco, or wherever they might work.... sometimes an employer might pay on a placement, it's a bit of a difficult conversation to have. Would you give up your job at Tesco to take a four-week placement in a biomedical lab? And I'm actually going to be earning more [at Tesco], is it worth it? I'll still get a job at the end of my degree, hopefully (ML, U1).

Another challenge is to both ensure and sustain employer collaboration, to create mutually beneficial partnership, making partnerships both sustainable and mutually beneficial, building trust between academics and industry, specifically SMEs. At present, employer engagement is often based on personal contacts, which may 'disappear' when key people leave:

We had lots of transactional engagements as a university where individual academics had built a relationship with a company around a specific project. But once that project was over, you know, the academic moved on to the next project and partnership. Then they just wandered off and did whatever. [...], we did have a lot of these individual transactional relationships, but none were really strategic and didn't engage outside of just either one academic or one school or one department. I took a few of those and I've developed them across multiple schools, academics, projects (SL, U1).

Another challenge highlighted is one of coordination. Examples were cited where some employers had been approached by academic staff from different departments independently, which has been described as 'knocking on the same employer's door at the same time on a particular day':

I think unfortunately we've got a situation where we've all got our activity to do and we're all doing it. But the danger is that we all have the potential to knock on the same employer's door at the same time on a on a particular day. So we don't have at the moment, oversight of, of everybody's activity, university is a big place. And quite often you maybe get approached from people where, you know you've spoken to them. Or you start the conversation with 'Have you had any contact previously with the university?' but there's no central database for employers that everybody who's involved in employer engagement is using. There are plans to correct that but it we're in a situation where that's not the case at the moment (ML, U1).

Therefore, coordination and sustainability in building and maintaining relationships with industries have been recognised as challenges that need addressing. Both universities are increasingly acknowledging the importance of developing sustainable strategies for employer engagement, with some newly created roles (see previous sections, page 14...) specifically introduced to enhance communication and collaboration with industry partners. Reflecting on his role (newly created), a university staff member describes how he draws on his prior experience to support the agenda of strengthening employer engagement and fostering sustainable relationships by connecting employers with academic staff and students, through what he defines as a 'multi-channel' approach:

[…] this is my first experience of higher education. I spent 25 years in Further Education, mostly working with employers […] I've been an Apprenticeship Manager. I've been a Business Centre Manager in an FE institution where we had connections with large and small organisations. So, I'm used to that environment. So, my first port of call was to make the contacts that I needed to make within the university to ensure I had the right connections, but I also have access to a database of programme leaders. So I know who's running which curriculum, and it would be me who introduces them and make that introductory email to an employer or to share an opportunity with them. So that they can then make sure it's shared with their teams and put in front of students. I think that multi-channel approach in terms of those opportunities, getting out there is important, because students don't just use one source of reference for jobs (ML, U1).

Similarly, At University 2, concerns have been raised about 'losing many opportunities to build relationships' with industries. To address this, strategies have focused on finding ways to highlight the mutual benefits of industry partnering with academia, as well as the potential for growth and shared objectives. Consulting employers on maximising the benefits of academia-industry partnerships is considered to be a foundation for meaningful cooperation that considers the needs and perspectives of all stakeholders:

> So, we have an objective, a cultural change objective for our partnerships to work with employers and with other organisations to be mutually beneficial. And we, before the end of this academic year, we'll be introducing a stakeholder satisfaction survey, that attempts to determine how well we've moved along that path. So, we'll be asking all of our partners, to what extent do you agree that your partnership with us is mutually beneficial (Graduate Centre, U2).

Our data indicate that listening to and involving employers as equal and active partners provides a meaningful foundation for cooperation and industry engagement.

Bridging the classroom and the work environment through creating innovative spaces of learning

For HE students, providing opportunities to acquire and practice work-related skills are strongly acknowledged as a prerequisite of developing employability and career chances. In the context of the two case studies, creating and co-creating learning spaces to 'bridge theory and practice' emerged as a significant development. This process occurs through both formal and informal learning activities across various contexts and environments in both universities. Such spaces extend beyond physical locations. The spaces where students can integrate academic learning with practical experiences can take different forms, including specific activities or events (e.g. work experiences), networking opportunities, instances of informal and formal learning in the classroom, and engagement in work-related projects. These diverse environments provide students with the flexibility and affordances to bridge the gap between theory and practice in ways that could be either structured or spontaneous, or both.

Therefore, fostering innovative spaces that enable students to integrate their academic learning with practical experiences emerges as a collaborative effort between academic institutions and industry, often co-created to provide meaningful and practical experiences. For example, in the art and media department, students collaborate with SMEs on project-based initiatives, thus creating spaces to engage with workplace activities. Dance students, for instance, work alongside production companies to create professional performances, which they then take on tour across the country. This approach not only develops their creative skills but also exposes students to the operational realities of their industries.

In fields such as business studies and law, practical learning is embedded through initiatives like running a pro bono clinic. This allows students to engage directly with real-life cases, offering services to the wider public and gaining invaluable insights into professional practice. As one senior leader at University 1 explained, this type of engagement provides students with 'real-life experience through real-life cases working with the wider [city] public':

> we have a law clinic […] where students will engage directly with the community and provide pro bono legal advice […]. They're working with solicitors, both our own qualified solicitors, and also people who give up their time from practice, to advise sometimes charities, sometimes individuals, mainly family, housing, social security kind of advice (Lecturer, U1).

Another approach to workplace learning involves in-house solutions, particularly through shadowing opportunities within the university itself. This method creates an intermediary learning space, bridging academic knowledge and work-related activities. By working in a familiar environment, students gain practical exposure without the logistical complexities of external placements. As a senior leader at University 2 observed, 'that in-house process makes it so much easier because you don't have to worry about [...] external documents and paperwork'. As a result, these learning spaces become co-created and co-constructed, not only enhancing students' practical skills but also helping them build confidence in transitioning between academic and professional contexts.

Fostering interdisciplinarity through learning spaces creates opportunities for students to apply their skills across different fields. This approach encourages them to cross boundaries between disciplines and reflect on the broader applications of their skills, enhancing their ability to navigate complex, real-world challenges. An example of fostering interdisciplinarity in higher education can be seen in how universities tackle these complex real-world problems, referred to as 'wicked problems' in the example below. These challenges require innovative solutions that draw on collaboration and skill sets from multiple disciplines:

> *And I think where it's becoming increasingly interesting, is where we're getting the wicked problems of the world manifesting themselves in partnerships between disciplines that wouldn't naturally seem to go together. So, as an example, a couple of years ago the engineering students were sets a brief of how to get health care provision to remote parts of Third World countries. And it ended up being a collaboration between engineering, physics, nursing, business logistics, and design. To develop what was essentially then a mobile field hospital in a shipping container. And to give you an idea there was then a collaboration between a multiple range of disciplines to enable that to happen. One of the questions was from how high can we drop this thing without the instruments inside it shattering?* (SL, U1).

Furthermore, engaging with contemporary topics and preparing students for emerging challenges, both within their fields and beyond, helps ensure their knowledge and skills remain current. This approach supports their ongoing professional development and equips them to adapt to an ever-changing world.

> *In accounting, [...] we've got a new module, fraud and financial crime, which will introduce students to a topic they are very interested in. There's not that many careers in it, and you'd probably have to go and do your professional exams. But it does enable them to kind of get to grips with quite a contemporary topic, which they can identify with, not because they've committed any form of financial crime, but because it's something that's on television a lot. It's something everyone's familiar with. And in the current context, of internet scams and stuff, most of us have probably received some form of attempts to scam us out of money. That's kind of how we lead into that module, and then it goes on to kind of corporate financial crime, but it is getting students engaged with it at a very personal level, that we probably all know somebody who has, hopefully not necessarily been the victim, but at had that attempt* (SL, U1).

Introducing students to 'more contemporary things beyond purely technical' (SL, U1) creates opportunities to expand and enrich their learning spaces. This approach encourages crossing boundaries between established and emerging knowledge, equipping students to address contemporary challenges more effectively.

Embedding employability through career support, innovation and diversification

Career Support

Universities are actively incorporating personal career planning into their employability strategies, offering students opportunities to explore and discuss their career aspirations. This involves connecting students to appropriate services that can support them in achieving their goals. Initiatives include preparation for interviews, with an emphasis on keeping up with employer demands, such as mastering video interview techniques.

There is a strong focus on supporting students from underprivileged backgrounds, recognising that their career aspirations can often be shaped or limited by personal experiences and lack of networks. Employers are increasingly seeking to recruit from more diverse backgrounds and are keen to provide opportunities to promote equity in recruitment.

> *Ultimately, they want the best candidate. Many employers will come to us because we're a very diverse student cohort. Our students are sourced from the local area predominantly. We've got significant pockets of deprivation and low-income families and many of our students come from there. So, […] career aspirations are probably limited by their home surroundings potentially. […] there's probably all this idea that they're not good enough to get jobs as top lawyers or top engineers or top scientists and things like this* (ML, U1).

However, a challenge associated with this development, involves empowering students and developing confidence, for those with less privileged backgrounds. Universities have a key role to play in developing confidence, to encourage students to recognise and embrace these opportunities to enable them to fulfil their potential. Employers maintain high expectations and seek candidates with strong skills and potential in a very competitive market. This highlights the challenges in terms of levelling the playing field.

In addition, universities are increasingly diversifying career support initiatives to enhance students' employability by integrating supplementary qualifications and offering extracurricular opportunities. For example, embedding relevant technical qualifications within programme delivery allows students to graduate with not only academic credentials but also industry-relevant skills. As one senior leader explained, this may include training in specific software or technical tools, such as audio and video editing, to better prepare students for their chosen industries.

In some programmes, qualifications like the iDEA (Inspiring Digital Enterprise Award) are embedded into the curriculum. At the business school, all first-year undergraduate students complete this award, which develops digital, enterprise, and employability skills. Another example is the Bloomberg Market Concept course, a two-day intensive training that provides a certificate highly valued in financial markets.

Extracurricular opportunities offer students ad hoc experiences to further develop their practical skills. For instance, in creative arts, students have the chance to collaborate with the Asian Media Awards, an annual event celebrating achievements in the Asian community across various fields such as design, music, and performance. A recent partnership involved students announcing award nominees online, giving them hands-on experience in filming and public speaking. While unpaid, such experiences align with the university's broader commitment to fostering meaningful industry collaborations and enriching student learning.

Networking to support career development

Interactions and networking among diverse stakeholders play a crucial role in fostering learning at the intersection of theory and practice, facilitating career development and employability for students. These connections help create innovative learning spaces that may integrate working and learning, enabling staff and students to develop networks and engage with communities relevant to both their academic and professional contexts.

University staff involved in promoting employability shared that they view networking as part of their role. In developing and maintaining links with employers and wider stakeholders, they frequently rely on their past and current professional contacts:

> *I undertake a lot of networking. So, patron members of the chamber of commerce within [city area], which is a great source of connections and links, both for small businesses and larger businesses. And I've been networking for many years before I came to the university. So that's part and parcel of my wider network of employer relations* (ML, U1).

University staff emphasised the broad spectrum of skills students can develop through networking and by crossing boundaries between academic and professional environments. This includes entrepreneurial and enterprise-focused opportunities, which provide students with a diverse and valuable learning experience while enhancing their career prospects through exposure to stakeholder networks - a process described as mutually beneficial for both employers and students. Social interaction, as part of engagement with professional networks, plays a key role in shaping students' professional identities:

> *You've got that employability, that skill development, the career support and skill element, but you've also got the other end of the spectrum, which is the entrepreneurial and the enterprise. [...] think also from the student perspective there's the social interaction, which I think is really important. [...] So for me that's a big thing, that social aspect and that social element, but also, it's building the student's professional identity. And there are multiple benefits* (ML, U2).

Networking and collaboration offer opportunities not only to bridge the gap between theory and practice or academia and industry but also to connect different academic disciplines, as well as professional and academic environments within higher education. The higher education landscape provides affordances for co-creating diverse networks for students—a process actively supported by university staff, who emphasised that they have 'a part to play' in this:

> *Student networks vary considerably. [...] there's nowhere [...] more diverse than a university environment. So here, they can mix with any discipline, they can mix with technicians, academic staff, professional service staff, and fellow peers. So, it's capitalising on them broadening their horizons outside their own discipline, I think that we have a responsibility to do that, it's absolutely key for us. And that's something we do well. We want to connect students from different schools, and the Student Union have a part to play in that through clubs and societies. But also, we as academics have a part to play* (SL, U1).

The head of the Media School (U2) highlighted the significant benefits of networking and collaboration, both among students as peers and with external stakeholders. These interactions are described as extremely valuable in breaking down barriers and boosting students' confidence. They also contribute to students' sense of belonging within their professional communities, as they gain industry insights, engage with employers, and build meaningful relationships.

We've got a media hub, which is a space where interns, professional staff are based. Students kind of work with each other. They can work on projects, they can ask questions, get help, work together, but we also have had various external kind of people based there. So we have had a BBC journalist based there. We've got a TV company and the whole idea is bringing them into this community of practice where they feel increasingly like they belong to a professional community. And just being totally honest, and really sort of transactional, we just know that if we get students into places of employment, it boosts their confidence, and breaks down a barrier by getting their foot in the door. So anytime we can get students on a placement, you know, into work shadowing, or bring people in so that they're just in that environment. That's the stuff that breaks down the barriers and allows them to build relationships (ML, U2).

Being able to network has been described (SL, U1) as essential skills as, 'they [students] are not going to stay in the same job, they're going to move between disciplines'. Therefore, those wider skills and attributes are absolutely key in making them employable. Part of that is being able to network.

Students' experience and perspectives

Interviews with students have revealed an appreciation and expectation for both the development of employability skills and the acquisition of broader academic knowledge relevant to their field of study as integral components of their higher education experience.

Bringing together theory and practice to enhance employability

Valuing the acquisition of practical skills as essential for employability has been a recurring theme in their reflections on their university studies. Overall, students have emphasised that connecting what they learn to the realities of the workplace and having the opportunity to acquire practical skills relevant to their desired industry is a crucial aspect of their learning experience within higher education:

[our learning] is not just something theory based that actually holds no weight in the real world, especially from like, an employability type of perspective (Student, U2).

Students particularly highlighted that connecting theory to practice is essential for higher education studies to provide meaningful learning outcomes, particularly noting 'the very hands-on nature' of their modules which 'works for them'. As one student pursuing a degree in Filmmaking described, theory becomes meaningful only when it is applied to practice:

you've got the theory learning part, but there's a difference between knowing it in theory and having to do it and deliver on said theory. Like you can have all of the theory in the world in your head. But without like the skills that you would achieve from doing a more practical course like this, you'd be stuck like a fish out of water (Student U2).

Bridging the gap between theory and practice, and recognising the importance of applying their theoretical knowledge in hands-on settings, highlighted the value of both. Students supported the view that understanding foundational concepts before engaging in practical work enhanced their learning experience and allowed for deeper comprehension. One student undertaking a course in biochemistry, provided an illustrative example of this process in the context of their degree studies:

> *I mean, more often than not, we would get theoretical teaching first. [...] We were taught what antibiotics are, how they work. We were told how they were manufactured, a history of them, all the theoretical stuff behind antibiotics, and then we were given a chance to go into the labs and utilise antibiotics to see how certain pathogens can be resistant to them. So, instead of just being told stuff that has nothing to do with anything [...] we were told the back story, the background, the information that we needed to then go into the labs, do the practicals and get quantifiable results that reflected how well you have learnt and absorbed the theoretical teaching that we were given* (Student, U1).

In bridging the gap between theory and practice, students appreciated the variety of learning resources and interactive teaching methods that extended beyond traditional lectures. They highlighted the benefits of smaller, classroom-based seminars that encouraged discussion and engagement, as well as the integration of digital tools that supported their learning. In addition to practical lab work, online platforms provided valuable supplementary materials, allowing students to reinforce their understanding through videos, reading lists, and even virtual simulations. One student described how these diverse learning methods enhanced their experience:

> *There was about 20 or 30 of us with the tutor at the front [at the seminar]. And they're, yes, talking at us, giving us information, but then they'll stop at certain points and ask questions. And you can actually get engaged. You can have discussions. There were practicals, of course, but we also have the Blackboard website that has that has access to all sorts of different documents that you might need to use. And there was even some software in the first and second year where we were in a virtual lab. So instead of just watching someone else do it, you are able to use your mouse and get the tip on the pipette and use that to take up 10 microlitres and then put it into something else* (Student, U1).

This highlights how new methods enhances the link between theory and the world of work by providing interactive and digital learning opportunities. Virtual labs, online resources, and discussion-based teaching approaches allow students to actively engage with theoretical knowledge in a practical way. These innovations bridge the gap between academic learning and real-world applications, ensuring that students develop the hands-on skills and critical thinking necessary for their future careers.

Enhancing employability

Students further emphasised the importance of aligning their skills with the expectations of employers. They highlighted how university experiences, combined with opportunities to apply their learning in practical contexts, help bridge the gap between their current abilities and the requirements of the workplace. This idea is captured in the following student perspective:

> *Having that experience opened me up to the fact that, you've got your skill level here and this is what employers are looking for and having this opportunity to come here, study, as well as the opportunities that the university provides you make efforts to bridge that gap between where you are now and where you want to be or where you need to be in terms of like getting employed* (Student, U1).

Incorporating diverse portfolio and broader assessment methods provided students with a more practical and relevant evaluation of their skills, aligning with employers' expectations. Unlike traditional written dissertations, which students feel can sometimes feel disconnected from industry needs, these alternative approaches, such as project-based work, offered them the opportunity to demonstrate their abilities in a way that felt more impactful and more meaningful to their prospective employers. Many students expressed that these methods carried greater weight and currency in their future careers, allowing them to demonstrate critical thinking, creativity, and applied knowledge in a manner that was more in line with employers and professional environments. As described by one student undertaking a course in filmmaking:

> *At the moment we're working on our final project, our final film, our dissertation, and like, it's great that that's a physical, practical thing to do. We've got to make a 20 minute film and we're kind of just left to our own devices to build it ourselves, with the help of mentors. [...] We've learnt a lot and it's gone quite smoothly, which we are quite happy about [...]. It's a real asset to the course doing that rather than writing a dissertation. [...] because we can then use it to showcase our skills. So it's not just something theory based that actually holds no weight in the real world* (Student, U2).

In addition, students have shared the view that working on their projects collaboratively helped to promote their personal skills such as teamwork, communication and problem-solving. By participating in collaborative projects, where all the students have got roles or a role, they are gaining practical experience in managing group dynamics, ultimately preparing them for the realities of many contemporary workplaces.

Developing confidence and empowerment

Confidence was cited as one of the most crucial attributes for career success, and students felt that the programme played a key role in fostering this quality. Beyond simply acquiring technical knowledge and skills, they expressed a sense of empowerment, the ability to apply what they had learned effectively and take proactive steps toward their career goals. This sense of self-assurance was particularly valuable in navigating job opportunities, networking, and taking on professional development prospects. By refining their existing strengths and gaining new competencies, students felt more prepared to take on challenges and confidently transition into their chosen fields. One student shared their perspective on how the programme helped them develop their abilities and build the confidence to move forward:

> *Yeah, I think mine is just empowerment. I feel empowered, I feel confident enough to go and put myself out there and do it. So I think a lot of the skills that I have developed, I do think I had somewhat before I joined, but being able to funnel them into what I want to do in this is quite helpful. I think just being pushed in the right direction, feeling empowered and just confident enough to put myself out there to get stuff. I think that's the thing that I'm thankful the most with it* (Student, U2).

However, some students expressed a strong desire for more opportunities to engage with employers and build professional networks, particularly earlier in their course. They recognised the value of industry connections in shaping their career paths, gaining insights into employer expectations, and exploring potential job opportunities. While some networking events and industry talks were available, many felt that earlier exposure to professionals, e.g. through guest lectures, mentorship programmes, workplace visits, or career fairs, would have further enhanced their confidence and career readiness. By integrating employer interactions throughout the course, students believed they would be better equipped to make informed career decisions and transition more smoothly into the workforce.

It's worth highlighting, that while many students valued industry connections and career-focused opportunities, others noted that they pursue their degree purely out of a passion for the subject and a desire to deepen their knowledge. For these students, the passion for their field, critical thinking, and intellectual exploration were the primary motivators rather than direct career outcomes. They appreciated the academic depth of their studies and were less concerned with employability-focused elements, preferring an education that allowed them to engage with ideas, research, and theories in their chosen field. This highlights the diverse motivations among students, emphasising the importance of a balanced approach that accommodates both career-oriented learners and those driven by academic curiosity

> *where it is sort of preparing you for the workplace [...] I didn't really come to university for that, if that makes sense. I come to be, like, academically enriched, but I feel like it is all very like everything you do is quite targeted at getting you ready for the workplace, if that makes sense. Especially in some of the things we've done* (Student, U1).

This perspective highlights the varying expectations students have regarding the purpose of their university education. While many appreciate the career-focused aspects of their degree, others feel that the strong emphasis on employability can be balanced with the intrinsic value of academic enrichment. This suggests a need for a balanced approach, one that supports students aiming for industry readiness while also providing space for intellectual exploration and subject-specific curiosity. Ensuring flexibility within the curriculum allows students to tailor their experience based on their individual aspirations, whether career-driven or academically focused.

Challenges of innovation

Innovation and diversification in higher education have been described as challenging processes that require adaptation to continuous changes and developments in the sector. Many of these changes have been accelerated by the impact of COVID-19, including evolving perceptions of how individuals work and learn. This shift encompasses changes in the understanding of learning spaces, the skills demanded by the contemporary economy, and employer expectations. As noted by a senior leader (U1):

> *The higher education landscape has changed so much. There's just so many changes happening, you can't keep up. I think the main ones for me are the impacts on COVID, a post-COVID environment, what can we learn from that? We've had a lot of challenges around industrial action, recently, particularly in England. So there's the economy, the UK economy, is obviously impacted dramatically. And I think in terms of things that are really impacting on the sector, is that dealing with that post pandemic, change in how people want to learn, I think is a big one* (SL, U1).

Changes affecting the higher education landscape have stimulated various initiatives at multiple levels, programme, departmental, and faculty. Universities have been implementing these efforts to make their

offerings more practically oriented and to enhance employability. For example, as described in previous sections, these initiatives included facilitating employer engagement and strengthening links with industry, for example, through guest lectures from industry professionals and employer-led projects that give students direct exposure to workplace challenges. The redesign of curricula to incorporate practical, industry-aligned learning activities has enabled the extension of traditional theoretical models by complementing them with hands-on experiences, case studies, live projects, and simulations (real-world scenarios). This allows students to engage with actual industry challenges, fostering critical thinking and problem-solving skills.

Fostering and sustaining meaningful engagement with industry presents both opportunities and challenges. While individual projects often showcase examples of good practice, scaling these efforts to enable more extensive and sustainable collaboration across diverse industries is essential for ensuring long-term employer involvement. Developing sustainable strategic partnerships, particularly with SMEs, is a pressing challenge. SMEs play a critical role in the ecosystem, and creating mutually beneficial, long-term collaborations requires thoughtful and strategic engagement. Both universities recognise this as an important area for strategic development, noting there is a lot of work to be done:

> *Sustainability is always a challenge. I think one of the things that we are trying to do more of as an institution and every institution has got work to do here, is how we connect across our different areas in the university, [...] so projects can come in one school, and to somebody else in a different school, working with the same company, how do we know that? Because you know, one might be a student project and one might be a research project with completely different branches of the same company. We are getting better at having the central research area (CRM system). So we've got students CRM, but we've also got a CRM for companies. It's how we engage our staff to make sure that they're sharing that information, pooling that information. And again, there's a lot of work to do there* (SL, U1).

There is also an argument that employers prefer more sustainable, long-term relationships with a particular university. As described by a middle leader at U2, 'Industry partners want a one-stop shop' and they 'don't want to be horse trading between doing something for one university and something for another' (ML, U2).

Work experience, internship and placement opportunities also require attention. Making such experiences are meaningful for students is paramount, yet decisions on whether to mandate these opportunities need careful consideration. The feasibility and benefits of such requirements can vary significantly across disciplines, necessitating a nuanced approach.

The complexity of fostering successful university-industry collaborations is reflected in the challenges faced during initiatives such as internships and placements. One interviewee highlighted the importance of clear expectations and adequate support to ensure positive outcomes, while also acknowledging the potential for issues to arise:

> *You occasionally get bad feedback as well, if something hasn't worked out for whatever reason. I run an internship [...] we've had a couple of instances in that over the last four years that it's broken down, but it's normally been the employers' fault, as I would see it, rather than the students. Lack of direction, lack of supervision, lack of clarity about what the role was. When the conversation is initially starting about expectations, then it's making sure that those expectations are realistic not only for the employer, but also for the student, because the students will not be the finished article. And there's an element of accepting that the employer needs to make and that they still need training, particularly if it's something like an internship. Often it is the first time that they've probably undertaken any work paid for (ML, U1).*

This perspective emphasises the importance of careful planning and open communication between universities, employers, and students. Establishing clear expectations and providing appropriate support not only enhances the quality of the placements and work experience but also helps bridge the gap between academic learning and workplace demands. Recognising that students are still in the process of developing their skills is crucial for fostering meaningful and productive industry engagement. This is particularly important, as for many students, this may be their first exposure to any form of work-related experience, including essential workplace practices, such as time management, taking instruction, and adapting to supervision. The process of crossing boundaries between academic studies and work can present numerous challenges for everyone involved, including both students and employers. One of the lecturers emphasises that work experience is particularly important for young people who missed out on various opportunities during the pandemic. For example, many did not have the same access to part-time work as previous generations and the pandemic has limited these opportunities even further.

> *We can find students who've gone through all of their education, A levels, and then to university who have never actually worked. Never taken instruction, never been supervised, never had to do a particular type of job and never had to get to work on time. So, things that we might take as just normal, it's not normal, because they've never experienced it before. So, there's a whole process of learning for them really, in terms of that adjustment between education and an employment and that transition. And that work placement piece is so important in embedding some of those principles that employers will find, not just necessary, they're fundamental (ML, U1).*

This observation highlights the critical role of work placements in addressing gaps in students' early work-related experiences. The challenges brought about by the pandemic have only amplified the need for structured experiences that help students transition from education to employment. Embedding practically based skills through meaningful work placements is essential, not only for students' personal growth but also for meeting employers' expectations of workplace readiness.

Therefore, there is a pressing need to establish and sustain continuous dialogue and collaboration with employers and industries. These partnerships are crucial for designing work placements that not only meet students' developmental needs but also align with employer expectations. However, maintaining these collaborations comes with significant challenges.

Employers, particularly those in demanding sectors, such as healthcare may cite a lack of time to engage meaningfully with academic partners. Similarly, academics face constraints, struggling to balance their teaching, research, and administrative duties, leaving little capacity to reflect on courses or implement meaningful changes. This tension highlights the importance of creating structured opportunities for dialogue, ensuring that both parties can work together to refine and adapt work placements in ways that benefit all stakeholders. This collaborative approach is essential for bridging gaps and addressing the shared challenges of preparing students for the complexities of the contemporary workplace.

Conclusions

The landscape of higher education (HE) in England is rapidly evolving in response to nationwide economic priorities, local skills needs, and government agendas, such as the establishment of Skills England. Higher education institutions (HEIs) are shaping their strategies to ensure that students remain competitive in the labour market, are prepared for the changing world of work and life in general, and actively engage with and support their local communities and industries. In recent years, new HE provisions, such as Degree Apprenticeships (Laczik et al., 2025) have been introduced. Existing HE provisions are being revisited and infused with innovative ideas that strengthen links with industry partners at both national and local levels. These developments may lead to a transformation of HEIs, which this report aims to explore. The participating HEIs in this study provide insights into how industry-engaged, practically based HE models drive transformation and respond to student and industry demands.

Employability and work-readiness of university graduates have become key priorities for HEIs. These aspects have gained prominence as the labour market has grown increasingly competitive for graduates. Previously, employability was often considered the domain of career services; however, it is now widely acknowledged that employability should be embedded across all teaching, learning, and extracurricular activities, regardless of discipline. This shift aligns with students' expectations, as they seek to develop disciplinary expertise alongside industry knowledge, professional conduct, transferable skills, and professional networks that enhance their prospects of securing a desirable job after graduation. As a result, fostering employability and work-readiness has become an integral part of institutional strategy, with collaboration among key stakeholders, agile curriculum development, and the integration of theory and practice playing vital roles.

HEIs are implementing new strategies to enhance students' employability, a process that requires multifaceted approaches. This includes creating new job roles to support employer engagement within universities or expanding the responsibilities of academic staff. Both approaches strengthen university-industry connections. The further evolving role of academic staff extends beyond traditional academic responsibilities to include even more focus on fostering industry links, ensuring curriculum relevance to industry needs, and providing students with frequent opportunities to bridge theoretical knowledge with practical experience. Academic staff with industry experience are recognised as valuable assets in making university education more applicable to the real world. However, challenges remain, such as keeping pace with industry and technological changes, adapting teaching and learning approaches, and managing increased workloads.

Three interlinked strategies were observed at the case study universities as they transitioned toward more work-related degree provisions: curriculum redesign, industry engagement, and bridging the classroom with the workplace by creating innovative learning spaces. Activating theoretical knowledge, integrating the latest industry developments into the curriculum, and aligning coursework with real-world opportunities require innovative thinking and may lead to multi-modal approaches in teaching and learning. Purposeful engagement with industry partners at all levels, the development of trusted relationships between universities and employers, fostering innovative teaching methods, and placing students at the centre of learning contribute to an ecosystem designed to enhance student work-readiness.

While employability is increasingly recognised as a university-wide priority rather than solely a career services agenda, the two universities examined in this study have strengthened career support services for students. A diversification of career support initiatives has been observed, including the integration of supplementary qualifications and extracurricular opportunities to enhance students' employability. Inclusivity is at the heart of both universities provision, with clear strategies for encouraging students to take advantage of all opportunities. However, both universities experienced challenges in terms of students' access and engagement.

The students that contributed to the research value the opportunities provided by their university's enhanced approach to employability, particularly the integration of academic knowledge with practical skills through industry partnerships. Many also recognise the importance of aligning their skills with employer expectations to remain competitive in the graduate labour market. However, it was found that students' motivations for attending university vary. While some appreciate career-focused learning and industry immersion, others may prioritise academic study over direct professional preparation.

Driving institutional change to produce employable graduates and improve their labour market outcomes requires close and sustained collaboration among stakeholders both within and outside universities. It is acknowledged that technology has a major role to play in preparedness and moving from traditional learning and teaching approaches to those that favour multimodal adoption, working in partnership with external stakeholders to drive a more engaging, enriching and employable graduate, as demonstrated from the case studies presented. We must recognise that students play a central role in this collaboration, as their experiences and achievements serve as real-time feedback on how effectively universities are adapting to the evolving landscape of work-related higher education provision.

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