

Report: Technology for Employability

Study into the role of technology in developing
student employability

November 2015

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Study into the role of technology in
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Foreword

This study was commissioned by Jisc in the light of student employability becoming increasingly important in policy across the higher education, further education and skills sectors.

Employers are demanding that students are better prepared for work, though views on what this means in practice vary. The study found that there is wide variation in how institutions are developing student employability. Some are focusing on helping students to prepare for and obtain jobs as an end-of-programme activity (typically via careers departments). Others are treating employability as integral to curriculum design, delivery and formative/ summative assessment beginning at the start of a programme, all with a view to students taking ownership of their 'lifelong employability'. The reported case studies highlight this variation. Some reflect top-down institutional approaches driven by senior management and others where bottom-up approaches are instigated by innovators, though not necessarily taken-up more widely by the institution.

There is similar wide variation in institutional adoption of technologies for employability, with the case studies highlighting applications that provide powerful benefits for students, institutions and employers. For example, some are helping students to partner with employers across the globe in identifying and solving real-world problems. This is highly motivating for students, but also offers institutions efficient and cost-effective ways of providing authentic learning experiences (e.g. compared with finding placements) and benefits for employers.

Given the potential benefits of technology, it is surprising that its use is not more widespread. It is also surprising that true partnership working between institutions and employers on employability is not higher - it is hoped that this report will inspire them to address these issues.

One further surprising item is that employers seem to have low aspirations in respect of graduate digital literacies, often looking to their IT staff to be their digital entrepreneurs. Our sectors are perhaps missing a trick here and should consider working more closely with employers to develop and promote **all** graduates with the wherewithal and confidence to be digital entrepreneurs e.g. applying student creativity with technology to solve real employer issues.

As well as providing many case studies, this report identifies five ways in which institutions are using technology for employability, highlighting the benefits. It draws out good practices for programme teams and shows how institutions can implement more orchestrated approaches to developing student employability. Finally, it provides recommendations for how sector bodies can support institutions, for example by facilitating benchmarking to help spread the good practices identified in this report.

Dr Peter Chatterton and Geoff Rebbeck QTLS

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Technology for Employability - The full report



1. Guide to reading the report

This is a long report – this reflects both the nature of the topic and the degree of engagement with the sector in eliciting case studies, ideas, challenges and good practices.

It also reflects that it is not possible to explore how technology can support student employability without addressing a number of wider issues. These include curriculum design, delivery and assessment as well as the measures that institutions need to take to embed student employability in an orchestrated and holistic approach.

This page therefore gives some suggestions for how to use the report:

- » **Do you want a very quick overview of what the report covers?**
The report's **Table of contents** and the **report 2-page Summary** provide a very brief overview of the scope and a brief summary of the study and report
- » **Do you want a 'quick read report' with the headline messages?**
A 9-page quick-read summary of the headlines messages of the report is given in **Appendix 1**.
- » **Are you interested in case studies?**
We carried out 20 case studies (10 in HE and 10 in FE/skills). Summaries of these case studies are given in **section 4.1** for HE and **section 4.2** for FE/skills. The full case studies are given in **Appendix 3** (HE) and **Appendix 4** (FE/skills). In addition, a range of case study vignettes (short paragraphs) are detailed for HE in **Appendix 7** and for FE/skills in **Appendix 8**.
- » **Are you interested in how specific technologies are being used?**
Section 6 details how institutions are using technology for employability, categorised into five themes. This section also highlights the benefits of using such technologies for students, institutions and employers
- » **Are you interested in models of curriculum design/delivery to incorporate employability and how technology supports these?**
Section 7 details how programme teams can enhance curricula design, delivery and assessment to incorporate employability and using technology. **Section 8** takes this further by recommending draft indicators of good practices for programme teams
- » **Are you interested in wider institutional perspectives such as policies and processes to embed employability institution-wide?**
Section 9 describes how institutions can better prepare for supporting good practices such as in developing policies, plans, processes, technology infrastructure and staff development
- » **Are you interested in what sector agencies can do to support technology for employability?**
Section 10 details recommendations for how sector bodies can support institutions

2. Summary

The study was commissioned by Jisc for the following reasons:

- » Student employability is becoming increasingly important in policy and strategy across the HE, FE and skills sectors. Qualifications are increasingly seen, particularly in FE and skills, as a stepping stone to employment
- » There is evidence of an 'employability gap' in the skills that students are actually starting with on day one of employment and the skills that employers are expecting from them. Views vary on what this gap means in practice
- » There is an increasing appreciation that 'technology for employability' can provide many potential benefits to students, institutions and employers
- » Digitally savvy graduates are essential for shaping tomorrow's entrepreneurial activities, but digital literacies aren't well articulated in relation to employability skills

The study provides an initial exploration of the role of technology in supporting the development of student employability. Twenty case studies were carried out across the HE, FE and skills sectors and these are detailed in [Appendix 3](#) and [Appendix 4](#).



"Businesses look first and foremost for graduates with the right attitudes and aptitudes to enable them to be effective in the workplace – nearly nine in ten employers (89%) value these above factors such as degree subject (62%)"
CBI/Pearson Education and Skills Survey 2015
(CBI / Pearson, 2015)

The study identified four key challenges (further details are provided in [Section 5](#)):

- » Institutions are on various points of the continuum towards student employability 'maturity'
- » Technology is under-exploited for employability
- » There is currently insufficient engagement and partnership working with employers
- » The resources that institutions use to assist them in using technology for employability are variable in quality

The study found that institutions are using technologies in five key ways to support development of student employability providing significant benefits to students, employers and institutions:

- » Technology-enhanced authentic and simulated learning experiences
- » Digital communications and engagement with employers including development of digital identity
- » Technology-enhanced lifelong learning and employability
- » Technology-enhanced employability skills development
- » Employer-focused digital literacy development

Further details of technology use are provided in [Section 6](#). The benefits to key stakeholders of using technology for employability are identified in [Appendix 5](#).



"Managers, entrepreneurs, and business executives must have e-competences to grow, export and be connected to the global digital markets. In a digital economy, e-leadership skills are essential."
Michel Catinat, Head of Unit 'Key Enabling Technologies and ICT' at DG Enterprise and Industry, European Commission (European Commission, 2015)

Three ways programme teams can enhance practices are recommended (further details are provided in [Section 7](#)):

- » Maturity is probably best developed through so-called connected curricula - embedding employability in curriculum and assessment combined with authentic experiential learning and employer engagement and underpinned by technology
- » Lifelong employability in a digital world needs to be a core student capability - with students encouraged to take ownership early on
- » Technology is used to underpin student employability development with clearly identified rationale, benefits to stakeholders and adoption of good practices

Draft indicators of good practice have been developed and detailed in [Section 8](#) in relation to programme design and delivery, to incorporate employability and related technology for employability.

Institutions can better prepare for supporting good practices in technology for employability in five key ways (further details are provided in [Section 9](#)):

- » Embedding and aligning technology for employability and its development into policies, plans and processes
- » Professional development of staff in relation to employability and technology for employability
- » Technology tools, resources, infrastructure and support for employability and student-centred flexible curricula
- » Improving communication and collaboration to drive change in technology for employability
- » Quality assuring and continuous improvement through employability data monitoring, analytics and review

Sector bodies can potentially support institutions in six key ways (further details in [Section 10](#)):

- » **Benchmarking**
Develop benchmarking toolkits that reflect effective practices and support institutions in collaborative benchmarking
- » **Sector resources**
Develop coherent resources targeted to different stakeholder needs that inform and enable stakeholders to develop student employability
- » **Sector communications and engagement**
Facilitate improved sector communications and engagement with respect to student employability
- » **Sector online collaborative spaces**
Develop online collaborative spaces to support engagement between sector stakeholders
- » **Institutional support services**
Provide a range of institutional support services that enable institutions to achieve measurable impact in enhancing student employability
- » **Joined-up related areas of work**
Identify synergies with other areas of relevant work (for example around digital literacies and learner analytics) and develop a joined-up approach for student employability and use of related technology

3. Introduction

3.1 Background

Sir Tim Wilson's review of university-business collaboration (2012) suggests a gap between UK business and HE, stating that "Universities should reflect on the opportunities that are provided for students to develop employability skills through the formal learning methodologies used within the university" (Wilson, 2012, p.10). Similar reports from Lord Young, the Confederation of British Industry (CBI) and the House of Lords for example, have alluded to the same problem of learners in FE. They have describe them as not being 'work-ready', adding to it a degree of personal readiness as well as a skills gap. A recent Jisc project exploring assessment and employability further evidenced the 'employability gap' suggested in the review (University of Exeter, 2013). Recent surveys have also highlighted employability as amongst the foremost reasons for students considering a university education (Pollard et al 2008). Over 70% of students stated that improving job opportunities was the most important reason to go to university (CBI/NUS, 2011). The FELTAG Report and BIS response (2014) cite the purposes of FE as giving its learners "line of sight to employment".

Institutions tackle employability in students in a number of ways, including through for example personal development planning (PDP) and employability modules, careers services, work-placements and experiences, work-based mentors, apprenticeships, volunteering, graduate internships, entrepreneurship and increasingly through looking at employability awards and the notion of 'graduate attributes' (more prevalent in Australia and the US), not yet developed in FE. We know there is already some excellent practice, particularly in vocational and professional disciplines (e.g. medicine, physiotherapy, education, social work and social care). Here, notions of what it is to be professional are embedded in the curriculum, but for other disciplines this is less apparent. Few use technology really effectively in an integrated way, embedded in the curriculum, to support student employability - although some are exploring this.

Previous Jisc activity has demonstrated that technology can be an enabler to the development of employability

skills in a number of ways. E-Portfolios can be used to ensure that opportunities are integrated throughout the curriculum in a scaffolded way for learners to reflect, plan, articulate and showcase their knowledge and skills. There is a good history of using mapping portfolios in FE for competence-based vocational qualifications. Technology can enable assessments to be made more authentic, more closely aligned to professional contexts. Learners can be given opportunities to engage with their feedback, and have regular opportunities for self, peer and tutor review in order to develop as self-aware, independent learners. There is evidence to show that empowering students as agents of change can be a key opportunity for students to develop a range of employability skills.

However, few colleges and universities are using technology to best effect to support an integrated approach to the development of employability skills notwithstanding the clear benefits technology offers.

3.2 Aim of the study

This study will provide an initial exploration of the role of technology in supporting the development of student employability skills. It aims to provide an overview of the key skills employers are looking for, and the opportunities offered by universities and colleges to provide those skills. It also aims to explore and articulate the role of technology in enhancing the development of student employability, and make recommendations on how Jisc can best support institutions moving forwards.

3.3 Key tasks

The study brief was to undertake the following tasks:

- » A brief literature review into the 'employability gap', i.e. what skills students are missing, from an employer's perspective when they enter the workplace. The literature review should focus on gaps in sector-wide employability skills rather than skills specific to any particular sector. The review should include research undertaken by Jisc projects (for example **Collaborate** and **FAST**) as well as research undertaken by other bodies
- » Outline the full range of employability and self-employability opportunities offered by universities and colleges, and identify the challenges institutions are facing in preparing students for the world of work. Explore in particular where employability skills are fully embedded into the curriculum
- » Discuss the ways in which technology is currently supporting those offerings, highlighting the challenges and benefits (with evidence where possible). Technologies explored should include those that support the management of these opportunities, and also those that provide pedagogical support. For example, students self-assessing their skills in particular areas, reflecting and action planning, and presenting evidence of their skills to a range of audiences. Also included are technologies that support the recording of and assessment of those skills. Technologies explored could also include those that support better partnerships, for example between institutions, students and employers for a range of purposes
- » Develop up to 10 case studies highlighting where technology is supporting the development of student employability skills across the landscape articulated above. Include evidence of impact where possible
- » Review existing Jisc resources and guidance on the role of technology in supporting student employability skill development, and make recommendations for areas for further development. Including the **e-Portfolio implementation toolkit**
- » Explore to what extent technology is currently meeting the challenges and opportunities identified through the activities above, where the gaps are, and make recommendations to Jisc for further development work

3.4 Methodology

The survey methodology was as follows:

Stage	Activities
Desk research	<ul style="list-style-type: none"> » Literature review and data collection, focusing on: <ul style="list-style-type: none"> › Skills needed and skills gaps across all sectors › Employability/self-employability opportunities (HE/FE) › Challenges in preparing students for the work-place › Embedding employability skills development in the curriculum › How technology supports employability opportunities including benefits/challenges » Explore other HE/FE agency resources as well as guidance/resources of Professional, Statutory and Regulatory Bodies (PSRBs)
Produce case studies	<ul style="list-style-type: none"> » Identify and agree case study template, format and guidance for undertaking case studies » Identify 25 potential case studies (and key contacts) with a spread across different institution types, discipline areas and learning activity/technology use » Undertake 20 case studies (10 HE and 10 FE/skills) based on a mixture of literature review and (virtual/face-to-face) interviews
Engage with the sector	<p>Engage with the sector via:</p> <ul style="list-style-type: none"> » Jisc mail-lists: e.g. employability-development@jiscmail.ac.uk » Project blog: http://employabilityproject.jiscinvolve.org » Webinar 29 April 2015 (recording and slides available here) » E-portfolio survey: See survey questions in Appendix 2 » Meeting of selected sector experts: 27 May 2015 in London » E-mail/Phone/Skype: e.g. for case study interviews
Review current Jisc resources and guidance	<ul style="list-style-type: none"> » Review Jisc resources and guidance on employability and use of technologies (including the e-portfolio implementation toolkit) and alignment with other sector resources » Seek Jisc web stats of user engagement with the resources and guidance » Conduct SWOT analysis of resources and guidance
Analysis and production of report	<ul style="list-style-type: none"> » Analyse the extent to which technology is currently meeting the identified challenges and opportunities as well as the gaps » Prepare options for Jisc to consider for further development work with recommendations

3.5 Deliverables

The key deliverable of the study is this report which includes 10 HE and 10 FE case studies, listed in [Appendix 3](#) and [Appendix 4](#). In addition, the study produced the following:

- » A recorded sector webinar, exploring emergent themes and ideas for Jisc to consider (jisc.ac.uk/events/technology-for-employability-emerging-themes-and-ideas-29-apr-2015#resources).
- » A project blog <http://employabilityproject.jiscinvolve.org/wp/>
- » Completed e-portfolio online survey with responses (see survey questions in [Appendix 2](#)).

3.6 Out of scope

Out of scope for this study is:

- » An exploration of the role of technology in supporting the uptake of employment opportunities
- » Technology related to the HEAR (Higher Education Achievement Report)

3.7 Acknowledgements

We are extremely grateful to all those who have contributed towards this study. [Appendix 10](#) lists those who have made valuable contributions.

4. 20 case studies were carried out across the HE, FE and skills sectors

A list and summary of the case studies are given below with the full case studies detailed in [Appendix 3 \(HE case studies\)](#) and [Appendix 4 \(FE and skills case studies\)](#).

4.1 HE case studies

Institution	University of Greenwich
Title	Two illustrations of the University's Greenwich Connect team supporting Faculties in technology-enhanced implementation of the institutional employability goals.
Technologies	A custom-designed virtual law clinic application and e-portfolio technology.
Summary	<p>Development of student employability is a key strategic goal of the university due largely to the nature and characteristics of its student population. The Greenwich Connect team work in partnership with Faculties to plan, implement and evaluate learning innovation aligned to strategic goals, leading to specific projects that the Greenwich Connect team support. This case study describes the work of the Greenwich Connect team through the lens of two such Faculty projects:</p> <ul style="list-style-type: none"> » A Virtual Law Clinic that builds capacity for law students to engage with professional lawyers and the community on real-world problems » The Professional Development Portfolio in engineering and science that seeks to develop student professional practices, skills and confidence
Institution	University of Northampton
Title	Development of student employability skills through a self-directed, blended approach and engagement with social innovation and enterprise.
Technologies	A range of technologies have been utilised. The core is making use of a range of Blackboard features as well as online skills assessment and communications technologies such as Skype. The use of online badges is planned.
Summary	The University developed a policy for student employability which encourages self-directed evaluation, planning and development of employability skills via engagement with social innovation and enterprise. Ten employability skills and associated learning outcomes have been identified and a non-linear course developed to support students in assessing these skills and engaging with appropriate activities to address their specific skills needs. The course includes a blend of "e" and face-to-face activities (including peer review) and uses technology to maximise efficient use of student and advisor time. The course has already been integrated into the BA in Social and Community Development and plans other similar curricula integration. The course has seen a large increase in student engagement activities with the employability agenda and an independent evaluation is currently in progress.

Institution	University of Edinburgh
Title	A joined-up approach to integrating employability into the College of Art's restructured curricula and simultaneously transforming assessment and feedback, with e-portfolios playing a central, integrating role.
Technologies	e-portfolio and multimedia technologies
Summary	<p>This case study follows the development of various initiatives at the College of Art pre-merger and the subsequent cross-University developments post-merger.</p> <p>The College of Art was an early adopter in addressing the employability agenda for its students and had evolved and embedded an integrative approach to curriculum design for all programmes. Developing career ready skills and graduate attributes is integrated into assessed learning outcomes, learning activities and formative "assessment for learning" approaches. Networked online tools and resources are an essential component in providing the necessary supportive learning environment.</p> <p>These various initiatives have better prepared students for employment and helped them to more fully understand and articulate their employability skills. ECA has also seen a significant increase in student satisfaction with assessment and feedback and, post-merger, its National Student Survey (NSS) rating for assessment and feedback was amongst the highest NSS scores both in the University and across the UK sector for art and design related subjects. In the 2016 Guardian University guide the Edinburgh College of Art portfolio of subjects in Art and Design are all ranked in the top five, with two of them ranked first overall.</p>
Institution	Keele University
Title	An institutional approach to developing self-driven, well-rounded graduates through embedding employability via co-curricular activities, a graduate attributes framework and a programme-wide development strand, underpinned by e-portfolios.
Technologies	e-portfolios
Summary	<p>The case study describes the university's strategic approach to embedding employability by supporting students to take responsibility for developing themselves into well-rounded graduates. To support this, a wider curriculum is offered via a flexible degree structure that includes co-curricular activities, with options such as part-time work, entrepreneurial schemes or volunteering, many of which are formally recognised on the student's Higher Education Achievement Record (HEAR).</p> <p>Students develop a reflective e-portfolio to assist their development and showcase evidence of their skills and capabilities to future employers, based around a set of graduate attributes. They can also gain accreditation from the Institute of Leadership and Management (ILM).</p>

Institution	University of Southampton
Title	A Faculty-based employability initiative, branded Mission Employable, with students driving strategy and change in pursuit of enhancing student employability, underpinned by social media and multimedia.
Technologies	A wide range of social media and multimedia.
Summary	<p>Dr Eleanor Quince, Faculty Director of Employability in Humanities at the University of Southampton, identified that students were not engaged sufficiently early with the employability agenda. To overcome this, Dr Quince decided to empower the student body to drive change through a range of interconnected employability activities. This would have an emphasis on using social media and multimedia to connect students with peers, alumni, staff and employers, all facilitated by four student interns. The activities included:</p> <ul style="list-style-type: none"> » Setting up an alumni network » An interactive multimedia compulsory undergraduate first year employability module » A peer mentoring scheme » A formative research and evaluation exercise to drive continuous enhancement in the initiative
Institution	Birmingham City University
Title	A range of online simulations, virtual case studies and serious games to support health students in developing and practising clinical and employability skills in a highly efficient manner and without causing harm or distress to patients.
Technologies	In-house developed software used to create online simulations, virtual case studies and serious games incorporating interactive panoramas and main scene images, chroma keyed video, animation and sound.
Summary	In response to the drivers and needs of health sector employers, Birmingham City developed a range of online simulations, virtual case studies and serious games to augment traditional teaching methods. They provide flexible, context rich, authentic and learner centred skills development opportunities that incorporate a range of employability skills such as time management, observation, analytic, problem-solving, decision-making/prioritisation skills in pressurised scenarios. The university did this using in-house software called Virtual Case Creator. The programmes allow students to develop and practise their skills without causing harm or distress to patients, thereby offering a highly effective and efficient means of training large student cohorts.

Institution	Glasgow Caledonian University
Title	Using wikis to cost-effectively embed work-related learning and employability development into entrepreneurship teaching, learning and assessment at the Glasgow School for Business and Society.
Technologies	Wikis.
Summary	The case study describes how large cohorts of business students collaborate with an employer like an overseas entrepreneur to research and problem-solve a real business issue. Using a wiki to record and share experiences and perspectives, the students are supported by staff and adopt a pre-designed set of formal learning and assessment activities. These help develop key employability skills such as team-working and true collaboration, written communication, planning, organisational skills and international working. It highlights how technology can offer cost-effective solutions for embedding work-related learning, employer engagement and entrepreneurship into teaching and learning.
Institution	University of London
Title	An “Enhance your Careers and Employability Skills” MOOC (Massive Open Online Course) delivered via the Coursera platform.
Technologies	Coursera MOOC platform.
Summary	In 2014, the Careers Group at the University of London developed the world’s first careers and employability skills MOOC on behalf of the University of London International Programmes . It was delivered via the Coursera platform and attracted 89,000 students from 208 countries.

Institution	Bath Spa University
Title	An international virtual internship scheme supporting cross-institutional collaboration in developing blended and distance learning modules as well as the professional development of students, supported by a broad range of technologies.
Technologies	A broad range of communication and collaboration tools (synchronous and asynchronous), multimedia tools and e-journals (Blackboard).
Summary	The Learning Technology Group pairs postgraduate students in learning design at international universities with course teams at Bath Spa University to enhance curricula with blended and online approaches. At the same time, the group mentors the students in developing and evidencing their professional knowledge and skills using the Association for Educational Communications and Technology (AECT) professional knowledge and skills framework. A formal structure and processes were put in place for the virtual internship which involves a high degree of virtual collaboration and the use of a broad range of technologies to efficiently and cost-effectively support communications, collaboration, development of online resources and student personal learning and professional development management. The scheme provides benefits to all those involved and continues to attract international students as well as academic teams to participate in it.
Institution	Staffordshire University
Title	A top-down approach driven by senior management to embed graduate attributes, student employability and work experience/work integrated learning into all curricula, using e-portfolios to support student reflective practices, based around the graduate attributes framework.
Technologies	e-portfolio and an employability e-learning package on licence from Abintegro .
Summary	Staffordshire University set out to embed more consistent approaches and processes to developing student graduate attributes, employability skills and commercial experience across its programmes. It identified the need to embed the attributes in assessed learning outcomes and develop the Staffordshire Graduate Employability Project (SGEP). This is a year-long customised core module that develops student reflective practices and employability skills within the context of undertaking work experience/work integrated learning within the curriculum. Assessment is through the student's reflective e-portfolio (PebblePad) that includes reflections on personal and skills development (badged and tagged against the graduate attributes), incorporating international/global aspects. An evaluation exercise is ongoing (including a longitudinal study to follow employability progress beyond graduation) but early evidence suggests that an increased number of students are engaging in work-ready/ work experiences and over 1,300 students and 100+ faculty staff have directly engaged with the Staffordshire Graduate Programme and developed closer links with employers. Evidence also suggests that the use of e-portfolios to support student reflective practice has been generally successful, though not all students and staff engaged with it to the full planned potential. A Staffordshire Graduate Forum was established as a key group to drive forward and sustain the graduate attributes and student employability developments.

4.2 FE and skills case studies

Institution City of Glasgow College

Title Enhancing employability with e-portfolios

Technologies E-portfolios

Summary City of Glasgow College has developed its own e-portfolio format to help stonemasonry apprentices present their skills for external verifiers and employers.

Prior to the e-portfolio initiative, apprentices could not capture or store evidence of their accomplishments in an electronic record of achievement despite the hands-on nature of their work. As a result, there was little opportunity for apprentices to appreciate the continuous nature of their learning or to show their achievements to others. Now apprentices can track their personal learning over time and move forward in a continuous and seamless drive for improvement. In addition, the new system has brought about significant improvements in the department's assessment processes and given a boost to student employability.

The number of students involved in the initiative is growing. Up to September 2015, 50 stonemason apprentices used the new portfolio system. Another 84 will take part by the end of 2015, with 50 more to follow in spring 2016.

Institution South West College, Northern Ireland

Title Forging links between education and industry

Technologies Various

Summary The InnoTech Centre was set up by South West College in Northern Ireland to nurture the growth of technology and innovation in local companies. The centre has since become a nexus between industry and education, using the skills of its staff to match companies with students with specialist expertise in science, engineering or technology.

Institution	Loughborough College
Title	Using technology to connect employers and students
Technologies	Conferencing technologies
Summary	Understanding what employers are looking for is a vital component of employability. Through the Bridge to Work initiative, Loughborough College has set out to help young people aged 14-18 gain an insight into employers' expectations before they apply for jobs or apprenticeships. In part, this is achieved through collaborative conferencing and social software. These enable students to take part in real-time presentations and discussions with local and national employers as well as communicating at any time with their tutors and with one another. The scheme has the added benefit of bringing together employers and potential employees.

Institution	Portland College
Title	Wi-fi and wellies: mobile learning aids student progression in a specialist college Wi-fi and wellies: mobile learning aids student progression in a specialist college
Technologies	Mobile and video technologies
Summary	Portland College has found real value in using mobile and video technologies to boost the confidence and employability of students with disability. In order to reflect the changes in students' needs and aspirations, the college has established a new learning centre with a focus on mobile learning. This is enabling more students to use mobile devices in the curriculum. As a result, students are gaining confidence in using tablets in their learning, and are increasingly able to exploit digital media to demonstrate their skills and achievements to employers.

Institution	Reading College
Title	Aligning technology with the world of work
Technologies	Cloud-based technologies
Summary	Over the last three years, Reading College has moved away from hosting content on a virtual learning environment (VLE) towards browser-based technologies like Google Apps to extend and enliven students' learning. This decision reflects the improved capability of cloud-based technologies and the wider opportunities now on offer to personalise learning technologies. Switching to Google Apps also meant that the college operated in ways that better reflect the modern world and prepared students more effectively for the workplace.

Institution	S&B Autos Automotive Academy Bristol
Title	Blended learning at distance
Technologies	Various e.g. video streaming, e-portfolios, online learning materials
Summary	<p>S&B Automotive Academy, a Bristol-based provider of specialist courses for the automotive industry, has adopted a range of technologies to make its training programmes more effective and efficient.</p> <p>To keep in touch with apprentices in dispersed workshop locations, the academy uses video streaming to conduct meetings, tutorials and assessments. For their part, the apprentices use video to capture evidence for their e-portfolios, and video streaming to provide taster experiences for the next generation of apprentices.</p> <p>Apprentices also have access to online learning materials on Moodle so that no one misses out on the theoretical elements of their course while on placement in the industry. In a significant new development, the academy has also developed cost-effective ways of training apprentices in paint spraying techniques via simulation technologies.</p>
Institution	South Devon College
Title	Using Moodle to foster employability
Technologies	Moodle-based technologies
Summary	<p>South Devon College has made work experience and preparation for the world of work possible for all students, with a new programme of study in addition to their chosen course. The college is using its virtual learning environment (VLE), Moodle, to support the initiative. By joining a dedicated whole-college area on the VLE, students can check their progress towards work readiness against a set of standards agreed with local employers. The online Moodle community also provides ideas and information that the college and employers wish to share with students to help them prepare for the workplace, including guidance on finding part-time work. Also under development is an addition to the college's electronic individual learning plan (eILP). This will enable students to reflect on their work experience, record employers' feedback and provide evidence of their learning for their tutors and parents as well as for themselves.</p>

Institution	The Mindset
Title	Developing a mindset for employability
Technologies	Specialist toolkit
Summary	The MindSet is a non-trading body of like-minded further education (FE) colleges formed in 2013 in partnership with the REED Northern Council for Further Education (NCFE) Partnership. The group shares the belief that students can acquire the right mindset and behaviours for employability through their college courses before they enter the workforce. To help colleges check how far this is happening and rectify deficiencies, the group has developed an employability toolkit with supporting case studies. This offers colleges the means to assess the effectiveness of their employability processes and to learn from others.

Institution	The Welsh Baccalaureate
Title	Embedding digital literacy skills in the Welsh Baccalaureate
Summary	<p>The Baccalaureate aims to provide students with a more rounded educational experience, preparing them more effectively for higher education and employment by learning through challenges and completing an individual project.</p> <p>In response to the findings of its 2011-2012 review of 14-19 qualifications, the Welsh government revised the Welsh Baccalaureate to include the Welsh Essential Skills from September 2015. Essential Skills are known as Functional Skills in England and Core Skills in Scotland.</p> <p>As a result, students working towards the new 'Welsh Bac' can now develop an understanding of and proficiency in skills essential to employability as a core part of the curriculum. One of the skills students must demonstrate is digital literacy, which has now replaced ICT as the third Essential Skill in Wales.</p> <p>By introducing this shift towards skills in the Baccalaureate curriculum, the Welsh Government aims to give students richer opportunities to acquire the capabilities and attributes they need to succeed as citizens and members of the workforce. Thus the revised Welsh Bac has a focus on:</p> <ul style="list-style-type: none"> » Literacy » Numeracy » Digital literacy » Critical thinking and problem solving » Planning and organisation » Creativity and innovation » Personal effectiveness

Institution	St Helens College
Title	Self-advocacy at St Helens
Technologies	LinkedIn
Summary	<p>Before they enter the world of work, many students need to understand how to present a balanced, rounded picture of themselves and their capabilities. To this end, St Helens College on Merseyside provided foundation degree students with LinkedIn accounts so they could showcase their achievements and form relationships with potential employers before they left college.</p> <p>Authenticity is important in a project of this kind. The college opted for LinkedIn rather than its own internal applications to get students networking with employers and other professionals on the most commonly used platform for business and professional people. The aim was to enable students to establish a profile and develop their self-presentation skills while still on the course, so they would leave well prepared for the next stage of their careers.</p>

A range of case study vignettes (short paragraphs) are detailed in:

- » **Appendix 7** (HE case study vignettes)
- » **Appendix 8** (FE case study vignettes)

5. The study identified four key challenges

Headline messages

Challenge	Details
1 Institutions are on various points of the continuum towards student employability maturity	<ul style="list-style-type: none"> » Different visions of maturity and variation in approaches to developing employability skills, capabilities and attributes exist » Students can learn employability skills from a broad range of experiences but there must be processes in place for them to reflect on, articulate and evidence the learning » Authentic experiences can develop skills, but depend on the degree of 'authenticity' and the degree to which students learn/reflect on them and articulate them » Many creative uses of technology, but 'embedding" remains elusive to many institutions (including at local levels e.g. faculty, school, department) » Embedding employability/ attributes into curricula and assessment may be 'ideal', but there are challenges » In many institutions, there appears to be a lack of joined-up approaches between academic departments and corporate careers/employability services » FE very focused on 'line of sight' to employment, rather than employability or self-employability » There are more similarities than differences between HE, FE and skills sectors
2 Technology is under exploited for employability	<ul style="list-style-type: none"> » Variation in practices and understanding of potential of technologies for employability - by institutions, students and employers - particularly with e-portfolios and social media » Institutions could do a lot more to unleash student creativity in using digital networks/media to engage with employers, alumni and other stakeholders » Digital literacies are not well articulated in relation to employability skills » Employers and HE/FE generally have low aspirations in relation to 'digital entrepreneurialism' » Growing band of knowledge in terms of what technology infrastructure is required for progressive employability development and 'connected curricula' » Not much evidence of use of data collection/analytics to support student employability, QA and QE » Possibility of aligning e-portfolio usage with development of HEAR » FE has a well-established use of e-portfolios to map vocational competencies (hard skills) and in supporting apprenticeships

Challenge	Details
3 Insufficient engagement and partnership working with employers	<ul style="list-style-type: none"> » Core employability skills, capabilities and attributes are typically being addressed, with variations, but they are continually evolving » The degree to which employers (large and small) are involved in defining and developing employability skills remains unclear » Not much evidence of institutions evaluating impact of employability policies/ initiatives with employers despite destination surveys » Not always easy to identify truly authentic learning experiences with employers for ALL students, though there is much potential for student cohorts to work in partnership with employers on real and challenging employer/sector problems » HE in particular needs to develop greater partnership working with employers and alumni e.g. curriculum design, mentoring, assessments » HE and FE need to find ways of improved working with a broader range of employers e.g. SMEs » There is potential for 'students as partners and innovators' initiatives to be focused on student employability and raising the profile of digital entrepreneurialism with employers » There is potential for HE and FE to better collaborate in joined up approaches to technology for employability
4 Variability in resources to support institutions in using technology for employability	<ul style="list-style-type: none"> » Despite excellent resources existing in relation to using e-portfolios, there is a lack of awareness of them and their value to institutions; they could be further developed with guidance to support students in effective use » There is insufficient emphasis in sector resources on making the case for using technology in employability and the importance of student digital literacy as an employability capability in its own right » Guidance on digital literacies could be better contextualised and articulated in relation to employability skills » There are minimal resources relating to digital entrepreneurialism (digital enterprise) » There is insufficient guidance on effective use of social media to support employability » There is potential for greater adoption of multimedia communications approaches as part of guidance materials e.g. using screencasts, videos » Resources on their own are insufficient - institutions need to be supported in using them effectively for example through consultancy, mentoring, coaching, collaborative benchmarking

5.1 Institutions are on various points of the continuum towards student employability maturity

Different visions of maturity and variation in approaches to developing employability skills, capabilities and attributes exist

The research undertaken as part of the study has identified a complex landscape of how student employability is developed across the HE, FE and skills sectors. There is variation in approaches by institutions who have different views on what maturity could look like from the perspectives of the student employability journey (i.e. employability as a continuous and lifelong journey), what an employable student would look like and how a mature institution embeds development of student employability in an orchestrated and holistic approach. The Higher Education Academy recognises this in their report [Defining and developing your approach to employability – A framework for higher education institutions](#) (Cole, 2013). In terms of the end result, the report describes a range of different employability definitions and models that exist in HE. It also provides a non-prescriptive framework which can support institutions in embedding employability in an orchestrated way. Similarly, in FE and adult skills, the Wolf (2010) and Young Reports (2014) both stress the centrality of employment as the end result and the need to prepare learners to meet the requirements of employers. This has been given added urgency through the FELTAG movement.

Our study has identified a mixed bag of institutional approaches. There are some isolated pockets of good practice with minimal overall direction except for e.g. defining some broad and generic graduate attributes, for example. However, there are no requirements to embed them in programme learning outcomes and assessment. The other extreme is where there is a top-down strategic approach to developing student employability within programmes across an organisation. For examples of this, see case studies Keele University ([Appendix 3D](#)) and Staffordshire University ([Appendix 3J](#)) and where students are encouraged to take ownership of their lifelong

employability right from the start of the programme. One institution, the University of West London, has processes and resources in place to encourage students in developing their employability skills immediately post-enrolment.

In some institutions, employability is largely left to careers departments to provide information, guidance and support mostly with the aim of helping students obtain jobs (and of course build student employment figures). Nevertheless some use career management and transition online e-learning services such as [Abintegro](#), which support students in a broad range of areas such as self-review, career planning and self-development. The University of London Careers Group runs a successful MOOC in this area. However, students tend to take up such careers support services as an end-of-programme activity. As a result these should not be seen as an alternative to embedding employability throughout academic programmes, including into learning outcomes and formative/summative assessment. Many FE colleges now incorporate a recruitment agency on the campus to function as a commercial service to students (see the FE Case studies in [Appendix 4](#)).

Students can learn employability skills from a broad range of experiences but there must be processes in place for them to reflect on, articulate and evidence the learning

Many of the case study interviewees point out that students are learning employability skills from a broad range of experiences such as co-curricular, extra-curricular and personal living/working activities. An example was given of a student who manages to balance caring for a disabled relative in one part of the country whilst attending university in another part. She was demonstrating a range of employability skills such as time management, problem-solving, prioritisation without ever realising it. Processes therefore need to be put in place to support students in reflecting on, articulating and evidencing these learning experiences. One such example is Birmingham City University's 'Learning from extracurricular activities' module in the Faculty of Health, Education and Life Sciences (see [Appendix 7](#) - HE case study vignettes).

Authentic experiences can develop skills, but depend on the degree of “authenticity” and the degree to which students learn/reflect on them and articulate them

The vast majority of studies conclude that authentic learning or learning by doing is highly effective in developing competency and ‘work ready’ skills. This is particularly in the area of vocational and professional skills such as communication, collaboration, team-working, problem-solving and self-management – and in developing softer attributes such as confidence and motivation. This point is clearly made in the Higher Education Academy report **Pedagogy for employability** (Pegg, 2012) and can be seen in the rapid growth of apprenticeships. Many of the case studies researched as part of this study not only re-enforce this point but go further to highlight that where the authentic learning experiences are real i.e. students are learning from working on genuine employer issues and problems, which provides a powerful motivation for both students and staff. For an example, see the case studies on Glasgow Caledonian University (**Appendix 3F**), the University of Edinburgh (**Appendix 3C**) and the Innotech Project at South West College Cookstown (see **Appendix 4B**). In these case studies, students are working on real company issues. However, it must be emphasised that the success of the learning via such experiences is not necessarily related to the success of the issue on which the students work. Students can learn from both project successes and failures.

On another level, students might have the opportunity to experience working with employers (e.g. on placements). However, they do not always experience situations which allow them to develop a broad range of employability skills such as if they are given mundane tasks working on their own. Having said that, Rob Ward of the **Centre for Recording Achievement** points out that students can learn from such situations as well from a broad range of experiential learning scenarios. These may be looking after relatives or supporting local charities and many such situations require developing skills such as team-work, self-management, collaboration and so on. It’s clear that students do not necessarily need to be changing the

world to develop employability capabilities. For some, simply to experience the world of work is itself a lesson in preparation. As their experience progresses they can be supported in regularly reflecting on their experiences and drawing out and articulating the learning and skills used.

Which brings us to the next, and most important point. While authentic learning experiences are highly valuable, they are only partly useful if students do not reflect on what they have learnt nor clearly articulate this to different audiences such as academic staff and employers. Not only is this point forcefully made in the above mentioned HEA report **Pedagogy for employability** (Pegg, 2012), but many of the case studies in our study reinforce this, especially those on University of Edinburgh (**Appendix 3C**), Birmingham City University (**Appendix 3F**), Staffordshire University (**Appendix 3J**), South Devon College and Loughborough College projects. Furthermore, the case studies highlight that such reflection and articulation of skills must not just be a summative one. It must be a formative process that starts early in a programme and which adopts assessment for learning approaches such as those articulated by David Nicol’s **principles of assessment**. These include embracing dialogue and action on feedback between students, peers, staff and employers (see **Enhancing student employability through technology-supported assessment and feedback**).

Such student reflection and engagement with peers, staff and employers on their experiential learning can be efficiently facilitated by technology. This could be in the form of personal learning spaces that are controlled and owned by the student – the most common being the use of e-portfolios.

Many creative uses of technology, but embedding remains elusive to many institutions

The study has identified some highly creative approaches to developing student employability. For example, the use of digital story-telling to support creative problem solving alongside online simulations and games at Birmingham City University (see **Appendix 3F**). Students with learning

difficulties at the Portland College make good use of 'video selfies' showing competence in a procedure that might otherwise be challenging for them to articulate in a job interview. The University of Greenwich's Virtual Law Clinic (see [Appendix 3A](#)) is another example of a highly creative approach to developing student employability via engagement between students, staff and pro bono lawyers in supporting members of the local community.

As with technology-enhanced learning in general, institutions generally fail to capitalise on such innovations by rolling them out across the institution. They seem to remain as isolated pockets of good practice. The reasons for this are explored in a Jisc report [How do you change the learning landscape? Challenges in the strategic use of technology to support the student experience](#) (Chatterton, 2015).

Embedding employability / attributes into curricula and assessment may be "ideal", but there are challenges

It is generally accepted that embedding employability into curricula represents a "maturity characteristic, and a key element of this is embedding it into learning outcomes, attributes and assessment. The QAA explicitly makes the link between career education and (assessed) learning outcomes as does OFSTED's Common Inspection Framework. However, there are a number of challenges that programme teams face:

- » Curriculum design structures and in particular modular-based programmes can pose barriers to lifelong employability. This is because employability-related learning outcomes typically need to be defined (and assessed) at the programme level (not the module level). Furthermore, it is not at all uncommon for programmes to have minimal assessment for learning approaches in place. These support formative and longitudinal programme assessment approaches linked to programme learning outcomes, which embrace a more holistic view of student progression and development
- » Linked to this are issues associated with the traditional virtual learning environment or VLE, which is typically structured around modular curricula. It often does not simply and effectively support learner-centred approaches to formative and longitudinal assessment and feedback. Nor are learners regularly challenged to think about and articulate their learning experiences, achievements and progression as they unfold
- » Academics do not always possess employability capabilities themselves and are therefore not always in a position to provide effective student direction and support. This is less so with vocational tutors who are drawn primarily from their vocational skills and experience background. Institutions seek to address this issue through the appointment of personal tutors (or mentors) for students who guide them throughout their programmes. However, this approach is not always fully institutionally supported through, for example, staff professional development and appropriate allocation of time in academic work-loads

In many institutions, there appears to be a lack of joined-up approaches between academic departments and corporate careers/employability services

In simplistic terms, careers departments typically focus on supporting students in preparing for and seeking jobs after graduation, typically at an end-of-programme stage. However, the more mature institutions regard employability as an attribute that should be owned and developed in a student right from the start of a programme. There is not much evidence of joined-up approaches between such corporate services departments and academic departments. Careers services may see success as helping a student find a path into a job (which supports employment statistics), but this does not always equate with developing a range of employability skills and finding appropriate graduate level jobs. An interesting case study of where this is changing is the University of Southampton's Mission Employable initiative where the careers department established the need for students to start considering, preparing and applying for jobs much earlier than in the past (see [Appendix 3E](#)).

FE very focused on line of sight to employment, rather than employability or self-employability

The **FELTAG** movement, drawing on the initial report and government response, sees successful employment as one of two purposes of further education. It sees technology having a critical role in the collection, marshalling and publication of competencies and working to make students work-ready. For many, this equates to helping students to make the transition from a school environment to a work environment and the concomitant changes required. In FE this means that the qualification part of college life is merely a milestone in a longer journey that requires FE to walk with the student beyond this point.

There are more similarities than differences between HE, FE and skills sectors

In our study we were struck how both sectors share a clear and concise understanding of the centrality of employability (not just employment) as its primary goal. The introduction of HE fees and the drive from OfSTED inspections has meant that choosing to study is as much an economic decision as a life affirming one.

Both sectors appear to be at the threshold of change, informed and clear in purpose about what needs to be done but reticent to move forward in using technology across the whole organisation. This may be in part caused by the personal nature of technology not fitting well into standardised methods of provision and it may be that in using personal technologies there might be many solutions in one organisation.

Both sectors are exhibiting pockets of excellence, very common to the way e-learning innovation has occurred over the last twenty years and these need a mechanism for sharing.

5.2 Technology is under exploited for employability

Variation in practices and understanding of potential of technologies for employability - by institutions, students and employers - particularly with e-portfolios and social media

Time constraints in undertaking this study have not allowed us to carry out extensive national surveys of use and value of different technologies and we have not identified many current useful reports which provide a national view on use of technologies such as e-portfolios and social media to support employability. However, our research and the authors' experiences of working with FE and HE institutions as well as with employers (large and small) highlights the following:

- » There is considerable variation in use of the different features of e-portfolios. These range from simply using them as an evidence of learning store to uses which engage students with peers, tutors, employers and mentors. This could be in formative learning and reflecting processes, planning and acting on feedback. In addition students use them to articulate and evidence their learning for different purposes like summative assessments, employer engagement. As a broad generalisation, FE adoption tends to be associated with use as an evidence of learning against a set of competencies and HE adoption is more engaging and reflective
- » E-portfolios are used at the departmental (e.g. faculty/school/department) level by many institutions though a minority of institutions adopt an institution-wide e-portfolio policy, unlike with VLEs
- » The disciplines that tend to use e-portfolios in a major way include education, health and business/management
- » In FE there is now widespread use of mapping e-portfolios that capture evidence of competencies in supporting work based learning and apprenticeships

- » There seems to be a correlation between effective re-design and delivery of curricula with successful use of e-portfolios. This might include employability in learning outcomes and assessment, employer engagement and personal tutoring
 - » It appears that the benefits of e-portfolios and critical success factors in implementing them have not been successfully communicated to senior managers and academics, despite some excellent e-portfolio guidance resources existing. Portfolio use in FE has been seen more as an administrative rather than pedagogical tool
 - » Whilst students can be prolific and creative users of social media with their peers, they are not always so effective at using social media to engage with employers. That could include making contacts, building relationships, developing their digital showcasing resources and exploring career and job opportunities, though there are notable exceptions in the creative and design sectors. We have found anecdotal evidence that there is increasing use of the professional network LinkedIn, though we would have expected much greater focus on this network in general
 - » Incorporating social/multi-media for students to engage with employers within curricular design and delivery. This could include learning activities that require students to collect multi-media evidence of their learning and skills. They can then use this as part of their reflective practices and for showcasing online their rounded self to employers
 - » Careers and employability departments providing better information, support and guidance on use of social and multimedia
- UCL have identified a novel concept to provide students with a unique URL for life as well as hosting space with a range of open-source tools which students are encouraged to use creatively e.g. for showcasing themselves to external audiences.
- We also note that widespread use of social media in business and marketing are employability skills in their own right.

Institutions could do a lot more to unleash student creativity in using digital networks/media to engage with employers, alumni and other stakeholders

Building on the point made immediately above that students are not using social media effectively to engage with employers, this may be somewhat linked to the kinds of information, guidance and support that careers departments provide to students. This is often rather reactive/defensive for example focusing on digital safety and building a digital identity. Whilst these are important, students need to be equipped with more proactive skills. Those might include knowing how to communicate and engage effectively with social and multi-media including building relationships with and influencing employers online and building their online/ multimedia showcasing resources. This can potentially be achieved in two key ways:

Digital literacies are not well articulated in relation to employability skills

Considerable work has been undertaken in the HE/FE sectors on the subject of digital literacies. However there has been a tendency to focus primarily on digital literacies relating to academic and scholarly practices. There has been less emphasis on relating such digital literacies to employability, the needs of employers and using language and terminology that is employer-friendly.

For instance, guidance on student digital capabilities to support team-working could focus on for example:

- » Keeping up-to-date with collaboration, communication and information management tools and evaluating their strengths, weaknesses, opportunities and threats
- » Choosing and implementing appropriate collaboration, communication and information tools for use by teams

- » Developing, following and improving effective practices and principles for digital communication, collaboration and information management
- » Influencing team members to use digital tools and guiding them to appropriate awareness-raising, training and support
- » Managing risks with digital tools
- » Compliance and governance with digital tools

Employers and HE/FE generally have low aspirations in relation to graduate digital entrepreneurialism

In practice, employers, employer, sector and professional bodies and HE/FE have low aspirations in relation to “digital entrepreneurialism” for graduates in general (i.e. not just IT students) notwithstanding that organisations such as the CBI ask for them. This is evidenced by exploring how different discipline areas articulate employability skills – in many cases, where IT is mentioned it is typically along the lines of Application of information technology – basic IT skills, including familiarity with commonly used programmes. (e.g. see NUS/CBI “**Working towards your future – making the most of your time in higher education**”). In other words, the focus is on basic skills and knowing how to use software tools. In short, IT is mostly defined in terms of systems and process awareness rather than functional or quality of life outcomes. There is an implicit assumption that anything else to do with IT is the responsibility of IT personnel/graduates. However, IT is not just about using tools. IT now impacts businesses in a multitude of ways from how people work, communicate and learn to how businesses market and sell products and trade with each other, causing major disruptions to established practices. It is therefore not good enough for graduates in general to be taught limited IT skills. They need to be equipped with the skills, know-how and confidence to play a more significant role in shaping how IT is adopted and driven within their employer organisations and how to work effectively with and influence IT personnel within a digital entrepreneurialism agenda.

There is also a need to help employers engage with the technology skills that their younger employees bring to create new, creative and valuable perspectives to ways of working.

All this is reinforced by a European Commission DG Enterprise and Industry report **e-Leadership Skills for Competitiveness and Innovation** (European Commission, 2015). In the report Michel Catinat, Head of Unit Key Enabling Technologies and ICT at the Commission, is quoted as saying:

“Managers, entrepreneurs, and business executives must have e-competences to grow, export and be connected to the global digital markets. In a digital economy, e-leadership skills are essential.”

Also supportive of the idea for managers and business executives to be better equipped with e-leadership skills is “**Acquiring e-leadership skills in Europe**” – another European Commission report. Jisc is also addressing the issue of digital leadership in the education sector through the “**Jisc digital capability co-design project**”, building capability for new digital leadership, pedagogy and efficiency.

Growing band of knowledge in terms of what technology infrastructure is required for progressive employability development and connected curricula

The virtual learning environment (e.g. Moodle, Blackboard and Canvas) forms the mainstay of many (but not all) institutional learning systems. Nevertheless both the FE and HE sectors have raised questions about their suitability and in particular:

- » VLEs tend to be structured around courses that are module-based with a strong emphasis on module learning outcomes as opposed to programme-wide learning outcomes
- » They do not easily and simply support the notion of longitudinal student progression using assessment for learning approaches. These would encourage and

record tutor feedback, dialogue and action on feedback progressively throughout a programme

- » They do not easily support the notion of personal and professional development and planning nor student ownership of their personal learning spaces
- » Students typically lose their access to VLEs and data they have constructed on graduation, thus losing the opportunity to showcase their portfolios to employers
- » VLEs have been successful for collaborative learning, materials distribution, course administration and management, information, support and guidance, but institutions often struggle to achieve consistently high levels of staff-student engagement

Many departments within HE and increasingly, FE institutions complement the use of VLEs with personal student learning spaces such as e-portfolios. Some VLEs incorporate e-portfolio applications, though these tend not to have sophisticated feature sets. These personal technologies are much better suited to supporting student owned/centred learning as well as longitudinal/formative approaches to student development. They also particularly support the concept of personal and professional development and planning for employability and the concept of connected curricula as described in [section 7.1](#).

The more sophisticated e-portfolios like PebblePad have considerable flexibility to structure learning around competences/capabilities, include e-learning content and allow engagement between students and others (e.g. employers, mentors, tutors, peers). This makes them highly suitable for progressive development of employability skills throughout a programme. There is a train of thought that the concept of personal learning spaces (such as e-portfolios) could take over many of the uses of VLEs. This is particularly where there is a greater focus on learning outcomes and longitudinal student progression, where students incorporate personal learning stories and where ownership resides more with students.

Not much evidence of use of data collection/analytics to support student employability, QA and QE

The study found little evidence of institutions exploring data analytics in relation to employability. One institution recognises that its use of e-portfolios and curricular design approaches that encourages student engagement with employers has resulted in a significant pool of data. However, they have not had time to analyse it yet. There are potential benefits from employing data analytics. For example, e.g. being able to evaluate trends in student-employer engagement could enhance curriculum design, support and quality assurance as well as helping spot (in advance) poor performing students.

Useful tools designed for FE in particular have not had the take-up expected relative to the value of such systems. [Myworksearch.com](#) is a case in point (see [Appendix 8](#)).

Possibility of aligning e-portfolio usage with development of HEAR

The [Centre for Recording Achievement](#) has been facilitating the HE sector uptake of the [HEAR](#) (Higher Education Achievement Report) which encourages a broader approach to recording student achievement through different experiences e.g. when undertaking placements or voluntary work. In general universities have mostly adopted this as a summative approach but there is a view that it could be employed in a more formative approach. Tutors and careers departments can support students in dialogue, reflection and personal planning based around an evolving HEAR throughout a programme and where the emphasis is on ownership by students. [A separate Jisc study](#) is investigating the use of technology for supporting the HEAR both in summative and formative approaches.

FE has a well-established use of e-portfolios to map vocational competencies (hard skills) and in supporting apprenticeships

In a straightforward mapping exercise, mapping portfolios are populated with up to 200 competencies that define the qualification, against which the learner collects and attaches evidence of competences met. Once all the evidence is

attached the qualification is completed. Mapping portfolios have a history of easing the administration of course progress and are seen as a process rather than a journey and a system rather than wider CPD. They, typically shave up to 20% off the time to complete, compared to a paper based folder.

5.3 Insufficient engagement and partnership working with employers

Core employability skills, capabilities and attributes are typically being addressed, with variations, but they are continually evolving

There is a mixed and complex picture when it comes to employer and employer/sector/professional body perspectives on student employability. Some sectors and professions (e.g. health) have developed skills frameworks, though we are witnessing a tendency for these to be regularly updated with changing views on what student employability looks like for example the [Wakeham Review of STEM Degree Provision and Graduate Employability](#). The difficulty has come about with the evident rise of the importance of soft skills. These are often called attributes, and are not universally agreed on as a common set, nor do they have agreed language to define them.

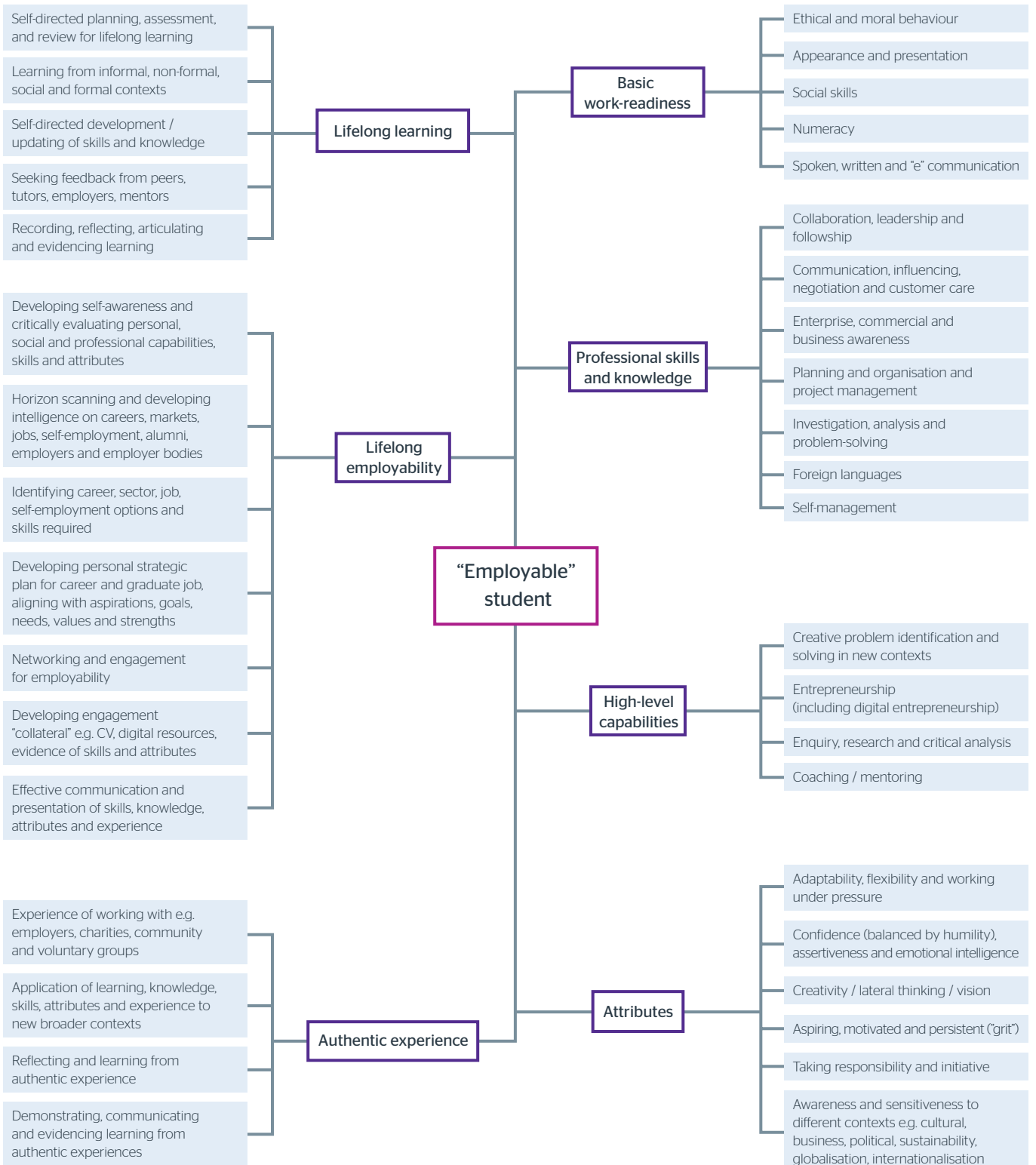
Within FE, employability or line of sight to employment is now the major goal and the [Gazelle Group](#) are advocating what they call 'T-shape' students. Such learners are characterised by the depth of vocational knowledge required for safe working (the vertical element), but also have the width of what might be called the softer skills, around presentability, organisational skills and so on. It now also includes entrepreneurship (the horizontal element). The breadth of adaptability is seen as crucial to supply a person with the attributes and the ability to manage transitions. This would support them through a moving landscape of employment that might include several jobs and periods of self-employment. In addition, people skills are rising in importance to employers for both HE and FE students. Perhaps the critical employment question is 'would I be happy to put this person as my representative in front of my customers?'

In undertaking this study, we needed to remind ourselves that there are boundaries around the study. Its prime focus is on the use of technology to support employability. It is not the intention to repeat the voluminous research (including reports) that has already covered student employability by institutions, educational agencies and employers plus employer, sector and professional bodies. However, we needed some form of framework of student employability around which we can identify how technology can best be used to support the capture, development and showcasing of student employability. We therefore created the following map ([See next page](#)) of what a 'generic employable student' might look like - bringing together a range of views from different education and employer bodies.

There would of course, be different emphases e.g. for different disciplines, contexts and education provider types. Nevertheless the diagram aids this study by providing a framework around which technology can be evaluated in terms of how it can add value to developing student employability.

The reader may notice the absence of digital literacy/IT skills mentioned in the map. It is our thesis that these should be integral to / embedded within each of the map elements for example, e.g. digital skills to support team-working should be articulated in terms of team-working skills, experience, expertise and practices. This point is explored in [section 5.2](#) (Technology is under exploited for employability - Digital literacies are not well articulated in relation to employability skills).

The current Jisc work on [Developing students' digital literacy](#) is creating a digital literacy framework and information and guidance based on a similar model to the above.



The degree to which employers (large and small) are involved in defining and developing employability skills remains unclear

The previous section highlighted that core employability skills, capabilities and attributes are continually evolving making it difficult for institutions to respond to employer needs in a sustained way. In talking to a range of institutions, it was often unclear the extent to which employability skills were defined with input from employers and employer/sector/professional bodies. There are clear calls at a macro level from government, trade organisations like the Confederation of British Industry (CBI) and the UK Commission for Employability and Skills. However, this does not translate into clear guidance for educators and their learners who still rely on personal contact with local employers. Institutions which could most clearly define how they achieved such input typically have measures in place to engage with industry typically at a discipline level such as an Industrial Advisory Group (IAG) e.g. **Birmingham City University's IAG** for the Birmingham School of the Build Environment and the University of Hertfordshire's three **IAGs for Engineering and Technology** which represents the areas of Aerospace, Automotive and Mechanical and Electrical engineering. These three advisory groups advise on:

- » changing market trends
- » enhancing employability of graduates
- » investigating areas of mutual technological interest
- » increasing student participation in work placements
- » facilitating exchanges of staff between the school and industry

It is, of course, harder for institutions to engage with SMEs for a range of reasons such as having to deal with large numbers of separate companies. Moreover, SMEs often do not have the systems and resources in place to engage with institutions in a sustained manner are not able to support students effectively, for example on placements. In FE we have found a pattern of a senior manager engaging large local employers and others further afield, leaving vocational tutors to 'know' the local employers in their vocational area.

Not much evidence of institutions evaluating impact of employability policies/initiatives with employers despite destination surveys

There does not seem to be much evidence of institutions evaluating impact of their employability policies and activities with employers other than statistics from the Destination for Leavers of Higher Education (DLHE) surveys and evaluations of careers department services. These generally do not yield useful information as to impact of how students are using their employability skills for employer benefit. The Association of Graduate Careers Advisory Services (AGCAS) has undertaken work to explore impact of careers services, though this does not seem to have been published. FE has used Destination Surveys as part of the Ofsted Framework. However, it is limited to numbers working rather than look at alignment of employment to course studied or whether skills gained have led to employment rather than employability. An exception found in one of our case studies is Staffordshire University which uses a top-down approach driven by senior management to embed graduate attributes, student employability and work experience/work integrated learning into all curricula. The university are undertaking an evaluation with a longitudinal study to follow employability progress beyond graduation (see **Appendix 3J**). Other examples are where institutions are engaging students in authentic learning experiences - see case studies University of Edinburgh (**Appendix 3C**) and Glasgow Caledonian University (**Appendix 3G**). FE colleges have traditionally taught vocational qualifications in salons, kitchens, travel agencies, workshops, serving real customers - highlighting that students are addressing real employer issues and thus impact can be truly measured. In the University of Edinburgh case study, an agency has been created and run by students with employers paying the agency for identified projects where impact can clearly be identified.

Not always easy to identify truly authentic learning experiences with employers for ALL students, though there is much potential for student cohorts to work in partnership with employers on real and challenging employer/sector problems

Many institutions cited problems of identifying sufficient authentic experiences for all their students year-on year, particularly where they have large cohorts and where the mechanism is short-term placements. Employers can also have constrained motivation for short-term placements as these typically require significant resourcing to support students, whilst not being of major benefit to the employer, except for providing a mechanism to get to know students for possible recruitment. This is particularly true for SMEs. Such short-term placements can often result in a poor experience for students if they are only required to undertake low-level work activities. Nevertheless it must be remembered that these can still provide valuable learning experiences. Students should be required to reflect on these and articulate what they have learnt and the employability skills that they have developed.

Longer term placements such as offered by the **Year in Industry** scheme or via year-long industrial placements provide the time and opportunity for students to add real value to employer. This is particularly if they are supported by both suitable trained employer and academic staff/mentors. It is quite clear that working on authentic learning experiences engenders a high degree of both student and staff motivation and interest. There is certainly a place for social media such as LinkedIn to help colleges and universities to track the progress of alumni (see **LinkedIn for Graduate Employability** presentation by Charles Hardy - Education Engagement Lead at LinkedIn).

A number of institutions have identified alternatives to finding individual placements for each student (to provide an authentic learning experience) e.g. creating large cohorts of students to work collaboratively with an employer to solve a real issue. For example Glasgow Caledonian University Business School engage a cohort of around 60 students to work with an employer on a specific issue

(see their case study in **Appendix 3G**). Technology is used (including a wiki) to allow the students to build a knowledge base for the employer and such technology use allows the Business School to extend the reach of their companies worldwide and the whole process develops a range of employability skills including team-working, problem-solving, international working, synthesis, presentation skills and so on. The InnoTech Centre in South West College Cookstown allocates groups of learners to genuine problems or projects shared by SMEs as part of their study (see **Appendix 4B**).

Many institutions also focus on supporting students in learning from and with a broad range of other external activities often referred to as co-curricular activities e.g. student part-time jobs, volunteering, internships and community support. Institutions often support students in accessing these activities as well as helping them to appreciate how all of these can build their employability, particularly where they are supported in reflecting on and articulating their learning against e.g. a set of graduate attributes or key employability skills.

HE in particular needs to develop greater partnership working with employers and alumni e.g. curriculum design, mentoring, assessments

For an up-to-date picture about employer engagement, the QAA's report **Employer Engagement Emerging Practice from QAA Reviews** (QAA, 2015) should be read, which describes the employer engagement landscape where key activities include, for example, development of student employability and workforce skills development. The report highlights that such activities are increasing in the sector though makes recommendations for how they can be taken further forward. They include that institutions could take more strategic approaches to ensure consistency of approaches, sustainability and embedding. The report also supports mechanisms such as Industrial Advisory Groups which can stimulate greater partnership working with employers. Even more effective is where employers and employer/sector/professional bodies are involved in curriculum design and delivery - though such engagement activities often result from the existence of mechanisms

such as IAGs or where sector/professional bodies influence curriculum design via professional standards frameworks such as in education and health.

An excellent example of an employer/FE/HE collaboration on curriculum design and delivery is the work-based learning BA in Youth Work developed by Edinburgh Napier University, Edinburgh Telford College and the City of Edinburgh's Community and Learning Development Partnership (ECLDP - the employer). The employer provided a full-time member of staff to work with the FE/HE team on curriculum design, ensuring that employability skills were fully embedded into the programmes. In addition, the employer provides work-based mentors who are members of staff and these are trained and the mentoring processes quality-assured by the university, though the staff members have already-established mentoring skills as part of their youth work activities.

Another such example of sector level collaboration between employers, employer/sector and professional bodies and education providers is **Formula Student** run by the Institute of Mechanical Engineers. It is an educational motorsport competition which aims to inspire and develop enterprising and innovative young engineers. It now operates globally and universities are challenged to design and build a racing car and compete in a range of events which demonstrate their understanding, skills and test the vehicle performance. Universities across the UK like Hertfordshire and Coventry integrate the competition, typically within a third-year year-long project for students working in a large team. It develops almost every aspect of discipline and skill that students will need to prepare themselves for the workplace.

The **Year in Industry** scheme mentioned above includes an external volunteer employer mentor who supports students during their year-long placement.

During the study, we did not come across many instances of universities or colleges exploiting their alumni network in support of mentoring students (the alumni network

tends to be managed by an alumni department which can be more interested in raising funds). An exception has been celebrity chefs who have in the past awarded prizes and judged competitions at their old colleges, such as Gary Rhodes at East Kent College. There is much scope for universities to engage with their alumni network to support current students with for example advice, guidance and mentoring - making good use of social media and online communities such as LinkedIn. In HE, the University of Southampton's Mission Employable project encourages alumni to support student employability using social media such as LinkedIn (see case study in **Appendix 3E**). In FE, S&B Autos in Bristol ask current apprentices to present the company and apprenticeship programme to local schools.

HE and FE need to find ways of improved working with a broader range of employers e.g. SMEs

Understandably, there are many barriers for FE and HE to engage with SMEs - not least the sheer number of them and the resource this would require for engagement activities. In addition SMEs do not typically have the resources or systems in place for such engagement activities and can be easily diverted by more pressing business objectives. However, it must be remembered that small firms account for 99% of all private sector businesses in the UK, 47% of private sector employment and 33% of private sector turnover (**2014 figures** from the Federation of Small Businesses). There are also over 160,000 voluntary organisations in the UK (**NCVO statistics**).

Institutions need to find creative ways of engaging with such a broader range of employers. Northampton University has achieved this with an institutional strategic focus on social innovation. The strategy includes the key principle that every student has a responsibility to effect positive social change and requires them to engage with social innovation projects as part of their learning and employability skills development.

Working with supply chains can be another approach - for instance, Birmingham Metropolitan College are undertaking a Jisc project with Jaguar Land Rover, working with their

supply chain companies to develop a collaborative approach to skills development. This will manifest itself in an online portal called Auto Share and Learn. It is the intention of this project to sustain itself via the formation of an industry-education steering group focused on the automotive sector supply chain collaborating on development of shared learning resources, skills-swapping and engaging students (from FE and HE) in employer partnership projects.

FE colleges such as Barking and Dagenham are able to use locality loyalty to develop closer relations with employers and advise on what they are looking for. Such employers take confidence in employing a student who has come through such a 'college experience'.

There is potential for students as partners and innovators initiatives to be focused on student employability and raising the profile of digital entrepreneurialism with employers

In [section 5.2](#) (Technology is under exploited for employability) it was identified that employers generally have low aspirations when it comes to student digital skills and digital entrepreneurialism. This can potentially be addressed by building on two key Jisc student engagement initiatives:

» **The student [Change Agents' Network \(CAN\)](#)**

A national network of students as change agents has been developed where students work in staff-student partnerships on educational innovation and change projects to enhance the student experience. The network has developed a [SEDA](#)-accredited student [Change Leaders course](#) as well as a [Journal of Educational Innovation Partnership and Change](#)

» **The [Summer of Student Innovation \(SOSI\)](#)**

A competition where students can win grants to develop their educational technology ideas with the aim of finding innovative solutions to benefit the whole of UK education and research and improve students' creative design, research, entrepreneurial and project management skills

These two initiatives are focused on students collaborating with others in partnership e.g. academic staff, mentors and support staff on educational innovation and change projects to enhance the student experience. There is no reason why the scope could not be extended to focus on student employability and employer and sector/discipline innovation and change projects. Several of our case studies highlight that this is already being undertaken e.g. the Glasgow Caledonian University case study ([Appendix 3G](#)) and the University of Southampton case study Mission Employable ([Appendix 3C](#)).

There is potential for HE and FE to better collaborate in joined up approaches to technology for employability

In [section 5.3](#), an example of an FE/HE/employer collaboration was described. This focuses on curriculum design and delivery for a new work-based learning degree. The BA in Youth Work was developed by Edinburgh Napier University, Edinburgh Telford College and the City of Edinburgh's Community and Learning Development Partnership (ECLDP - the employer). The project benefited from the Scottish Government's widening participation policy that resourced a series of initiatives focused on articulation from FE to HE - allowing students to seamlessly transition from FE to HE with advanced standing, credit transfer and transition courses. This was an example where both FE and HE benefited from working collaboratively with an employer. It included a common definition of vocational/employability skills sets, allowing students to learn from their work-based experiences and supporting them to make the transition from FE to HE study.

This example highlights how FE and HE can work together in providing a seamless student transition path which can commence at vocational level (e.g. HNC/HND) and progress to a BA Hons and where a common approach to employability is established.

5.4 Variability in resources to support institutions in using technology for employability

Despite excellent resources existing in relation to using e-portfolios, there is a lack of awareness of them and their value to institutions; they could be further developed with guidance to support students in effective use

There are several excellent sector resources in relation to implementing e-portfolios. For example:

- » The Jisc **e-portfolio implementation toolkit** which is an output from a Jisc **e-portfolio implementation study** at the University of Nottingham. This gives guidance on why and how e-portfolios should be used including specific good practice guidance for practitioners and senior managers. It is illustrated by many case studies from across the world. It includes guidance for FE as well as HE
- » **Implementation guidance for e-portfolios** – an output from the Europortfolio project which draws significantly from the Jisc **e-portfolio implementation toolkit**
- » **Catalyst for Learning: ePortfolio Resources and Research** – offers evidence of benefit as well as implementation strategies and practices from a body of work across 24 campuses in the U.S.
- » Jisc **e-Portfolios infoKit**
- » Jisc **Effective Practice with e-portfolios** publication

These resources have been created based on extensive case study-based research and present a powerful argument for adopting e-portfolios in UK higher and further education, identifying a range of educational and efficiency gains. These gains include:

- » Supported student-centric learning (and potentially influencing NSS scoring)

- » Supporting assessment for learning/longitudinal approaches to assessment, feedback and dialogue and action on feedback
- » Supporting the development of student employability skills and work-based/experiential learning approaches
- » Supporting widening participation agendas
- » Supporting lifelong/life-wide learning (including transition and mobility)
- » Efficiency gains through using technology for recording and evidencing of learning and skills development
- » Flexibility for students to use, re-use, re-contextualise and showcase their digital resources for different stakeholders e.g. employers

The resources also identify critical success factors for implementing e-portfolios and exploiting their full capabilities. There is for example a need to ensure that their use is fully integrated into learning and formative/summative assessment activities. It's also critical to ensure students are well versed in personal/professional development planning, reflective practices and in articulating their learning and skills development.

Despite these powerful arguments for e-portfolios, their use in HE/FE tends to be driven at local levels (e.g. faculty, school, department, programme levels) rather than as institutional policy (unlike with VLEs). Furthermore, our study did not find significant use of e-portfolios by students for showcasing to employers.

The Jisc **e-portfolio implementation toolkit**, whilst being very comprehensive, could be reshaped and purposed using complementary techniques. For example, a Viewpoints toolkit could be prepared along the lines of the original Jisc **Assessment and Feedback Viewpoints toolkit** and the one developed for the Change Agents' Network on **student-staff partnerships**. In addition, some

simple motivational resources targeted at students and employers could convey the benefits and value of using e-portfolios. These would promote e-portfolios not just to support student learning but to help them engage with employers and showcase their 'rounded selves'. These materials could include video testimonials from students who have benefited in this way as well as exemplars of student showcasing.

Other ways of reshaping/purposing such resources include creating benchmarking, self-review and diagnostic toolkits.

There is insufficient emphasis in sector resources on making the case for using technology in employability and the importance of student digital literacy as an employability capability in its own right

As a generality, sector resources do not sufficiently emphasise 'making the case' to different stakeholders for using technologies such as for development of student employability, although there are exceptions like the [Jisc e-portfolio implementation toolkit](#). Making the case is crucial for motivating stakeholders to adopt technologies and this includes students, academic staff, professional support staff, administrative staff, senior managers, employers and so on. [Appendix 5](#) (Benefits of technology for employability for different stakeholders) aims to highlight the benefits to different stakeholders of using technology to support student employability. This is based on the study's five dimensions:

- » Technology-enhanced authentic and simulated learning
- » Digital communications and engagement with employers
- » Technology-enhanced lifelong learning and employability
- » Technology-enhanced employability skills development
- » Employer-focused digital literacy development

Guidance on digital literacies could be better contextualised and articulated in relation to employability skills

[Section 5.2](#) (Technology is under exploited for employability) highlighted that digital literacies are not well articulated in relation to employability skills and the study has found no guidance that explicitly makes this link. It is felt that it is important that this link is made to help employers better understand how digital literacies are crucial in underpinning employability skills and this will require using language and terminology that is employer rather than academic focused.

There are minimal resources relating to digital entrepreneurialism (digital enterprise)

[Section 5.2](#) (Technology is under exploited for employability) highlighted that employers and HE/FE generally have low aspirations in relation to graduate 'digital entrepreneurialism'. This is a potential area where the sector could collaboratively develop resources to raise aspirations and potentially make a valuable contribution to employer entrepreneurialism. The Young Report (July 2014) talks of developing in every FE student an enterprising mindset. It wraps up the notion of being 'work ready', a personal maturity characterised by being self-organised, and adaptable in approach - in order to be productive in a work setting.

There is insufficient guidance on effective use of social media to support employability

[Section 5.2](#) (Technology is under exploited for employability) highlighted that social/multi-media is under-exploited by students for engaging with and developing relationships with employers. This includes digital showcasing of their 'rounded selves', which celebrates all a student has to offer. However, there are minimal sector resources to support staff and students on good practices in this area and motivate them to enhance their practices. The resources developed by many institutional careers departments tend to be conservative and focus more on issues such as digital safety and protecting digital identity. Such resources are all rather defensive and do not recognise the potential for students to use social media to engage with employers in creative, perhaps even disruptive, ways.

St. Helens College (see [Appendix 4J](#)) use of LinkedIn for foundation degree students is a positive example showing how students might form a professional community of practice whilst still in formal learning and making first connections with prospective employers.

There is potential for greater adoption of multimedia communications approaches as part of guidance materials e.g. using screencasts, videos

The use of multimedia communications approaches (e.g. videos, screencasts) is not that extensive in the HE/FE sectors given the volume of text-based material, though Jisc has produced a range of video case studies for example e-portfolios. Video material can be a very powerful motivational tool using student and staff testimonials where they articulate the benefits of adoption of technologies – and addressing the “why should I engage with technology?” question. Audio-narrated screencasts can also be a powerful way of helping staff and students to visualise effective use of technologies and how to engage successfully with tools like e-portfolios, wikis and social media. We have found evidence of large employers conducting one-way Skype-type recorded screen casts as an initial part of the interview procedure, emphasising ‘presentability’ as a red-line issue to some employers. The sonru [video job interview service](#) is an interesting example of using multimedia approaches to enhance the traditional text-based CV.

Resources on their own are insufficient – institutions need to be supported in using them effectively e.g. through consultancy, mentoring, coaching, collaborative benchmarking

The experience of the authors in implementing change toolkits such as [Viewpoints](#) and best practice guides highlights that institutions need to be supported in using them. It seems that staff can be overwhelmed by the sheer volume of guidance materials available across the FE/HE sectors and need help with signposting, evaluating, selecting and navigating such resources based on their needs and contexts. In reality, they need support in the form of consultancy, mentoring and coaching. This

requirement was strongly evidenced by consultants in the [Changing the Learning Landscape programme](#), led by the Leadership Foundation for Higher Education. The programme aimed to bring about strategic approaches to technology-enhanced learning.

6. Institutions are using technologies in five key ways to support student employability

Headline messages

Institutions are using technologies in five key ways to support student employability providing significant benefits to students, employers and institutions:

Technology use	Details
1 Technology-enhanced authentic and simulated learning experiences	<ul style="list-style-type: none"> » Active and real world learning experiences - supported by technologies - that help to develop employability skills » Simulated experiences that help to overcome issues such as health and safety and large costs issues of authentic learning » FE provides real environments in which to learn e.g. kitchens, workshops, garages, salons etc. introducing students to vocational specific technologies
2 Digital communications and engagement with employers including development of digital identity	<ul style="list-style-type: none"> » Researching, identifying and developing contacts and relationships with employers » Developing digital and employability identity » Developing digital collateral as evidence of student 'rounded self' » Showcasing student 'rounded self' to employers in order to show distinctiveness » Sharing industry identified problems for learning opportunities develops professional relationships
3 Technology-enhanced lifelong learning and employability	<ul style="list-style-type: none"> » Self-directed personal and professional learning (planning, reflection, managing, recording, review) - supported by technology » Digital feedback and engagement with a variety of stakeholders including employers to help develop learner self-regulatory skills » Employer-supported/ related assessment for learning
4 Technology-enhanced employability skills development	<ul style="list-style-type: none"> » Learner skills diagnostics » Technology-enhanced development for skills gaps » Computer-aided assessment » Institution audit of organisational and course preparedness to support development
5 Employer-focused digital literacy development	<ul style="list-style-type: none"> » Developing student technology-enhanced employability skills » Developing 'digital entrepreneurialism'

The benefits to key stakeholders of using technology for employability are summarised in [Appendix 5](#).

6.1 Technology-enhanced authentic and simulated learning experiences

Technologies are being used as follows:

- » Active and real world learning experiences - supported by technologies - that help to develop employability skills
- » Simulated experiences that help to overcome issues such as health and safety and large costs issues of authentic learning
- » FE provides real environments in which to learn e.g. kitchens, workshops, garages, salons etc

Examples of such technology use are detailed in the table below:

Technologies	Applications	Examples
Wiki	Student cohorts working with employers to collaboratively develop knowledge bases that help to address real employer issues	» Glasgow Caledonian University - business students develop their employability skills through collaborating on problem-solving with employers on real issues (see Appendix 3G)
Simulations, games and “real” environments	Creation of online simulations, games and real environments (such as workshops and garages). These represent authentic working environments and support students in practising their employability skills. They also help to overcome issues such as health and safety and large cost issues of authentic learning	<ul style="list-style-type: none"> » Birmingham City University - online simulations and games for development of employability skills in health students (Appendix 3F) » S&B Autos Bristol using a simulation Paint Spray Shop to teach panel painting skills » Students at Portland College (for students with disabilities) video their work competencies to share with prospective employers
Specialist systems	Specialist online systems that support engagement between employers, students and the wider community	<ul style="list-style-type: none"> » University of Greenwich - Virtual Law Clinic (see Appendix 3A) » Innovation Centre - South West College who partner SMEs with students on real work projects and problems (see Appendix 4B)
VLE, cloud collaboration tools and social media	Use of a variety of online tools to support collaboration, communications, document management and project management for authentic learning experiences	<ul style="list-style-type: none"> » Duale Hochschule Baden-Württemberg-Ravensburg (DHBW-R), Germany and Oregon State University (OSU) - Formula Student collaboration (see Appendix 7) » Bath Spa University - virtual internship programme (see Appendix 3I) » University of Southampton - Mission Employability (see Appendix 3E) » Numerous examples of FE and HE students creating LinkedIn accounts and using Twitter to collect prospective employers as followers e.g. St Helens College (see Appendix 4J)

The benefits for learners, employers and institutions can be summarised as:

Benefits to learners	Benefits to employers	Benefits to institutions
» Authentic learning experiences can be highly effective in developing employability skills	» Employers can benefit from student creativity and digital skills e.g. in problem-solving real issues for them - together with staff support	» Technology-supported collaboration provides opportunities for students and staff to work with overseas and remote employers
» Provides opportunities for students to experience different working environments to aid decision-making with careers and jobs	» Supports employers in evaluating students for potential recruitment	» Technology-supported collaboration can build capacity and efficiency with numbers of students working with employers
» Technology-supported collaboration can provide opportunities for students to work with overseas and remote companies	» Students are more likely to be 'work-ready'	» Simulations and games can be a cost-effective method for building capacity for developing learners e.g. savings in costs of materials, avoidance of health and safety concerns, scalability of number experiencing simulated learning
» Provides insight into industry expectations of technology use		
» Different student groups can try new skills as 'tasters' or options for personal development		» Provides opportunities for university staff and employers to collaborate and better understand each other's needs and issues which can lead to enhanced course development

The following constraints typically exist with such pedagogies and use of technologies:

- » Universities can find it difficult to provide quality placements for all students, though this is where technologies can be useful. For example, wikis can be used to support student collaborative groups to work with a single employer. Combined with cloud tools and social networking, they can also allow students to engage with employers worldwide
- » Simulations can be initially expensive to develop unless costs are shared or there is a strong business case for their adoption which can be the case if there are, for example, safety issues involved

6.2 Digital communications and engagement with employers

Technologies are being used as follows:

- » Researching, identifying and developing contacts and relationships with employers
- » Developing digital and employability identity/reputation
- » Developing digital collateral as evidence of student rounded self
- » Showcasing student rounded self to employers order to show distinctiveness
- » Sharing industry identified problems for learning opportunities develops professional relationships
- » Increasing use of personal on-line folders, independent of the college or university to capture and present work amongst creative and arts based students

Examples of such technology use are detailed in the table on the next page:

Technologies	Applications	Examples
Social media	Students using a range of online, mobile and multi-media tools to better engage and build relationships with employers including development of their digital identity/reputation and rehearsing and showcasing their digital resources	<ul style="list-style-type: none"> » Birmingham City University - Creative problem solving using digital story-telling (see Appendix 7) » University of Southampton - Mission Employable and use of social media (see Appendix 3E) » University of Bolton - Digital Storytelling for employability (see Appendix 7)
Multi-media		
Mobile devices		
Cloud collaboration tools		
E-portfolios and other personal learning showcasing tools	<p>Mobile devices support capturing of evidence (e.g. talking head testimonials) that students can also use to showcase their skills and in digital story-telling</p> <p>LinkedIn is a particularly effective network to support students in engaging with employers including development of professional relationships via sharing identified problems for learning opportunities</p>	<ul style="list-style-type: none"> » Numerous colleges using Mapping Portfolios for work based learning now using video capture through mobile devices to capture evidence of competencies » Reading College have moved from sharing technologies (Moodle) to personal Technologies for all students, their teachers and their managers (the full range of Google EduApps). Students still collaborate but from personal spaces » Creative Advertising students at Falmouth University use personal folders such as dunked.com to tell the story of campaigns and design work to show to prospective employers and clients » University of Edinburgh School of Art and Design (see Appendix 3C) » Birmingham City University Business School case study (see an example of a portfolio for an employer to view) » St Helens College use of LinkedIn (see Appendix 4J)
Mapping Portfolios for Apprenticeships and bespoke short training	Use of mapping portfolios to capture and map up to 300 competencies to demonstrate skills, used in work-based learning and apprenticeships	<ul style="list-style-type: none"> » Hadlow College now using only electronic methods of capturing competencies in work based learning » Awarding bodies are looking to present 'byte-size' learning packages » Heart of Worcestershire College are offering so-called 'learning objects' for collection and use by students

The benefits for learners, employers and institutions can be summarised as:

Benefits to learners	Benefits to employers	Benefits to institutions
<ul style="list-style-type: none"> » Opportunities for students to efficiently use social networks and multimedia to better network and engage with a range of employers in pursuit of their careers and professional development » Opportunities for students to build a broad range of digital collateral that can help them to better rehearse and showcase their rounded self to employers and personal clients compared to a written CV » Opportunities for students to shape their online identity to include employability and digital skills 	<ul style="list-style-type: none"> » Supports student recruitment, allowing employers to better identify potential employees that match their needs - by seeing the student beyond the qualification » Allows employers to evaluate potential recruits efficiently using a broad range of student digital collateral that can demonstrate and evidence student experience, skills, knowledge and attributes 	<ul style="list-style-type: none"> » Potential to efficiently engage alumni with student learning and projects e.g. for mentoring students » Opportunities for institutions to better and more efficiently engage with a broader range of employers like SMEs and with professional, sector and regulatory bodies » Opportunities to increase income on bespoke training

The following constraints typically exist with such pedagogies and use of technologies:

- » Students require expert training and access to resources to support development of e-communications and their digital identity/reputation
- » Academic staff are not always best equipped to provide such training
- » Whilst teachers and their students demonstrate the capability to change and exploit technology, the willingness of the organisation to support that capability defines its capacity
- » Employers are not always willing to engage with using technologies and sometimes have constraints themselves like firewall policies and business priorities

6.3 Technology-enhanced lifelong learning and employability

Technologies are being used as follows:

- » Self-directed personal and professional learning (planning, reflection, managing, recording, review) supported by the artful deployment of technology
- » Technology enabled feedback and engagement with a variety of stakeholders including employers to help develop learner self-regulatory skills (see [Developing 'learner judgement'](#) and David Nicol's [Foundation for graduate attributes: developing self-regulation through self and peer assessment](#)).
- » Employer-supported/ related assessment for learning

Examples of such technology use are detailed in the table below:

Technologies	Applications	Examples
e-portfolio or personal learning spaces (e.g. blogs, web-sites, wikis)	Using tools such as e-portfolios (or other personal learning spaces such as blogs, web-sites and wikis). These support self-directed personal and professional learning (planning, reflection, managing, recording, review) including reflecting on co/ extra-curricular activities. Also they support engagement and dialogue with stakeholders including employers, mentors and assessors	<ul style="list-style-type: none"> » University of Edinburgh - e-portfolios in School of Art and Design (see Appendix 3C) » Keele University - e-portfolios for student employability (see Appendix 3D)
Online badges		<ul style="list-style-type: none"> » University of Greenwich - professional development portfolios for science and engineering students (see Appendix 3A) » Abertay University Law School - use of online badges (see Appendix 7) » Birmingham City University - learning from extra-curricular activities using e-portfolios (see Appendix 3F) » University of Nottingham - e-portfolios (see Appendix 7) » Staffordshire University - Staffordshire Graduate Employability project using e-portfolios (see Appendix 3J) » City of Glasgow College - a bespoke e-portfolio for use by Stonemasons to capture examples of work and experiences gained by students during the 85% of time spent working with employers as part of their apprenticeship

The benefits for learners, employers and institutions can be summarised as:

Benefits to learners	Benefits to employers	Benefits to institutions
<ul style="list-style-type: none"> » Learning and development using portfolios can offer learner-centric approaches compared with course-based e-learning systems » E-portfolios can offer highly efficient ways for students to support their lifelong learning, helping them to make judgements and evaluate and manage their own learning » Students should be able to own and store their e-portfolio data enabling it to be used how, when and where they like » Learners have the opportunity to receive feedback from a range of stakeholders » Students can use their own devices to capture evidence for e-portfolios » Students can learn to self-validate their own work and ask others to critique it rather than seek assessment of a teacher 	<ul style="list-style-type: none"> » Portfolio-based learning provides opportunities for assessments to be employer-focused (see University of Exeter work-integrated assessment case study) » Employers benefit from graduates who are equipped for lifelong learning and employability where there is greater focus on capabilities of graduates to adapt to new needs, contexts and constraints, rather than having skills of the moment » Students can marshal personal content to show what is relevant only in an order that is helpful to each employer 	<ul style="list-style-type: none"> » Portfolio-based learning is highly supportive of learner self-directed, self-review, assessment for learning and longitudinal progression approaches and can therefore act as a Trojan horse for enhancing curricula

The following constraints typically exist with such pedagogies and use of technologies:

- » Simplicity and ease of use in relation to e-portfolio data mobility
- » Portfolio-based learning raises many issues for institutions which have invested heavily in more course-based learning environments
- » Some students are reluctant to take control of learning preferring to simply follow a structured programme. Therefore scaffolding needs to be provided through the design of learning activities and systems to support students in the development of these skills - both formatively and summatively

6.4 Technology-enhanced employability skills development

Technologies are being used as follows:

- » Learner skills diagnostics
- » Technology-enhanced development for skills gaps
- » Computer-aided assessment
- » Institution audit of organisational and course preparedness to support development

Examples of such technology use are detailed in the table below:

Technologies	Applications	Examples
Online diagnostics VLEs OERs	Provision of a range of tools, resources and services to support students in self-reviewing, planning and developing their employability skills	<ul style="list-style-type: none"> » University of Northampton - self-directed approaches to evaluation, planning and development of employability skills via engagement with social innovation and enterprise where students have access to a range of diagnostic, planning and development resources (see Appendix 3B)
E-learning content including e-books and multimedia content		<ul style="list-style-type: none"> » Birmingham City University - A series of resources as part of the toolkit Creating Futureproof Graduates that helps student develop a number of key skills demanded by employers (see Appendix 3F)
Computer-aided assessment including electronic management of assessment		<ul style="list-style-type: none"> » University of London Careers Group – careers and employability MOOC (see Appendix 3H) » South Devon College ask students to complete a Moodle course based on examining and demonstrating the work skills asked for by local employers that students are able to demonstrate
Online badges		<ul style="list-style-type: none"> » City & Guilds are working to offer Mozilla badges to students to demonstrate 'work ready' skills » Abertay University Law School use of online badges (see Appendix 7)

Table continued on next page

Technologies	Applications	Examples
Online careers and transition services	<p>Online systems to support careers and student transition including for example:</p> <ul style="list-style-type: none"> » Visualising career pathways » Career planning » Career news » Self-assessment » Self-development (e.g. e-learning materials) » Job hunting » Interview training » Developing a CV 	<ul style="list-style-type: none"> » Liverpool Hope University - Abintegro - career management and transition e-learning (see Appendix 7) » My worksearch.com provides a mechanism for student self-assessment of skills and interests and suggests employment routes and gaps in skills portfolio to fill » Abingdon and Whitney College work with local employers to provide on-line mock interviews and provide feedback to students on presentation

The benefits for learners, employers and institutions can be summarised as:

Benefits to learners	Benefits to employers	Benefits to institutions
<ul style="list-style-type: none"> » Supports students in evaluating their own employability skills » Supports students in flexible and efficient approaches to developing and reviewing their employability skills » Provides students with information to manage their own learning needs 	<ul style="list-style-type: none"> » Graduates have the capability of independently evaluating their own skills and exploiting online resources to develop their skills. Showing and evidencing personal improvement through analysis and making remedial choices is a strong employability skill itself 	<ul style="list-style-type: none"> » Institutions can build in employability skills assessment into electronic management of assessment systems » Provision of online resources for diagnostics and development of employability skills can be highly efficient and cost-effective, particularly if OERs are used

The following constraints typically exist with such pedagogies and use of technologies:

- » Digital solutions on their own are not always sufficient; support in the form of student or staff mentors can be important

6.5 Employer-focused digital literacy development

Technologies are being used as follows:

- » Developing student technology-enhanced employability skills
- » Developing and showcasing digital entrepreneurialism

Examples of such technology use are detailed in the table below:

Technologies	Applications	Examples
All!	<p>Developing student technology-enhanced employability skills</p> <p>Developing digital entrepreneurialism</p>	<ul style="list-style-type: none"> » Glasgow Caledonian University – business students develop their employability skills through collaborating on problem-solving with employers on real issues (see Appendix 3G) » Birmingham City University – Creative problem solving using digital story-telling (see Appendix 3F) » University of Southampton – Mission Employable and use of social media (see Appendix 3E) » The Young report asked that every FE student be able to develop an enterprising mindset as part of their educational development » City and Guilds are making opportunities in their qualifications and in Learning Assistant to evidence examples of ‘soft skills in action’ » The Welsh Government are offering an Enterprise course as part of their Welsh Baccalaureate and have classified digital literacy as the third “essential skill” along with literacy and numeracy

The benefits for learners, employers and institutions can be summarised as:

Benefits to learners	Benefits to employers	Benefits to institutions
<ul style="list-style-type: none"> » Students develop a better understanding of how to identify and apply technology to employer contexts and needs 	<ul style="list-style-type: none"> » Graduates are better able to unleash their digital skills and understanding in pursuit of business objectives in creative and innovation ways 	<ul style="list-style-type: none"> » Students and graduates are better equipped to meet the needs of employers
<ul style="list-style-type: none"> » Students will potentially be more employable 	<ul style="list-style-type: none"> » Graduate can help to inspire and influence employer IT departments 	<ul style="list-style-type: none"> » Students can be used by institutions as digital change agents – focusing on institutions as employers

The following constraints typically exist with such pedagogies and uses of technologies:

- » Institutions do not generally make the explicit link between specific employability skills and technologies that support those specific skills
- » Institutions typically struggle to know how best to equip students with digital literacies (see the Jisc guide [Developing students' digital literacy](#))
- » The needs of local employers are not standard and can be very specific

7. Three ways programme teams can enhance practices are recommended

The assumption that a qualification (with a few notable exceptions) leads to employment is perhaps redundant. We now understand the increasing likelihood of a working life containing many different jobs, including periods of self-employment and for many, some of these changes will be radical. This and the previous government see education as providing 'line of sight to employment' but we believe that the ambition of education should be to provide line of sight to employability. This means equipping learners with the mind-set and ability to read, interpret, adapt, and move with the changing circumstances to remain economically independent through work.

Idea	Details
1 Maturity is probably best developed through 'connected curricula' - embedding employability in curriculum and assessment combined with authentic experiential learning and employer engagement and underpinned by technology	<ul style="list-style-type: none"> » Some excellent examples of connected curriculum where employability is embedded into curricula and assessment » Connected curricula inextricably linked to assessment for learning approaches and authentic assessment » Curricula and assessment must incorporate student articulation of their experiential learning and employability skills » Connected curricula map well to the QAA Flexible Curricula framework » Connected curricula requires a learner-centred connected technology infrastructure » Connected curricula require programme-wide student support » Connected curricula require employer engagement » Connected curricula require institutional policies, plans and resources to be joined-up
2 Lifelong employability in a digital world needs to be a core student capability - with students encouraged to take ownership early on	<ul style="list-style-type: none"> » HE and FE need to prepare students for taking ownership of identifying, developing and presenting their employability skills and capabilities early on using technology » 'Lifelong employability' is a key employability capability in its own right » Self-directed personal and professional learning (planning, reflection, managing, recording, review) can be effectively supported by e-portfolios » Digital feedback and engagement with a variety of stakeholders including employers can be facilitated by technologies such as e-portfolios and social media » Students can be provided with technology-enhanced self-diagnostics and development resources to aid self-review and development
3 Technology is used to underpin student employability development with clearly identified rationale, benefits to stakeholders and adoption of good practices	<ul style="list-style-type: none"> » Technology-enhanced authentic and simulated learning experiences » Digital communications and engagement with employers » Technology-enhanced lifelong learning and employability » Technology-enhanced employability skills development » Employer-focused digital literacy development

7.1 Maturity is probably best developed through connected curricula - embedding employability in curriculum and assessment combined with authentic experiential learning and employer engagement and underpinned by technology

The 'connected curricula' idea builds on a range of approaches such as UCL's [Connected Curriculum](#) initiative, the University of Greenwich Greenwich Connect initiative (see [Appendix 3A](#)) and David Nicol's [principles of assessment](#).

Some excellent examples of connected curricula where employability is embedded into curricula and assessment

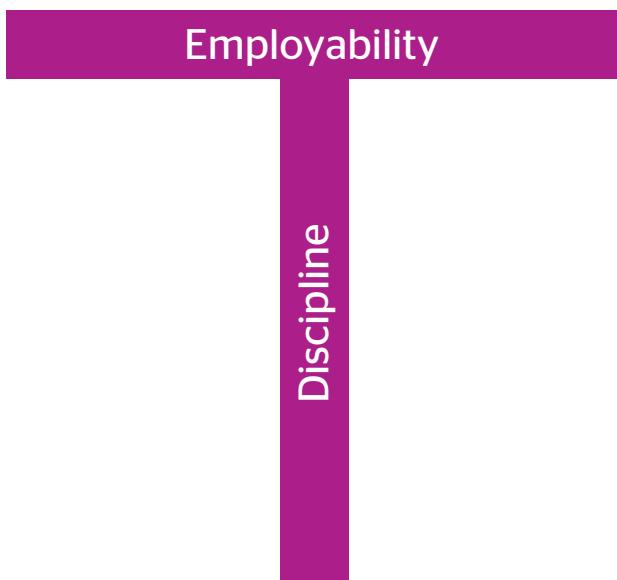
The University of Edinburgh case study ([Appendix 3C](#)) and the Glasgow Caledonian University case study ([Appendix 3G](#)) exemplify how employability can be embedded into curricula, through including employability in learning outcomes (typically at the programme level) and in both formative and summative assessment and feedback. Another example of such integration is Manchester Metropolitan University's [Employability Curriculum Framework](#).

Combining employability with discipline learning in learning outcomes and assessment is often metaphorically described as a 'T-profile' where the vertical bar represents depth of discipline learning and the horizontal bar represents a broad range of employability capabilities that loosely defines the degree of student flexibility and adaptability. Learners rely on their employability skills to then, within reason, acquire the knowledge to undertake their job. It follows from reports from employers that they are willing to take candidates who lack the precise skill requirement if they are the 'right' person. It is perhaps easier for employers to invest in knowledge acquisition than to invest in character building.

'Connected curricula' inextricably linked to assessment for learning approaches and authentic assessment

As well as embedding employability into learning outcomes and assessment, the idea of connected curricula is predicated on "assessment for learning" approaches, which typically feature:

- » Re-balancing assessment to place greater emphasis on formative assessment
- » Longitudinal approaches throughout a programme to formative and summative assessment
- » Students expressing the assessment criteria in their own language
- » Strong emphasis on dialogue and action on feedback (and follow-through of actions on feedback)
- » Inclusion of self-assessment and peer assessment/ feedback approaches
- » Adoption of principles of good assessment and feedback (see Jisc [Assessment and feedback principles overview](#))



Curricula and assessment must incorporate student articulation of their experiential learning and employability skills

All the interviewees in our case studies emphasised that students are not necessarily effective in reflecting on and expressing their learning and employability skills. A key part of the formative assessment for learning cycle is therefore to require students to continually reflect on and express their learning and employability skills throughout a programme. This is part of formative assessment, and dialogue and action on feedback.

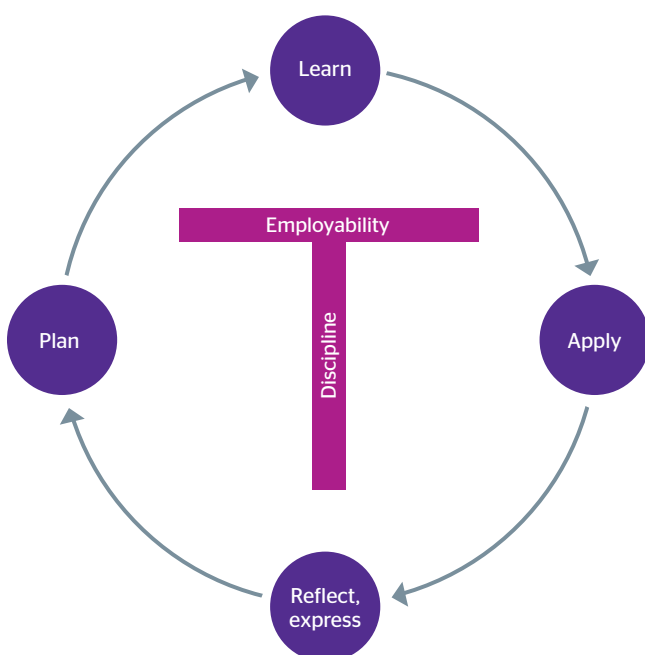
Teaching good reflective practice is also important - the University of Edinburgh case study, for instance, includes an induction workshop on self-assessment and reflective writing and the formative feedback process includes evaluating this. The Institute for Learning and now the **Society of Education and Training** emphasise this is a critical skill for FE and Skills teachers in maintaining professional standing, and there is no other way of achieving Qualified Teacher Learning and Skills (QTLS) other than by a reflective model.

Connected curricula map well to the QAA Flexible Curricula framework

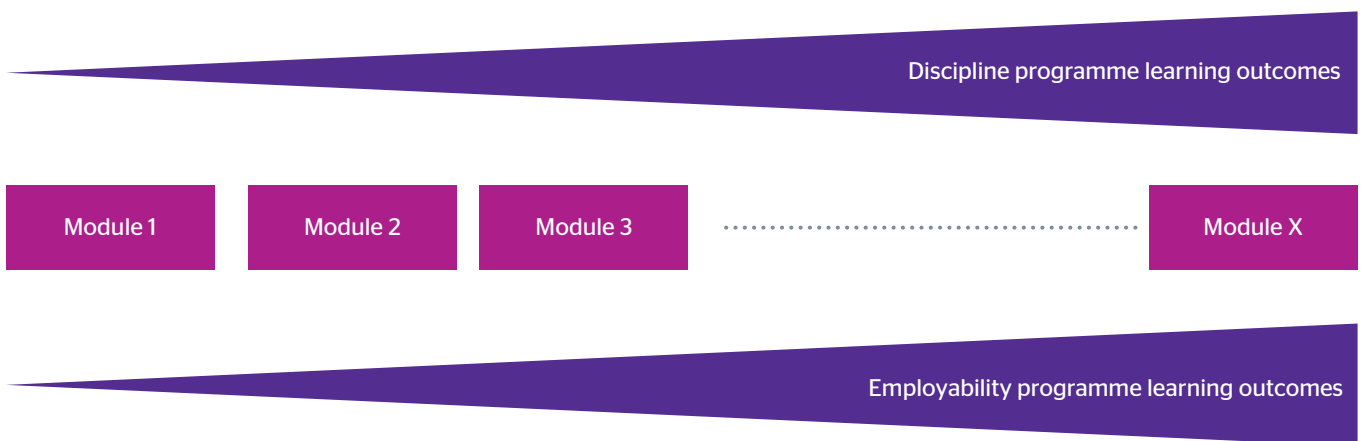
Our concept of connected curricula align with the QAA (Scotland) **Flexible Curricula** framework which has four key themes:

- » External engagement and partnership
- » Anywhere, anytime learning
- » Entry, transition, progression and exit
- » Learning model, personalisation and learner engagement

The QAA provide a **toolkit** that programme teams can use to enhance practice with flexible provision and the framework embraces the connected curricula concept that brings together employability and discipline learning outcomes, assessment for learning approaches and employer/learner engagement. The **toolkit** is based on the **Viewpoints** change process, developed by the University of Ulster with funding and support from Jisc.



Connected curricula requires a learner-centred connected technology infrastructure



The connected curricula concept is highly predicated on programme-wide (longitudinal) approaches to student development right from the commencement of a programme (and even pre-induction). The concept focuses on both discipline and employability learning (see the T-profile described earlier).

This perhaps reflects the need to re-visit the typical modular programme structure. In many instances, programmes have become a series of linked modules without too much of a programme wide approach to student development, assessment and feedback that builds on each successive module. Modular structures offer a high degree of flexibility of course, but do not easily support all the **principles of good assessment and feedback** highlighted earlier in this section. The University of Bradford **PASS project** (Programme Assessment Strategies) explored the issue of how to design an effective, efficient, inclusive and sustainable assessment strategy which delivers the key course/programme outcomes. Some programme teams address this issue by creating programme-wide modules which focus on developing skills like employability.

Another key barrier to connected curricula is that many institutional learning infrastructures are based around the virtual learning environment (VLE). These are structured on modular-based courses and do not necessarily have the

features to simply and effectively support programme-wide student development. For example, institutions need to capture not just the totality of feedback but also all related profiling, dialogue, actions and follow-through of actions, all focused on both module and programme learning outcomes. In other words, such infrastructures are more course-centric rather than student centric. Whilst the world has moved from shared software and spaces to personal spaces and personal applications, education is still making the move. It is arguably not helping students to think, work and organise themselves in a way that prepares them for the way the world works beyond formal education.

Some VLEs can be used to support longitudinal development. For example, the UCL Institute of Education developed a Moodle plugin to allow listing of a student's submission/feedback history for Moodle and Turnitin assignments. Many VLEs also have an e-portfolio function though it is unusual for students to be able to access the VLE following graduation. Many institutions choose to use a separate and dedicated e-portfolio tool which is controlled/owned by the students and which is used for a range of tasks, all of which is student-centric:

- » planning personal/professional/academic development
- » recording, evidencing and reflecting on learning/employability
- » supporting dialogue and engagement of students with a range of stakeholders such as employers, tutors, mentors and peers

Whilst user-interfaces of VLEs and e-portfolios don't typically provide a consistent user experience, the existence of technologies such as **Learning Tools Interoperability (LTI)** allow seamless user transitions between such systems with single user sign-on. It can be easily argued that inconsistent user interfaces are not an issue as students will experience this to a much greater extent when they enter the world of employment. South Devon College enrolls every learner on its Moodle employability courses to give them exposure to the requirements of local employers, along with activities to help students meet those requirements.

There is a train of thought amongst some institutions about the typical VLE. The argument says that the VLE tends to be used mostly for managed distribution of course information and materials and has not been successful at encouraging newer pedagogies such as collaborative learning, assessment for learning and constructiveness learning. The argument then goes on to re-think the infrastructure to make it more student-centric with technologies such as e-portfolios and other personal learning tools. This topic is too large for this report to go into, except that we do want to acknowledge the importance of student-centric infrastructure to support connected curricula. Such curricula are driven by learning, assessment and feedback activities and the needs of all those involved in supporting the student's learning journey.

Connected curricula require programme-wide student support

Many (but by no means all) institutions provide some form of programme-wide student support in the form of

personal tutoring, which can vary in its focus on discipline or employability (or both). This can be very important in supporting the student in formatively reflecting on their learning/employability capabilities and in action planning and following through on their actions. However, not all institutions which strategise on such personal tutoring implement it effectively. For example tutors can be assigned to such roles, but it is not recognised in their workload allocation and/or professional recognition/reward. Furthermore, training in good practices in personal tutoring is not always provided. Institutions therefore need to address these issues when implementing such support roles.

Connected curricula require employer engagement

Employer engagement with student learning provides many benefits and can be achieved in a number of ways. For example many universities engage with employers through industrial advisory boards - the University of Hertfordshire, for instance, has a number of these in science, engineering and technology and they focus on:

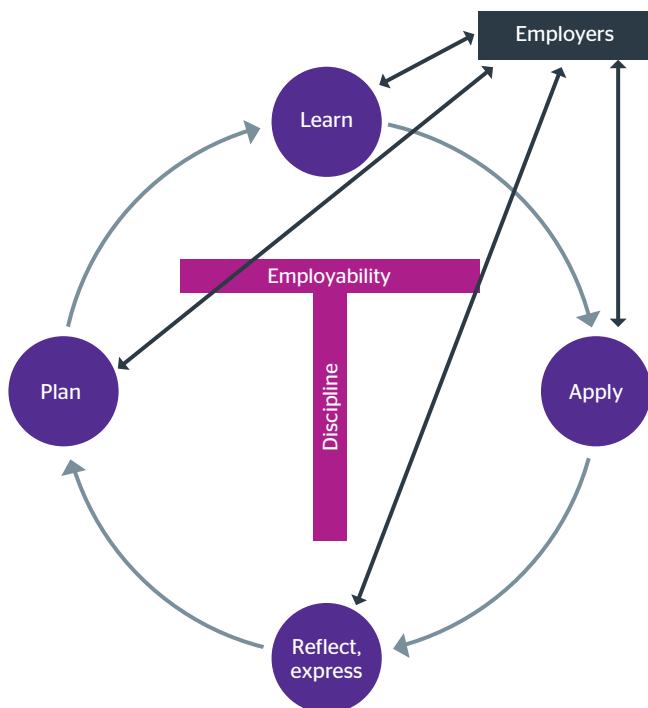
- » changing market trends
- » enhancing employability of graduates
- » investigating areas of mutual technological interest
- » increasing student participation in work placements
- » facilitating exchanges of staff between the school and industry

For many years, Hertfordshire has also involved employers in curriculum design on courses such as automotive engineering and such collaborations are common in discipline areas such as education and health, where there are professional standards frameworks.

The apprenticeship model that is expanding in the work skills sector takes this idea to its natural conclusion. It focuses learning in the workplace, supported by short periods away for wider, structural training activities. We have found

at least five reports published in the last six months alone that ask for the general acquisition by all FE and Skills learners of an enterprising mindset. This would mean that they arrive at an interview having a common understanding with the interviewer about the nature of employment.

Placements and apprenticeships provide authentic learning experiences for students, though there can be drawbacks as [section 6.1](#) pointed out.



Engaging employers in curriculum delivery is a key element of our connected curricula concept and this can be achieved in a range of ways, including:

- » Employers setting challenges for students (including student cohorts) to address and collaborating with them in addressing the challenges. FE placements follow this model
- » Employers and alumni acting as mentors to students and providing feedback on work/learning from an employer perspective

- » Employer bodies setting sector/profession challenges for students/student cohorts
- » Staff-student initiatives set-up to offer authentic services to employers. This could include technology consulting, business consulting and media/IT developments. It could even extend to consumer services like the University of Greenwich Virtual Law Clinic
- » Employers bringing business premises into college buildings and working with students directly

Section 6.1 (Technology-enhanced authentic and simulated learning experiences) highlighted the many ways that technology can be used to underpin such collaborations between employers, staff and students, providing considerable efficiencies in working/learning and enabling engagement with a much broader range of employers globally and including employers other than large companies such as SMEs, voluntary organisations and even supply chains of companies.

Connected curricula require institutional policies, plans and resources to be joined-up

In order to successfully implement connected curricula, institutions need to provide appropriate and joined-up policies, plans and resources. The next [section 9](#) (Institutions can better prepare for supporting good practices in technology for employability in five key ways) explores this area in more detail.

7.2 Lifelong employability in a digital world needs to be a core student capability - with students encouraged to take ownership early on

HE and FE need to prepare students for taking ownership of identifying, developing and presenting their employability skills and capabilities early on - using technology

There seem to be two broad extremes with respect to development of employability. At one extreme, it is more an end-of-programme activity when students start to think about getting a job and are supported by careers department with advice, guidance and toolkits that typically help students to review, plan and develop their employability.

At the other extreme, employability is more holistically built-in to connected curricula right from the start of a programme (and sometimes pre-induction) and there is greater emphasis on students taking ownership of developing their employability to align with what employers are looking for. The University of Keele case study ([Appendix 3D](#)) and the University of Northampton case study ([Appendix 3B](#)) are excellent examples of top-down approaches to engendering student ownership of this agenda right from the beginning of a programme of study. Both case studies illustrate how technologies support this approach. The Gazelle Group, in their publication [Further Education Re-imagined](#), have the same declared intent. Many course leaders list the kind of employment prospective learners can assume as a result of successfully completing a course.

In practice, most institutional approaches lie somewhere between the two extremes, and we did not always identify fully aligned approaches between careers departments and programme teams. This reflects the not atypical cultural barriers that can exist between academic departments and corporate services teams.

Lifelong employability is a key employability capability in its own right

Going back fifteen years, employability, whilst not being the current hot topic, was nonetheless being articulated by employers and employer groups in certain sectors. In STEM subjects the capabilities/skills were fairly consistently defined. However, moving forward to more recent times (and with the expansion of tuition fees, the 2008 crash and the rapid rise of technology), these definitions are fast moving. They are likely to keep moving, with different emphases. Even within an employer, management may emphasise different skills, for example, some may favour soft attributes rather than hard-nose skills or competencies. McDonalds is leading a coalition of like-minded employers and agencies on campaigning for greater emphasis put on the development of soft skills for employability ([Backing SoftSkills Campaign](#)). It is therefore not sufficient for students to enter employment with a fixed idea of what employers are looking for. They must be equipped with the know-how and motivation to continually research and review what employers are looking for in their chosen area of work and career.

This approach would require students to:

- » horizon scan/seek intelligence on jobs/employers/ careers and not just rely on nuggets of information fed from careers departments
- » identify what types of employment match-up to their aspirations, goals, needs and values
- » research what skills are currently being prioritised
- » critically evaluate their own capabilities and attributes with support from peers and mentors
- » plan and record development of their personal, social and professional capabilities to match those prioritised by their targeted employers and professional bodies e.g. via CPD processes and systems

This can be achieved through research, self-diagnostics tools, e-learning, creative problem-solving and experiential learning. A further important part of the mix is the capability for students to articulate and communicate their skills and attributes to employers. They need to align with what each employer is looking for and uniquely position their skills for a specific role in order to effectively engage with and influence them.

All this can then help students to better make decisions on their careers throughout their careers when they are not supported by a careers department and not just when they complete or graduate. This process of taking ownership aligns with the trend for curricula to adopt student self-directed learning/assessment approaches. It therefore brings together the self-directed concept for both lifelong learning and lifelong employability.

Self-directed personal and professional learning (planning, reflection, managing, recording, review) can be effectively supported by e-portfolios

Section 7.1 highlighted how connected curricula require a learner-centred connected technology infrastructure using e-portfolio technologies such as PebblePad, Mahara and WordPress, that can be integrated with VLEs and used to efficiently support (formative) assessment for learning, employability development and longitudinal progression throughout a programme. Students can use a variety of devices like tablets and smartphones to capture and record evidence of learning/employability to e-portfolios.

There are several excellent sector resources in relation to implementing e-portfolios which have been detailed in **section 5.4** and further resources are detailed in the **Jisc Quick Guide** to e-portfolios.

These resources have been created based on extensive case study-based research and present a powerful argument for adopting e-portfolios in UK higher and further education, identifying a range of educational and efficiency gains (see **section 5.4** for details).

Digital feedback and engagement with a variety of stakeholders including employers can be facilitated by technologies such as e-portfolios

E-portfolios can often be thought of as a store for evidence of student learning, however they can be used to facilitate feedback and engagement between students and a variety of stakeholders such as employers, tutors, mentors, peers and so on – all of whom can support the student through critiques, advice, guidance and helping them on the path to develop their self-regulatory capabilities.

Furthermore, students can use e-portfolios to showcase their 'rounded selves' to employers where attributes, mindsets and characterisation can be better demonstrated and complementing competences.

Students can be provided with technology-enhanced self-diagnostics and development resources to aid self-review and development

As part of encouraging students to take ownership of their lifelong employability, institutions can provide tools to help students with self-review, planning, teamwork, communication, inter-personal and self-management. Such tools typically include self-diagnostics tools as well as development tools. A recent example is being developed by a staff-student partnership at Henley Centre for Entrepreneurship, Henley Business School. The product is called **Potential.ly** and it is focused on improving team-based collaborative learning through development of interpersonal and employability skills. It includes an app to develop student self-awareness of interpersonal skills which helps students to relate more effectively to each other and improve their effectiveness in working with others. The app provides a report for each student which gives them an analysis across 15 different behavioural domains, from creative thinking and emotional intelligence to decision making capability and communication preferences. The Henley team have secured funding and support from the Jisc **Summer of Student Innovation** initiative. In FE and Skills, The Mindset and MyWorkSearch tool (see **Appendix 8**) performs a similar function for learners and their providers.

7.3 Technology is used to underpin student employability development with clearly identified rationale, benefits to stakeholders and adoption of good practices

Technology-enhanced authentic and simulated learning experiences

The table below highlights technologies that can be used to support authentic and simulated learning experiences.

Technology use	Technology-enhanced authentic and simulated learning experiences
	<ul style="list-style-type: none"> » Active and real world learning experiences - supported by technologies - that help to develop employability skills » Simulated experiences
Technologies	<ul style="list-style-type: none"> » Wiki » Simulations and games » Specialist systems » VLE » Cloud collaboration tools » Social media » Vocational-specific technologies e.g. kitchens, garages

Typical benefits of using such technologies for learners, employers and institutions are given in [Appendix 5](#).

Indicators of good practices in technology-enhanced authentic and simulated learning experiences are given in [section 8.2](#).

Digital communications and engagement with employers

The table below highlights technologies that can be used to support digital communications and engagement with employers.

Technology use	Digital communications and engagement with employers
	<ul style="list-style-type: none"> » Researching, identifying and developing contacts and relationships with employers » Developing digital and employability identity » Developing digital collateral as evidence of student rounded self » Showcasing student rounded self to employers and personal clients » Sharing industry identified problems for learning opportunities
Technologies	<ul style="list-style-type: none"> » Social media » Multi-media » Mobile devices » Cloud collaboration tools » Mapping Portfolios for Apprenticeships and bespoke short training

Typical benefits of using such technologies for learners, employers and institutions are given in [Appendix 5](#).

Indicators of good practices in digital communications and engagement with employers are given in [section 8.2](#).

Technology-enhanced lifelong learning and employability

The table below highlights technologies that can be used to support technology-enhanced lifelong learning and employability.

Technology use	Technology-enhanced lifelong learning and employability <ul style="list-style-type: none"> » Self-directed personal and professional learning (planning, reflection, managing, recording, review) – supported by technology » Digital feedback and engagement with a variety of stakeholders including employers to help develop learner self-regulatory skills » Employer-supported/ related assessment for learning
Technologies	<ul style="list-style-type: none"> » e-portfolios » Personal learning spaces » Online badges

Typical benefits of using such technologies for learners, employers and institutions are given in [Appendix 5](#).

Indicators of good practices in technology-enhanced authentic and simulated learning experiences are given in [section 8.2](#).

Technology-enhanced employability skills development

The following table highlights technologies that can be used to support technology-enhanced employability skills development.

Technology use	Technology-enhanced employability skills development <ul style="list-style-type: none"> » Learner skills diagnostics » Technology-enhanced development for skills gaps » Computer-aided assessment
Technologies	<ul style="list-style-type: none"> » Online diagnostics » VLEs » Open Educational Resources (OERs) » E-learning content including e-books and multimedia content » Computer-aided assessment including electronic management of assessment

Typical benefits of using such technologies for learners, employers and institutions are given in [Appendix 5](#).

Indicators of good practices in technology-enhanced employability skills development are given in [section 8.2](#).

Employer-focused digital literacy development

The table below highlights employer-focused digital literacy development together with indicators of good practices.

Technology use	Employer-focused digital literacy development <ul style="list-style-type: none"> » Developing student technology-enhanced employability skills
Technologies	<ul style="list-style-type: none"> » All

Typical benefits of using such technologies for learners, employers and institutions are given in [Appendix 5](#).

Indicators of good practices in employer-focused digital literacy development are given in [section 8.2](#).

8. Draft indicators of good practice in relation to incorporating employability into programme design and delivery have been developed

As a result of the study, draft indicators of good practices in relation to employability have been developed, which can potentially be used in a number of ways e.g. benchmarking toolkits, diagnostics activities. These have been focused in two areas:

- » Good practices in programme design and delivery to incorporate employability
- » Good practices in programme design and delivery to incorporate technology for employability

8.1 Good practices in programme design and delivery to incorporate employability

Strictly speaking, this report is focused on technology for employability however, as with many aspects of using technology in curriculum design and delivery, it is impossible to delineate the use of technology from curricula design and delivery, therefore we have drafted some indicators of good practices for incorporation of employability into programme design and delivery, covering the following three dimensions:

- » Connected curricula
- » Employer engagement
- » Student personal, professional and academic development

Theme	Indicators of good practices
Connected curricula Connected curricula approaches are adopted to incorporate employability into programme design	<ul style="list-style-type: none"> » Employability (however it is defined) is embedded into curricula learning outcomes and assessment » Employability development commences at the beginning of the student journey » Curricula adopt assessment for learning approaches with strong emphasis on continual formative assessment, feedback and action on feedback – relating to both discipline and employability topics » Formative assessment and feedback requires students to reflect on and articulate their evolving employability, in the context of the programme learning outcomes » Curricula design requires students to take ownership and self-direct their lifelong employability from early on in their programmes of study and prepare them for lifelong working and learning where employability skills and use of technology will be ever-changing

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8. Draft indicators of good practice in relation to incorporating employability into programme design and delivery have been developed

Theme	Indicators of good practices
Employer engagement Employers are engaged with programme design and delivery	<ul style="list-style-type: none"> » Curricula provide students with opportunities for engaging with employers for example, in working on real-world authentic issues, and assessment, feedback and action on feedback relates directly to such engagement; where it is not feasible or practical to provide such authentic learning experiences, technology solutions e.g. simulations, virtual reality might be an alternative approach » Where appropriate employers are engaged as student mentors and provide employer-related feedback » Employers are involved in curricula design, including supporting the development of learning outcomes and assessment approaches that incorporate student employability
Student personal, professional and academic development Programme design incorporates supported student personal, professional and academic development	<ul style="list-style-type: none"> » Programme design includes: <ul style="list-style-type: none"> › Planning personal/professional/academic development › Recording evidence of employability › Continual formative reflection on personal, professional, academic development and alignment with learning outcomes › Communications and engagement between the student and stakeholders involved in their development e.g. employers, mentors, assessors, tutors, peers › Showcasing development for formative assessment points. › Showcasing development and engaging with external stakeholders e.g. employers » Students are provided with suitably trained personal tutors who provide the students with appropriate support for their personal, professional and academic development. Such support is recognized as part of staff workloads

8.2 Good practices in programme design and delivery to incorporate technology for employability

Indicators of good practices for programme design and delivery to incorporate technology for employability are given for the following five dimensions of technology use:

- » Technology-enhanced authentic and simulated learning experiences
- » Digital communications and engagement with employers
- » Technology-enhanced lifelong learning and employability
- » Technology-enhanced employability skills development
- » Employer-focused digital literacy development

Dimension	Indicators of good practices
Technology-enhanced authentic and simulated learning experiences <ul style="list-style-type: none"> » Active and “real world” learning experiences - supported by technologies - that help to develop employability skills » Simulated experiences 	<ul style="list-style-type: none"> » Technology is used to allow students to engage with employers, other institutions and bodies world-wide e.g. to support authentic learning and real-world experiences in a global digital world » Technology is used to allow large cohorts of students to collaboratively engage with employers and authentic learning opportunities including with a broader range of employers such as SMEs and employer networks » Technology is used to underpin learning/employability development activities and support monitoring/QA of such activities » Simulated authentic experiences are used where appropriate e.g. for building capacity cost-effectively » Data from authentic learning and assessment activities is used for data analytics to help inform student progression and as part of programme continuous improvement - implemented in conformance with data analytics governance
Digital communications and engagement with employers <ul style="list-style-type: none"> » Researching, identifying and developing contacts and relationships with employers » Developing digital and employability identity » Developing digital collateral as evidence of student rounded self » Showcasing student rounded self to employers and personal clients 	<ul style="list-style-type: none"> » Students are required to develop their digital collateral (evidence) to showcase their ‘rounded selves’ to employers and highlighting their experience, skills, knowledge and attributes » Learning/employability development activities require students to research and engage digitally and build relationships with employers » Learning/employability development activities require students to develop their digital reputation (identity) to include employability and digital skills » Learning/employability activities support students in engaging with external stakeholders e.g. alumni, industry experts

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8. Draft indicators of good practice in relation to incorporating employability into programme design and delivery have been developed

Dimension	Indicators of good practices
<p>Technology-enhanced lifelong learning and employability</p> <ul style="list-style-type: none"> » Self-directed personal and professional learning (planning, reflection, managing, recording, review) - supported by technology » Digital feedback and engagement with a variety of stakeholders including employers to help develop learner self-regulatory skills » Employer-supported/ related assessment for learning 	<ul style="list-style-type: none"> » Personalised learning spaces are used to efficiently support (formative) assessment for learning, employability development and longitudinal progression throughout the programme » Students are required to use personal/owned learning spaces to efficiently support planning, reflective practice, managing, evidencing of learning and articulation of employability skills » Students are encouraged to exploit a variety of devices including mobile/multi-media to aid recording and evidencing of learning including in practice settings » Students are required to engage with a variety of stakeholders such as employers, mentors and assessors using their personal learning spaces, including as part of assessment and feedback processes
<p>Technology-enhanced employability skills development</p> <ul style="list-style-type: none"> » Learner skills diagnostics » Technology-enhanced development for skills gaps » Computer-aided assessment 	<ul style="list-style-type: none"> » Students are required to adopt a self-directed approach to using online skills diagnostic tools to review and plan their employability skills development. » Students have access to a broad range of online skills development resources to help them address their skills gaps, including use of OERs » Assessment of employability skills is achieved using computer-aided assessment and electronic management of assessment systems
<p>Employer-focused digital literacy development</p> <p>Developing student technology-enhanced employability skills</p>	<ul style="list-style-type: none"> » Digital literacies are articulated and aligned within an employability skills framework like highlighting digital skills required for effective communication and team working » Curricula and employability skills development activities require students to apply their digital literacies » Students are encouraged to adopt creative approaches to using technology for engaging with employers (and vice versa) » Curricula encourage digital entrepreneurialism » Students as digital change agents are empowered to address employer business issues

9. Institutions can better prepare for supporting good practices in technology for employability in five key ways

Most of the excellent practice we have found is either occurring in only parts of a larger organisation or represents a good service or idea that is not being properly exploited. Institutional improvement can therefore be achieved by firstly, broadening good practice through organisation-wide effort; secondly, by better employing what is available but not fully taken up and thirdly, by creating the conditions and incentives for wider institutional adoption.

Headline messages

Idea	Details
<p>1 Embedding and aligning technology for employability and its development into policies, plans and processes</p>	<ul style="list-style-type: none"> » Institutional strategies and policies require programme teams to enhance curricula design using a connected curricula approach (where connected curricula are described in section 8.1) » Institutional strategies and policies require programme teams to fully support student personal, professional and academic development throughout a programme using learner-centred technologies (as described in section 8.1) » Institutional strategies and policies require students to be provided with personal tutors focused on the their personal, professional and academic development » Faculties, schools and departments are required to embrace connected curricula in their business/operational polices and plans which are monitored and evaluated centrally » Institutional strategies and policies in respect of technology infrastructure, tools and resources meet the needs for learner-centred teaching, learning and assessment » Institutional strategies and policies place emphasis on effective employer engagement at the local level » In HE, consideration is given to integrating technology and processes for the HEAR with student personal learning
<p>2 Professional development of staff in relation to employability and technology for employability</p>	<ul style="list-style-type: none"> » Professional development of staff incorporates a range of topics focused on development of student employability and adoption of technology tools to facilitate this » Staff professional development is supported through activities such as peer review and communities of practice, in recognition of the centrality of teachers sharing ideas and practice as means of effecting change » Teachers need to take responsibility for maintaining their own employability

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8. Draft indicators of good practice in relation to incorporating employability into programme design and delivery have been developed

Idea	Details
3 Technology tools, resources, infrastructure and support for employability and student-centred flexible curricula	<ul style="list-style-type: none"> » Institutions regularly review, benchmark and evaluate their technology infrastructure, tools and resources » A one-stop-shop support service is provided to faculties, schools, departments and programme teams - that brings together the various departmental support teams such as IT, Teaching, Learning & Assessment (TL&A), Technology-enhanced Learning (TEL), employability, inclusion » Resources are provided for staff to self-review, plan and develop their skills, knowledge and capabilities in relation to student employability and use of technology » In HE, consideration is given to integrating technology and processes for the HEAR with student personal learning technologies
4 Improving communication and collaborations to drive change in technology for employability	<ul style="list-style-type: none"> » Faculties, schools, departments and programme areas in FE (i.e. at the local level) undertake a range of communications and engagement activities » Students as change leaders and innovators initiatives focus on employability and employer engagement » Encourage alumni to offer mentoring through on-line technology and in FE, use apprentices to talk to prospective apprentices about the world of work
5 Quality assuring and continuous improvement through employability data monitoring, analytics and review	<ul style="list-style-type: none"> » QA processes are fully defined and communicated » Data monitoring, analysis and evaluation processes are set up » Analysis of trends and individual student performance data informs students and staff in (formative) approaches for enhancing student performance » In FE consider how to demonstrate employability credibility in line with the Common Inspection Framework

9.1 Embedding and aligning technology for employability (and employability development) into polices, plans and processes

Institutional strategies and policies require programme teams to enhance curricula design using a connected curricula approach

The connected curricula idea builds on a range of approaches such as UCL's **Connected Curriculum** initiative, the University of Greenwich Greenwich Connect initiative (see **Appendix 3A**) and David Nicol's **principles of assessment**.

Institutions should consider incorporating the following into aligned strategies and polices, such as teaching, learning and assessment, student experience, employability and digital literacies:

- » Employability, however it is defined, is embedded into curricula learning outcomes and assessment
- » Employability development commences at the beginning of the student journey
- » Curricula adopt 'assessment for learning' approaches with strong emphasis on continual formative assessment, feedback and action on feedback - relating to both discipline-specific and employability topics
- » Formative assessment and feedback require students to reflect on and articulate their evolving employability, in the context of the programme learning outcomes
- » Curriculum design requires students to take ownership and self-direct their lifelong employability from early on in their programmes of study. It prepares them for lifelong working and learning where employability skills and use of technology will be ever-changing

- » Curricula provide students with opportunities for engaging with employers for example, in working on real-world authentic issues, and assessment, feedback and action on feedback relates directly to such engagement. Where it is not feasible or practical to provide such authentic learning experiences, technology solutions like simulations and virtual reality might be an alternative approach
- » Where appropriate employers are engaged as student mentors and provide employer-related feedback
- » Methods of collaborating and reflecting and team working should reflect wider methods of commercial working
- » The administration of learning and interacting with it by learners should be industry standard

Institutional strategies and policies require programme teams to fully support student personal, professional and academic development throughout a programme using learner-centred technologies

Strategies and policies such as teaching, learning and assessment, student experience, employability and digital literacies can embrace learner-centred technologies for:

- » Planning personal/professional/academic development
- » Recording evidence like digital artefact
- » Continual formative reflection on personal, professional, academic development and alignment with learning outcomes
- » Communications and engagement between the student and stakeholders involved in their development such as employers, mentors, assessors, tutors, peers
- » Showcasing development for formative assessment points
- » Showcasing development and engaging with external stakeholders including employers

Institutional strategies and policies require students to be provided with personal tutors focused on their personal, professional and academic development

Institutional strategies and policies require students to be provided with (suitably trained) personal tutors who provide the students with appropriate support for their personal, professional and academic development and where such support is recognised as part of staff workload allocation.

Faculties, schools and departments are required to embrace connected curricula in their business/operational policies and plans which are monitored and evaluated centrally

The connected curricula concept requires ownership at the local level. Therefore faculties, schools and departments should be required to incorporate this into their policies and plans. These efforts should be monitored and evaluated centrally.

Institutional strategies and policies in respect of technology infrastructure, tools and resources meet the needs for learner-centred teaching, learning and assessment

Institutional strategies relating to technology (such as IT and management information systems) should include a focus on learner-centred teaching, learning and assessment including learner-owned personal learning spaces.

Institutional strategies and policies place emphasis on effective employer engagement at the local level

Institutions should place emphasis on effective employer engagement at the local level of faculty, school, department and discipline. They should also aim to engage employers and sector and professional bodies in student employability development.

In HE, consideration is given at policy level to integrate HEAR processes to include formative teaching, learning and assessment

Institutional HEAR systems and processes tend to be approached mostly from a summative perspective. There could be significant benefits to integrating HEAR processes in formative teaching, learning and assessment processes.

9.2 Professional development of staff in relation to employability and technology for employability

Professional development of staff incorporates a range of topics focused on development of student employability and adoption of technology tools to facilitate this. We suggest the following topics:

- » Development of staff digital literacies and their application to student employability
- » Good practices in designing and delivering connected curricula which embrace the concepts described above (e.g. embedding employability into programme learning outcomes, curricula design and assessment)
- » Good practices in development of student employability
- » Good practices in employer engagement
- » Good practices in application of learner-centred technologies such as e-portfolios
- » Good practices in personal tutoring
- » Good practices in use of technology tools and resources for self-review and development

Evidence shows that if e-portfolios are embedded for staff use they better understood the potential for students. Those running staff professional development programmes including new tutor training could consider adopting learning technologies as integral elements of such programmes. This might include e-portfolios to support staff professional practice as exemplified in the [Thanet College video case study](#) (March 2012) and the University of Cumbria [introduction video of staff use](#).

Staff professional development is supported through activities such as peer review and communities of practice. This is in recognition of teachers sharing ideas and practice as means of effecting change

Staff professional development in relation to employability and related technology can be approached using peer support. This might include activities such as:

- » Peer review practices i.e. formal processes for staff to evaluate the practices of their colleagues, including approaches such as **appreciative enquiry**
- » Communities of practice, including online communities and engaging externally, for example with other institutions

In FE, reflective thinking, recording and sharing with colleagues remains the preferred approach to CPD. The proposed FE Academy is well positioned to support this approach.

Teachers need to take responsibility for maintaining their own employability

The principles outlined in this report for student employability may equally be applied to teachers.

9.3 Technology tools, resources, infrastructure and support for employability and student-centred flexible curricula

Institutions regularly review, benchmark and evaluate their technology infrastructure, tools and resources

Institutions should regularly review their technology infrastructure, tools and resources and evaluate how effective they are in meeting the needs and demands for learner-centred teaching, learning and assessment and take appropriate action to provide suitable learner-centred tools and infrastructure. We expect this to show increasing importance of reliable and responsive wifi networking.

We stop short of recommending outright that institutions should adopt personal learning spaces incorporating

e-portfolios, however we anticipate that the process of reviewing, benchmarking and evaluating technology infrastructure and tools in the light of supporting student centric learning and employer engagement will likely make the case for such technologies (see **implementation guidance** for e-portfolios).

A one-stop-shop support service is provided to faculties, schools, departments and programme teams

A one-stop-shop support service is provided to faculties, schools, departments and programme teams which brings together all the institutional enhancement agendas such as connected curricula, assessment for learning, employability, employer engagement, work-based learning, Recognition of Prior Learning (RPL)/Accreditation of Prior Experiential learning (APEL), digital literacies, authentic learning experiences.

Resources are provided for staff to self-review, plan and develop their skills, knowledge and capabilities in relation to student employability and use of technology

A range of resources, including online diagnostics and e-learning materials, should be provided to staff to aid their continuing professional development in relation to student employability and use of technology.

In HE, consideration is given to integrating technology and processes for the HEAR with student personal learning technologies

Institutional HEAR systems and processes tend to be approached mostly from a summative perspective. There could be significant benefits in integrating HEAR technologies with student-centric technologies so that they can be used in formative teaching, learning and assessment processes.

8. Draft indicators of good practice in relation to incorporating employability into programme design and delivery have been developed

9.4 Improving communication and collaborations to drive change in technology for employability

Faculties, schools, departments and programme areas in FE undertake a range of communications and engagement activities

The following activities are recommended for faculties, schools and departments to improve communications and engagement:

- » An industry advisory steering group (or similar) is set up to support greater employer engagement
- » Networks (real and virtual) of alumni and employers are set-up to engage alumni with student employability development through mentoring
- » A communications and engagement plan is developed and implemented in respect of engagement with employers and employer, sector and professional bodies

Students as change leaders and innovators initiatives focus on employability and employer engagement

Many institutions have set-up staff-student partnerships to focus on educational innovation. These may be extended to include employer and employer, sector and professional bodies as part of the partnership, with a view to focusing on:

- » Reviewing and developing student employability
- » Driving innovation in developing student employability particularly with using technology for employability
- » Identifying opportunities (e.g. problem-solving) for engaging students and staff with employers as part of student learning and personal and professional development – including using technology to support this

Encourage alumni to offer mentoring through on-line technology and in FE, use apprentices to talk to prospective apprentices about the world of work

Those students who have recently left institutions are well placed to offer advice and guidance to current students.

They might advise in areas such as employability, employment and how to engage effectively with employers. They may also discuss with current learners how online technologies like social media can offer opportunities to facilitate such engagement.

9.5 Quality assuring and continuous improvement through employability data monitoring, analytics and review

QA processes are fully defined and communicated

QA processes are fully defined and communicated to staff and students in respect of connected curricula including QA of feedback, personal tutoring and adoption of learner-centred technologies.

Data monitoring, analysis and evaluation processes are set up

Processes are set up to:

- » Support quality assurance in relation to student employability for example, performance, progression and impact
- » Help shape continuous improvement e.g. in programme design, employer engagement, approaches to development of student employability skills
- » Feed into institutional key performance statistics
- » Support evaluation of impact of student employability development approaches
- » Support quality assurance in respect of advice and support services (see [Matrix QA standard](#)).

Analysis of trends and individual student performance data informs students and staff in (formative) approaches for enhancing student performance

Processes and systems should be put in place which analyse trends and individual student performance data to aid formative approaches for enhancing student performance.

10. Sector bodies can potentially support institutions in six key ways

Six ways that sector bodies can potentially support institutions with technology for employability have been identified. It is recommended that educational sector bodies work in collaboration to ensure educationally coherent approaches in the sector. By sector bodies we mean for example (and not exclusively) Jisc, the Higher Education Academy (HEA), Centre for Recording Achievement (CRA), Quality Assurance Agency for Higher Education (QAA), Association for Learning Technology (ALT), Association of Colleges (AoC) and National Union of Students (NUS). The purpose of such collaborative approaches is to ensure that technology for employability is not treated as something separate from employability in general - this report has clearly identified that technology and student digital literacies must be an integral element of curriculum design, delivery and assessment for learning and presentation of learning in the round (the connected curriculum). Therefore it is incumbent upon sector educational agencies to ensure joined-up approaches that provide a coherent picture to institutions.

Headline messages - six key ways for sector bodies to support institutions

Idea	Details
<p>1 Benchmarking Develop benchmarking toolkits that reflect effective practices and support institutions in collaborative benchmarking</p>	<ul style="list-style-type: none"> » Develop a benchmarking (self-review) toolkit for programme teams, building on existing sector toolkits » Develop an institutional benchmarking (self-review) toolkit about institutional preparedness for technology for employability, building on existing sector toolkits » Use these benchmarking toolkits to underpin institutional support services (see idea 5) such as benchmarking, consultancy and coaching » Ensure educational agencies collaborate to ensure technology is an integral part of generic employability frameworks and toolkits » Facilitate a UK-wide benchmarking programme addressing employability and technology for employability, led by a collaboration of educational agencies
<p>2 Sector resources Develop coherent sector resources targeted to different stakeholder needs that inform and enable stakeholders to develop student employability</p>	<ul style="list-style-type: none"> » Review existing available resources with a view to creating a one-stop-shop approach that can be contextualised and personalised for different stakeholder groups and include specialist areas such as technology for employability for special needs students » Provide resources that help institutions to visualise exemplar good practices such as with student portfolios and use of social media » Consider embedding the connected curricula in all resources » All resources should clearly communicate the rationale for using technology for employability, highlighting the benefits to different stakeholders and with a major focus on impact of employability initiatives and policies » Develop processes supported by technology to sustain the capturing and communication of case studies/vignettes of good practices, using many-different media approaches » Ensure educational agencies align and link resources with their resources, frameworks and toolkits

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Idea	Details
<p>3 Sector communications and engagement Facilitate improved sector communications and engagement with respect to student employability</p>	<ul style="list-style-type: none"> » Develop a communications and engagement plan targeted at a range of stakeholders which focuses on technology for employability » Explore the potential for a collaborative approach to communications and engagement with institutions and a range of stakeholder groups, (including educational agencies) in respect of employability and related technology
<p>4 Sector online collaborative spaces Develop online collaborative spaces to support engagement between sector stakeholders</p>	<ul style="list-style-type: none"> » Support the development of online spaces to support new and creative collaborations between staff, students, alumni, employers » Negotiate with institutions that have already created such online collaborative spaces with a view to opening them up to other institutions nationally
<p>5 Institutional support services Provide a range of institutional support services that enable institutions to achieve measurable impact in enhancing student employability</p>	<ul style="list-style-type: none"> » Provide consultancy, coaching and training services to institutions in the area of technology for employability/self-employability » Ensure any consultancy utilises fully the resources available from sector bodies, including benchmarking and diagnostic toolkits as well as information, support and guidance resources
<p>6 Joined-up related work areas Identify synergies with other areas of work across the sector and develop a joined-up approach for student employability and use of technology across all activities</p>	<ul style="list-style-type: none"> » Ensure that the findings and implications of this report are explored across related work areas such as exploration into digital literacies, students as change agents, and learning analytics

Appendix 1 - Quick read report



Appendix 1 - Quick read report

This appendix is a 'quick read report' – a summary of the headline messages from each section. The study was commissioned by Jisc for the following reasons:

Student employability is becoming increasingly important:

- » Employability is becoming increasingly important in policy and strategy across the HE, FE and skills sectors
- » Qualifications are increasingly seen, particularly in FE and skills, as a stepping stone to employment from which economic independence and active citizenship flow. The qualification is no longer the end point
- » There is evidence of an 'employability gap' in the skills that students are starting with on day one of employment and the skills that employers are expecting from their new employees. However, views vary on what this gap means in practice

"Businesses look first and foremost for graduates with the right attitudes and aptitudes to enable them to be effective in the workplace – nearly nine in ten employers (89%) value these above factors such as degree subject (62%)"

CBI/Pearson Education and Skills Survey 2015
 (CBI / Pearson, 2015)

An increasing appreciation that technology for employability can provide many potential benefits to students, institutions and employers:

- » There is evidence that technology can be a significant enabler, but it's not clear how institutions are using technology most effectively to support learners
- » Digital savvy graduates are essential for shaping tomorrow's entrepreneurial activities, but digital literacies aren't well articulated in relation to employability skills

The study therefore provides an initial exploration of the role of technology in supporting the development of student employability skills.

"Managers, entrepreneurs, and business executives must have e-competences to grow, export and be connected to the global digital markets. In a digital economy, e-leadership skills are essential."

Michel Catinat, Head of Unit "Key Enabling Technologies and ICT" at DG Enterprise and Industry, European Commission (European Commission, 2015)

20 case studies were carried out across the HE, FE and skills sectors:

HE	FE and skills
University of Greenwich	City of Glasgow College
University of Northampton	South West College, NI
University of Edinburgh	Loughborough College
Keele University	Portland College
University of Southampton	Reading College
Birmingham City University	S&B Automotive Academy, Bristol
Glasgow Caledonian University	South Devon College
University of London	The Mindset
Bath Spa University	The Welsh Baccalaureate
Staffordshire University	St Helens College

The full case studies are detailed in **Appendix 3 (HE case studies)** and **Appendix 4 (FE and skills case studies)** and case study vignettes are detailed in **Appendix 7 (HE)** and **Appendix 8 (FE)**.

The study identified four key challenges:

Challenge	Details
1 Institutions are on various points of the continuum towards student employability maturity	<ul style="list-style-type: none"> » Different visions of maturity and variation in approaches to developing employability skills, capabilities and attributes exist » Students can learn employability skills from a broad range of experiences but there must be processes in place for them to reflect on, articulate and evidence the learning » Authentic experiences can develop skills, but depend on the degree of 'authenticity' and the degree to which students learn/reflect on them and articulate them » Many creative uses of technology, but 'embedding' remains elusive to many institutions (including at local levels e.g. faculty, school, department) » Embedding employability/ attributes into curricula and assessment may be 'ideal', but there are challenges » In many institutions, there appears to be a lack of joined-up approaches between academic departments and corporate careers/employability services » FE very focused on 'line of sight' to employment, rather than employability or self-employability » There are more similarities than differences between HE, FE and skills sectors
2 Technology is under exploited for employability	<ul style="list-style-type: none"> » Variation in practices and understanding of potential of technologies for employability - by institutions, students and employers - particularly with e-portfolios and social media » Institutions could do a lot more to unleash student creativity in using digital networks/media to engage with employers, alumni and other stakeholders » Digital literacies are not well articulated in relation to employability skills » Employers and HE/FE generally have low aspirations in relation to 'digital entrepreneurialism' » Growing band of knowledge in terms of what technology infrastructure is required for progressive employability development and 'connected curricula' » Not much evidence of use of data collection/analytics to support student employability, QA and QE » Possibility of aligning e-portfolio usage with development of HEAR » FE has a well-established use of e-portfolios to map vocational competencies (hard skills) and in supporting apprenticeships

Challenge	Details
3 Insufficient engagement and partnership working with employers	<ul style="list-style-type: none"> » Core employability skills, capabilities and attributes are typically being addressed, with variations, but they are continually evolving » The degree to which employers (large and small) are involved in defining and developing employability skills remains unclear » Not much evidence of institutions evaluating impact of employability policies/ initiatives with employers despite destination surveys » Not always easy to identify truly authentic learning experiences with employers for ALL students, though there is much potential for student cohorts to work in partnership with employers on real and challenging employer/sector problems » HE in particular needs to develop greater partnership working with employers and alumni e.g. curriculum design, mentoring, assessments » HE and FE need to find ways of improved working with a broader range of employers e.g. SMEs » There is potential for 'students as partners and innovators' initiatives to be focused on student employability and raising the profile of digital entrepreneurialism with employers » There is potential for HE and FE to better collaborate in joined up approaches to technology for employability
4 Variability in resources to support institutions in using technology for employability	<ul style="list-style-type: none"> » Despite excellent resources existing in relation to using e-portfolios, there is a lack of awareness of them and their value to institutions; they could be further developed with guidance to support students in effective use » There is insufficient emphasis in sector resources on making the case for using technology in employability and the importance of student digital literacy as an employability capability in its own right » Guidance on digital literacies could be better contextualised and articulated in relation to employability skills » There are minimal resources relating to digital entrepreneurialism (digital enterprise) » There is insufficient guidance on effective use of social media to support employability » There is potential for greater adoption of multimedia communications approaches as part of guidance materials e.g. using screencasts, videos » Resources on their own are insufficient - institutions need to be supported in using them effectively for example through consultancy, mentoring, coaching, collaborative benchmarking

Further details are provided in [section 5](#).

The study found that institutions are using technologies in five key ways to support development of student employability providing significant benefits to students, employers and institutions:

Technology use	Details
1 Technology-enhanced authentic and simulated learning experiences	<ul style="list-style-type: none"> » Active and real world learning experiences - supported by technologies - that help to develop employability skills » Simulated experiences that help to overcome issues such as health and safety and large costs issues of authentic learning » FE provides real environments in which to learn like kitchens, workshops, garages and salons that include vocational standard technologies
2 Digital communications and engagement with employers including development of digital identity	<ul style="list-style-type: none"> » Researching, identifying and developing contacts and relationships with employers » Developing digital and employability identity » Developing digital collateral as evidence of student 'rounded self' » Showcasing student 'rounded self' to employers in order to show distinctiveness » Sharing industry identified problems for learning opportunities develops professional relationships
3 Technology-enhanced lifelong learning and employability	<ul style="list-style-type: none"> » Self-directed personal and professional learning (planning, reflection, managing, recording, review) - supported by technology » Digital feedback and engagement with a variety of stakeholders including employers to help develop learner self-regulatory skills » Employer-supported/ related assessment for learning
4 Technology-enhanced employability skills development	<ul style="list-style-type: none"> » Learner skills diagnostics » Technology-enhanced development for skills gaps » Computer-aided assessment » Institution audit of organisational and course preparedness to support development
5 Employer-focused digital literacy development	<ul style="list-style-type: none"> » Developing student technology-enhanced employability skills » Developing 'digital entrepreneurialism'

Further details are provided in [section 6](#). The benefits to key stakeholders of using technology for employability are identified in [Appendix 5](#).

Three ways programme teams can enhance practices are recommended:

Idea	Details
<p>1 Maturity is probably best developed through 'connected curricula' - embedding employability in curriculum and assessment combined with authentic experiential learning and employer engagement and underpinned by technology</p>	<ul style="list-style-type: none"> » Some excellent examples of 'connected curriculum' where employability is embedded into curricula and assessment » 'Connected curricula' inextricably linked to assessment for learning approaches and authentic assessment » Curricula and assessment must incorporate student articulation of their experiential learning and employability skills » Connected curricula map well to the QAA Flexible Curricula framework (http://bit.ly/1jTtu1e) » Connected curricula requires a learner-centred connected technology infrastructure, programme-wide student support, employer engagement and joined-up institutional policies, plans and resources
<p>2 'Lifelong employability in a digital world' needs to be a core student capability - with students encouraged to take ownership early on</p>	<ul style="list-style-type: none"> » HE and FE need to prepare students for taking ownership of identifying, developing and presenting their employability skills and capabilities early on - using technology » 'Lifelong employability' is a key employability capability in its own right » Self-directed personal and professional learning (planning, reflection, managing, recording, review) can be effectively supported by e-portfolios » Digital feedback and engagement with a variety of stakeholders including employers can be facilitated by technologies such as e-portfolios » Students can be provided with technology-enhanced self-diagnostics and development resources to aid self-review and development
<p>3 Technology is used to underpin student employability development with clearly identified rationale, benefits to stakeholders and adoption of good practices</p>	<ul style="list-style-type: none"> » Authentic and simulated learning experiences » Digital communications and engagement with employers » Lifelong learning and employability » Employability skills development » Employer-focused digital literacy development

Further details are provided in [section 7](#).

Draft indicators of good practice in relation to employability and technology for employability have been developed in two key areas:

The table below summarises the key indicators of good practices and the full (draft) indicators of good practices are detailed in [Section 8](#).

Theme	Summary of (draft) key indicators of good practices
1 Good practices in programme design and delivery to incorporate employability	<p>Connected curricula</p> <ul style="list-style-type: none"> » Connected curricula approaches are adopted to incorporate employability into programme design, learning outcomes and assessment » Curricula design requires students to take ownership and self-direct their lifelong employability from early on in their programmes of study » Assessment for learning approaches are adopted which place emphasis on formative approaches to dialogue and action on feedback <p>Employer engagement</p> <ul style="list-style-type: none"> » Employers are engaged with programme design and delivery <p>Student personal, professional and academic development</p> <ul style="list-style-type: none"> » Programme design incorporates supported student personal, professional and academic development » Students are required to regularly collect evidence of, articulate and showcase their learning and how they have applied it

Theme	Summary of (draft) key indicators of good practices
2 Good practices in programme design and delivery to incorporate technology for employability	<p data-bbox="536 741 1337 768">Technology-enhanced authentic and simulated learning experiences</p> <ul data-bbox="536 779 1437 1070" style="list-style-type: none">» Curricula include active and ‘real world’ learning experiences – supported by technologies – that help to develop employability skills» Technology is used to allow large cohorts of students to collaboratively engage with employers and authentic learning opportunities including with a broader range of employers such as SMEs and employer networks» Simulated experiences are used where appropriate» Data analytics is used to support student progression, quality assurances and quality enhancement <p data-bbox="536 1115 1206 1142">Digital communications and engagement with employers</p> <p data-bbox="536 1153 1249 1180">Technologies such as social media and multimedia are used for:</p> <ul data-bbox="536 1191 1481 1330" style="list-style-type: none">» Researching, identifying and developing contacts and relationships with employers» Developing digital and employability identity» Developing digital collateral as evidence of student ‘rounded self’» Showcasing student rounded self to employers and personal clients <p data-bbox="536 1375 1211 1402">Technology-enhanced lifelong learning and employability</p> <p data-bbox="536 1413 1206 1440">Technologies such as personal learning spaces are used for:</p> <ul data-bbox="536 1451 1437 1628" style="list-style-type: none">» Self-directed personal and professional learning (planning, reflection, managing, recording, review)» Digital feedback and engagement with a variety of stakeholders including employers to help develop learner self-regulatory skills» Employer-supported/ related assessment for learning <p data-bbox="536 1673 1190 1700">Technology-enhanced employability skills development</p> <p data-bbox="536 1711 831 1738">Technologies are used for:</p> <ul data-bbox="536 1749 1123 1852" style="list-style-type: none">» Learner skills diagnostics» Technology-enhanced development for skills gaps» Computer-aided assessment <p data-bbox="536 1897 1085 1924">Employer-focused digital literacy development</p> <ul data-bbox="536 1935 1481 2110" style="list-style-type: none">» Digital literacies are articulated and aligned within an employability skills framework» Curricula and employability skills development activities require students to apply their digital literacies» Curricula encourage digital entrepreneurialism» Students as digital change agents are used to address employer business issues

Institutions can better prepare for supporting good practices in technology for employability in five key ways:

Idea	Details
1 Embedding and aligning technology for employability (and its development) into policies, plans and processes	<ul style="list-style-type: none"> » Institutional strategies and policies require programme teams to enhance curricula design using a connected curricula approach (where connected curricula are described in section 8.1) » Institutional strategies and policies require programme teams to fully support student personal, professional and academic development throughout a programme using learner-centred technologies (as described in section 8.1) » Institutional strategies and policies require students to be provided with personal tutors focused on the their personal, professional and academic development » Faculties, schools and departments are required to embrace connected curricula in their business/operational policies and plans which are monitored and evaluated centrally » Institutional strategies and policies in respect of technology infrastructure, tools and resources meet the needs for learner-centred teaching, learning and assessment » Institutional strategies and policies place emphasis on effective employer engagement at the local level » In HE, consideration is given to integrating technology and processes for the HEAR with student personal learning
2 Professional development of staff in relation to employability and technology for employability	<ul style="list-style-type: none"> » Professional development of staff incorporates a range of topics focused on development of student employability and adoption of technology tools to facilitate this » Staff professional development is supported through activities such as peer review and communities of practice, in recognition of the centrality of teachers sharing ideas and practice as means of effecting change » Teachers need to take responsibility for maintaining their own employability
3 Technology tools, resources, infrastructure and support for employability and student-centred flexible curricula	<ul style="list-style-type: none"> » Institutions regularly review, benchmark and evaluate their technology infrastructure, tools and resources » A one-stop-shop support service is provided to faculties, schools, departments and programme teams that brings together the various departmental support teams such as IT, teaching learning and assessment, technology enhanced learning, employability, inclusion » Resources are provided for staff to self-review, plan and develop their skills, knowledge and capabilities in relation to student employability and use of technology » In HE, consideration is given to integrating technology and processes for the HEAR with student personal learning technologies

Idea	Details
4 Improving communication and collaborations to drive change in technology for employability	<ul style="list-style-type: none">» Faculties, schools, departments and programme areas in FE (i.e. at the local level) undertake a range of communications and engagement activities» Students as change leaders and innovators initiatives focus on employability and employer engagement» Encourage alumni to offer mentoring through on-line technology and in FE, use apprentices to talk to prospective apprentices about the world of work
5 Quality assuring and continuous improvement through employability data monitoring, analytics and review	<ul style="list-style-type: none">» QA processes are fully defined and communicated» Data monitoring, analysis and evaluation processes are set up» Analysis of trends and individual student performance data informs students and staff in (formative) approaches for enhancing student performance» In FE consider how to demonstrate employability credibility in line with the Common Inspection Framework

Further details are provided in [Section 9](#).

Sector bodies can potentially support institutions in six key ways:

Idea	Details
<p>1 Benchmarking Develop benchmarking toolkits that reflect effective practices and support institutions in collaborative benchmarking</p>	<ul style="list-style-type: none"> » Develop a benchmarking (self-review) toolkit for programme teams, building on existing sector toolkits » Develop an institutional benchmarking (self-review) toolkit about institutional preparedness for technology for employability, building on existing sector toolkits » Use these benchmarking toolkits to underpin institutional support services (see idea 5) such as benchmarking, consultancy and coaching » Ensure educational agencies collaborate to ensure technology is an integral part of generic employability frameworks and toolkits » Facilitate a UK-wide benchmarking programme addressing employability and technology for employability, led by a collaboration of educational agencies
<p>2 Sector resources Develop coherent sector resources targeted to different stakeholder needs that inform and enable stakeholders to develop student employability</p>	<ul style="list-style-type: none"> » Review existing available resources with a view to creating a one-stop-shop approach that can be contextualised and personalised for different stakeholder groups and include specialist areas such as technology for employability for special needs students » Provide resources that help institutions to visualise exemplar good practices such as with student portfolios and use of social media » Consider embedding the connected curricula in all resources » All resources should clearly communicate the rationale for using technology for employability, highlighting the benefits to different stakeholders and with a major focus on impact of employability initiatives and policies » Develop processes supported by technology to sustain the capturing and communication of case studies/vignettes of good practices, using many-different media approaches » Ensure educational agencies align and link resources with their resources, frameworks and toolkits
<p>3 Sector communications and engagement Facilitate improved sector communications and engagement with respect to student employability</p>	<ul style="list-style-type: none"> » Develop a communications and engagement plan targeted at a range of stakeholders which focuses on technology for employability » Explore the potential for a collaborative approach to communications and engagement with institutions and a range of stakeholder groups, (including educational agencies) in respect of employability and related technology

Idea	Details
4 Sector online collaborative spaces Develop online collaborative spaces to support engagement between sector stakeholders	<ul style="list-style-type: none">» Support the development of online spaces to support new and creative collaborations between staff, students, alumni, employers» Negotiate with institutions that have already created such online collaborative spaces with a view to opening them up to other institutions nationally
5 Institutional support services Provide a range of institutional support services that enable institutions to achieve measurable impact in enhancing student employability	<ul style="list-style-type: none">» Provide consultancy, coaching and training services to institutions in the area of technology for employability/self-employability» Ensure any consultancy utilises fully the resources available from sector bodies, including benchmarking and diagnostic toolkits as well as information, support and guidance resources
6 Joined-up related work areas Identify synergies with other areas of work across the sector and develop a joined-up approach for student employability and use of technology across all activities	<ul style="list-style-type: none">» Ensure that the findings and implications of this report are explored across related work areas such as exploration into digital literacies, students as change agents, and learning analytics

The sector resources identified as part of the study are detailed in [Appendix 9](#).

Appendix 2 - E-portfolio survey questions



Appendix 2 - E-portfolio survey questions

The online survey into use of e-portfolios addressed the following questions:

- » Please can you describe how you are using e-portfolios and their purpose and role in the curriculum (including any co/extra curricula activities)?
- » Please can you describe how students are using e-portfolios to engage with employers and recruiters e.g. to present their strengths and achievements?
- » What are the key barriers you have encountered when implementing e-portfolios in curriculum design and delivery (consider perspectives of different stakeholders e.g. students, academic staff, employers, mentors, managers, IT departments, support staff)?
- » From your experiences with e-portfolios what good practice tips can you provide to others for integrating e-portfolios into curriculum design and delivery?
- » Briefly outline a vision for how e-portfolios could be used to their full capabilities in your institution
- » What recommendations would you provide to your institution in order to create the conditions for e-portfolios to be better used?

Appendix 3 - HE case studies



A. University of Greenwich

Title

Two illustrations of the University's Greenwich Connect team supporting faculties in technology-enhanced implementation of the institutional employability goals.

Summary

Developing student employability is a key strategic goal of the university due largely to the nature and characteristics of its student population (see below). The Greenwich Connect team work in partnership with Faculties to help plan, implement and evaluate learning innovation aligned to strategic goals, leading to specific projects that the Greenwich Connect team support. This case study describes the work of the team through the lens of two such Faculty projects. Firstly, they run a Virtual Law Clinic that builds capacity for law students to engage with professional lawyers and the community on real-world problems. Secondly, the Professional Development Portfolio in engineering and science seeks to develop student professional practices, skills and confidence.

Organisation

University of Greenwich: Greenwich Connect

Greenwich Connect is a university-wide initiative to develop and implement a vision for learning innovation in a digital world. The Greenwich Connect team, part of the University's Educational Development Unit, supports faculties in enhancing curricula. They do this through joined-up approaches to implementing the university's strategic goals and quality processes (e.g. for teaching, learning and assessment, employability, graduate attributes and digital literacy). This is all with a strong emphasis on digitally-supported social, professional and academic practice and collaboration between students, staff, alumni and employers.

Context and challenge

According to HESA statistics, the University has the highest percentage of students from working class backgrounds in the UK. It is also amongst the highest percentages of students from black and ethnic minority backgrounds and there is a belief that this results in students not always having the same level of confidence, aspiration and social

capital as in other institutions. As a consequence, the University's 2012-17 strategic plan seeks to improve both the academic and employment outcomes of graduates with a strong focus on student employability skills, work experience and transition to work.

Making it happen

The Greenwich Connect team works in partnership with faculty staff on a range of activities including development of social media policy and guidelines and working on projects such as mobile and distance learning development, all within an agreed governance model. Two such faculty projects are described both of which have a strong emphasis on implementing the University's strategic goals on student employability.

Virtual Law Clinic

The Law department in the Faculty of Architecture, Computing and Humanities, runs a **national award winning** drop in service where members of the public who cannot afford legal services can seek advice on certain aspects of the law such as employment and family law, disability benefits and intellectual property. Over 200 clients have so far been helped and students get involved in tasks such as interviewing, legal research and drafting advice under the close supervision of qualified solicitors. These activities help them develop a range of employability skills, such as collaboration and team working, communication, professional practice, self-management, working with the wider community, using digital tools and knowledge construction.

The Law Centre identified the need to expand the drop-in service to allow greater numbers of students to engage with the public and professional lawyers, driven largely by student demand and the need to overcome difficulties in finding internships for all students. However it did not have the physical space to allow this and it was therefore decided to develop the Virtual Law Clinic.

The Greenwich Connect team worked in partnership with the Department of Law and the Department of Computing and Information Systems to develop a bespoke Virtual

Law Clinic, with a member of the Greenwich Connect team acting as project leader. A decision was taken to develop and host an in-house system, as commercial systems were deemed too expensive and open source alternatives do not have adequate educational features.

The system can now be accessed by both desktop and mobile devices and provides secure communications, a dedicated forum to allow sharing of documents, research and ideas (highlighting the chronology of how decisions are reached) and support for formative and summative feedback from academic and professional staff. The system was developed by students working via the University's GWizards initiative that is designed to engage students from the Department of Computing and Information Systems in work experiences, who were mentored by a member of the Greenwich Connect team. The project has therefore additionally helped to develop the employability skills of these computing students.

The Virtual Law Clinic allows a member of the public to submit a web-based query, which is then assigned by a supervisor to a team of students supported by academic staff and legal professionals (working pro bono to provide advice and mentoring to students). They work synchronously and asynchronously to develop draft legal advice, with students being given feedback until a draft reaches an acceptable standard, which is then signed off by the supervisor and e-mailed to the client. On completion of a case, the records are tagged and anonymised to provide a knowledge base of case histories (complete with student comments and feedback), which provide an invaluable resource for future teaching, learning and research.

Those students undertaking the 30 credit Level 6 Pro Bono option, write an assessed reflective journal which includes reflecting on and articulating their employability skills.

Professional Development Portfolio in engineering and science

The Faculty of Engineering and Science has identified the importance of developing student employability skills and confidence. They had found that significant numbers of students are not gaining employment as they are not able to present themselves well to employers. The Engineering and Science PDP (Professional Development Portfolio) has therefore been developed in partnership with the Greenwich Connect team. This involves students using an e-portfolio (PebblePad3) to reflect on their professional and academic development, uploading supporting evidence such as documents, images, audio recordings and external links and receiving feedback from staff – all supported via personal tutoring.

The School of Science originally pioneered this development, using a series of PebblePad templates and video resources (embedded in the templates) to structure student participation, which requires students to be self-reflective in both professional and academic skills. The PDP is structured around eight themes including self-management, managing information, SWOT analysis, forward planning. It is an assessed activity for undergraduates in levels 4, 5 and 6 and complements teaching sessions on employability skills and student access to online resources such as the Myers Briggs personality index. Final year students also take a core 15-credit course in planning and professional development where the PDP accounts for 60% of the assessment.

The PDP is a process and not just a repository, which encourages ongoing student reflection and dialogue with staff as well as students articulating their strengths, weaknesses and their level of confidence in their skills. The system also allows students to use their portfolios to showcase themselves to employers.

In addition, the Faculty has an Employability Passport initiative. This rewards students for their willingness to record and validate work, volunteering and other experiences. These experiences can contribute powerfully to increased confidence, more convincing CVs and better job applications.

Impact

The Greenwich Connect initiative, which was set up in 2014, has established new governance structures and four working groups. These implement its goals in respect of learning innovation in a digital world and, specifically, in supporting Faculty and Department projects to improve the institutions' strategic goals in respect of employability.

In the Department of Law, it is too early to assess the impact of the new Virtual Law Clinic, but it is anticipated that it will meet the objectives of building the capacity of an established legal advice centre for students to engage in real-world legal advice supported by professional lawyers.

In the Faculty of Engineering and Science, over 800 students now use an e-portfolio to underpin their Professional Development Portfolio, via a core PDP assessed course.

Sustainability

A key aspect of sustainability for the Virtual Law Clinic is ongoing support, maintenance and development of the technology. This is particularly important as students were involved in its development who are with the university for a relatively short time period. The Department of Computing and Information Systems has committed to supporting it and has developed processes for new students to support, maintain and develop the system including recording of full system documentation. Other sustainability options being considered include opening up the Virtual Law Clinic to other institutional law departments as well as adapting and contextualising the system to other subject areas, which have a professional element.

The Faculty of Engineering and Science is planning a range of further developments to the Professional Development Portfolio. These include

- » a higher level of employer engagement (including engaging with SMEs)
- » securing a greater number of placements for students

- » engaging employers as mentors
- » staff development on employability skills and personal tutoring

The Greenwich Connect team are also working with other Faculties to explore how the approaches and technology can be contextualised to their needs in development of professional practices.

Lessons learnt

A number of lessons have been learnt:

- » There is a need to continually engage and build relationships with employers (including SMEs) to support opportunities for students to engage with them via e.g. placements, employer mentoring
- » Development of employability skills and digital literacy needs to be a key part of staff professional development
- » Technology can make engagement between students and employers more cost-effective
- » Development of student employability needs to be integrated into programme design and align with assessment for learning and personal tutoring processes
- » Use of e-portfolios must be considered as a process, not just a repository
- » Students can be used to support learning innovation and creative uses of technology
- » Personal tutoring needs to be appropriately organised, supported and quality assured to provide more consistent practices e.g. developing personal tutoring skills, ensuring it is recognised in academic workload and developing quality assurance processes
- » The need to overcome perceptions in some academics that it is not the responsibility of universities to teach employability

Find out more

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B. University of Northampton

Title

Development of student employability skills through a self-directed, blended approach and engagement with social innovation and enterprise.

Organisation

University of Northampton: University Centre for Employability and Engagement (UCEE) and Institute of Learning and Teaching

The University Centre for Employability and Engagement (UCEE) works with the public and third sectors to develop strategic partnerships with organisations in local, national and international communities that provide 'win win' relationships for the organisation, its community and stakeholders, the student and the University of Northampton by developing innovative paid and unpaid opportunities for students to gain employability skills and enhance their experience.

Summary

The university developed a policy for student employability which encourages self-directed evaluation, planning and development of employability skills via engagement with social innovation and enterprise. Ten employability skills and associated learning outcomes have been identified and a non-linear course developed to support students in assessing these skills and engaging with appropriate activities to address their specific needs. The course includes a blend of "e" and face-to-face activities (including peer review) and uses technology to maximise efficient use of student and advisor time.

The course has already been integrated into the curricula of the BA in Social and Community Development programme and similar integration plans are in place. There has been a large increase in student engagement activities with the employability agenda and an independent evaluation is currently in progress. The course primarily uses the VLE Blackboard as well as online skills assessment and communications technologies such as Skype; the use of online badges is in being planned.

Context and challenge

The university has a strategic goal to be Britain's leading university for social enterprise and has been awarded the international accolade of 'Changemaker Campus' by **Ashoka U**, the world's leading network of social entrepreneurs. Changemaker Campuses are colleges and universities collectively striving to ensure that the educational experience is a world-changing experience. As part of this strategy, the university has developed a set of principles which include "every student has a responsibility to effect positive social change" and "every student already has the power and resources to effect that change". These principles shape its policy for student employability which can be summarised as one which encourages self-directed evaluation, planning and development of student employability skills and which aims to enhance employability through student engagement with social innovation and social enterprise.

Making it happen

The Centre for Employability and Engagement set about implementing the policy on student employability and started with a consultation exercise with employers, students, graduates and other universities.

Development of employability skills framework

The consultation exercise identified ten key employability skills e.g. communication, leadership, teamwork, persuasion, negotiation, influencing skills. The ability for students to clearly articulate their skills and show passion are also considered to be key attributes that employers are looking for in students.

For each of these employability skills, a set of five learning outcomes were defined. For communication, they included effectively communicating verbally with audiences of different backgrounds and similarly for written communications as well as getting across complex ideas to achieve buy-in. In this way, the university was shifting staff/student thinking from a careers mindset (with its narrow focus on getting a job) to a broader mind-set of skillsets, values, behaviours and attitudes which employers are looking for. Students also need to evidence these through working on social innovation projects.

Development of a student self-directed blended employability course

This employability skills framework led to the development of a blended and non-linear course based on the identified learning outcomes and predicated on student ownership i.e. the student self-directs the course based on their needs.

The university developed an online skills assessment based around the learning outcomes. For each question there are just three multi-choice response options. For example, "What experience do you have in giving presentations to a wide range of audiences?", the options are none, some and lots, which result in traffic light feedback: red, amber and green. For green responses, students are then asked to prove it, either by booking an appointment (online) or they can undertake an e-activity on self-reflection. For red and amber responses, a list of e-activities would be presented to help them improve that specific learning outcome.

Students can also opt to attend workshops and can book these online and they also have to complete an e-activity before attending the workshop emulating the flipped classroom approach. An example of an e-activity is CV-building. Students watch three videos and address the question "what makes a good CV and a bad CV?" They then prepare their own CV using a supplied template. When they attend the workshop (with their completed CV), a peer-review session is facilitated. They can also book-in to see an advisor. A further e-activity following the workshop requires them to re-write their CV based on the feedback, which goes to an Advisor who will either provide e-feedback or book an appointment for a Skype call or face-to-face meeting with the student. Another e-activity focuses on building student networking skills and activities centre on networking via LinkedIn.

Incentive for students

An incentive system (for employability) has also been developed through the use of nectar points gained for example through completing an e-activity or undertaking voluntary work and recorded in Grade Centre. The university intends to implement online badges in the future.

Integrating employability into the curriculum

The Centre is also working with schools to integrate the course into curricula using a co-curricular approach. For example, it is working with the BA in Social and Community Development programme, focusing on the volunteering module where students are required to undertake an assignment and assessment in respect of their volunteering work. The employability angle was then built in to the module to include the online skills assessment, action plan and continuous self-reflection related to their development within their action plan. From this they could gain an award over and above the normal module credit.

Alignment with HEAR

Plans are in progress to align the employability skills framework to HEAR records, through re-articulation of the employability learning outcomes.

Technology used

The IT platform chosen was Blackboard and this is used to underpin many of the activities e.g. e-activities, recording of e-activities in Grade Centre, appointments, scheduling.

The online skills assessment is currently a separate application and has not yet been integrated with Blackboard, although its integration is planned.

There is no institutional common approach to using e-portfolios, though some schools use them.

In the School of Arts, students are using mobile devices to capture multimedia data and adding these to their e-portfolio (helping them to showcase to potential employers). Health and Education are using PebblePad as a tool to support engagement with their professional standards frameworks.

It is recognised that online student networking outside of the university's systems is prevalent and helps to provide peer support.

Impact

Since implementing the course, the number of students engaging with the service has risen from 450 to 8,496 and the university is now planning an analytics project to fully research how students are progressing through the course. The University's Institute of Social Innovation and Impact is undertaking an independent evaluation of impact and the Student Union are undertaking "mystery shopper" exercises to provide feedback. To date 97% of students have obtained employment or have gone on to further study.

The DHLE survey (2013/14) confirms the University's continuing positive performance with the maintenance of 96% employability across the past four years; retaining a top 20 UK HEI ranking (HESA report). The graduate employment performance also shows a three year improving trend though first degrees is below HE average. The NSS (2014) optional category on careers places the University above the HEI sector top quartile for student satisfaction and the igrad-NSB places the University well above the HEI benchmark.

Sustainability

Sustainability plans include:

- » Better integration of technologies - for example, within Blackboard
- » Further work with Schools with integration of the employability course into curricula
- » The introduction of virtual Internships has had a limited pilot in 2014-15, with further developments planned 2015-16
- » Addition of online badges
- » Development of a new platform outside of Blackboard to cope with the demands of the on-line platform and integration with HEAR

Lessons learnt

A number of lessons have been learnt:

- » There have been 2,500 completions of the online skills assessment and all students subsequently clicked through to engage with at least two e-activities. However, it is recognised that this means that some students are not using the course therefore a safety net has also been put in place for those students who do not embrace the self-directed approach. It is called Fast-track and is open to final year students only who have access to a dedicated (remote) advisor who supports them (via Skype, e-mail, texting) using techniques such as Skype-based mock-interviews
- » Although 97% of students obtain employment, only 64% of these jobs are graduate level jobs. The challenge is therefore to drive up the quality of jobs that students obtain
- » In the online skills assessment process, it was found that students generally overestimate their experience and this would be teased out in the meeting with an advisor
- » The approach to student employability skills development has required a mindset change for careers advisors who have moved from a directing approach to supporting students in taking charge their career plans and developing the appropriate skills

Find out more

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C. University of Edinburgh

Title

Developing 21st Century Career-Ready Graduates.

Organisation

Edinburgh College of Art and the University of Edinburgh

The history of Edinburgh College of Art (ECA) dates back to the 1770s. ECA was an independent specialist higher education institution until it formally merged with the University of Edinburgh in 2011. The merger of ECA with the University enabled the creation of a new and enlarged college of art by incorporating the University's School of Arts, Culture and Environment. As a result, the new Edinburgh College of Art comprises not only Art, Design, Architecture and Landscape Architecture, but also History of Art and Music.

Summary

This case study follows the development of various initiatives at the College of Art pre-merger and the subsequent cross-University developments post-merger.

The College of Art was an early adopter in addressing the employability agenda for its students and had evolved and embedded an integrative approach to curriculum design for all programmes. Developing career ready skills and graduate attributes is integrated into assessed learning outcomes, learning activities and formative "assessment for learning" approaches. Networked online tools and resources are an essential component in providing the necessary supportive learning environment.

These various initiatives have better prepared students for employment and helped them to more fully understand and articulate their employability skills. ECA has also seen a significant increase in student satisfaction with assessment and feedback and, post-merger, its National Student Survey (NSS) rating for assessment and feedback was amongst the highest NSS scores both in the University and across the UK sector for art and design related subjects. In the 2016 Guardian University guide the Edinburgh College of Art portfolio of subjects in Art and Design are all ranked in the top five, with two of them ranked first overall.

Context and challenge

Edinburgh College of Art was focusing on career development and student employability back in 2004 and had restructured the curriculum to include a 20-credit module based around professional practice and personal development. Key in the approach was to ensure that the content of the module was taught and experienced primarily through integration with the studio projects and themes of study.

As most creative industries disciplines require working in portfolio-based careers (film makers, for example, will work in project-based teams which will form and re-form with different members for each commissioned project) students need to understand the operational and commercial ways in which they will need to operate and be able to bring problem solving, independent thinking, lateral thinking and project management capabilities to balance their discipline expertise. At the time, some academics did not see the development of employability skills in their students as their personal concern or responsibility, given that it appeared not to relate directly to the teaching of the academic study, but despite this, a need was identified to build the development of such transferable skills into programmes together with supporting students in being able to understand and articulate what these skills meant for them individually.

At the same time as addressing the employability agenda, ECA identified the need to overhaul their approach to assessment and feedback. When the National Student Survey (NSS) was first introduced in England the whole of the Art and Design sector was somewhat shocked at the low ratings given by students specifically for assessment and feedback. This was a particular surprise given the pedagogy used in art and design where students highly-value the personalised and small group-work nature of the teaching. Research subsequently identified that a recurring and specific issue was that tutors failed to explain to students what was actually being assessed, sought and valued; students therefore assumed that if the tutors appeared to like their work and they got on well with them, this somehow translated into being given a good mark. This

couldn't have been further from the reality and the assessment models used in art and design are very well understood, highly-collegiate and very robust; but simply that they were also opaque to students.

Making it happen

To address the need to develop student employability capabilities and engage with the wider context of work, the ECA curriculum was restructured with two 40-credit and two 20-credit modules spanning two semesters, one of which focused on professional and personal development. All of the modules are co-requisite, meaning that they had to be taken at the same time in parallel, enabling their integration through a series of sequential projects. Students work iteratively through numerous projects and revisit the same or similar challenges but with increasing complexity as they move forward; the first two years of the professional practice module focus on the development of wider studentship skills and graduate attributes such as independent learning, taking responsibility, managing projects, autonomous learning, digital literacy, working in teams working and taking responsibility for the work of others. These are all expected characteristics of learning as described in the Scottish Credit and Qualifications Framework and as promoted by the Scottish Government's employability agenda. By the third year (of a four-year honours degree programme), students are required to define and lead their own thematic project within an external real-world context: for some, this would mean a placement or study-abroad experience. And in the final year students propose and direct their whole year of study with supervision; more akin to research post-graduate pedagogic models.

At the same time as focusing on employability, the College began addressing the challenges and student frustrations around assessment and feedback as highlighted in the poor sector-wide performance in the NSS. As a result, learning outcomes were made more explicit and assessment was constructively aligned to the learning outcomes. Students now receive a profile of grades directly aligned to the learning outcomes - i.e. one grade per learning outcome.

Furthermore, "assessment for learning" approaches were adopted that placed significant emphasis on formative assessment and feedback together with dialogue, self-critical reflection and action on feedback. It is an important principle that giving feedback should require students to demonstrate their understanding of and do something with the feedback given. The approach also includes student self-assessment, requiring them to grade themselves formatively and to write up their own feedback notes. All this means that students do not see their education as a series of separate modules but as a linear, iterative and holistic progression though defined periods of learning, where the development of the types of graduate attributes needed to succeed or which is sought after by employers is invisible and seamless and built into the learning experience. By years three-four, students should then be able to articulate explicitly the skills they have developed and reflect on them and on how they could be applied more widely in different situations and contexts.

The Agency Project: School of Design, ECA

In 2008 the Scottish three year enhancement theme of 21st Century Graduates was introduced to focus specifically on and to raise the profile of embedding the development of career readiness skills and attributes into the curriculum. Building on previous work, ECA's disciplines further enhanced their approaches to addressing the employability agenda. Of particular note was the approach taken by Graphic Design.

The graphic design programme developed a further innovation within the Professional Practice module called the Agency project, where all undergraduate students are required to operate in a cross-year level graphic design team, working with industry mentors and undertaking real-world projects, with up to 50% of these being live commercial projects. Final year students take on the role of the Agency creative directors, effectively running a real commercial Design Agency and creating a manifesto for the kind of agency they wish to run. The earlier year students have to apply for a job in the team they wish to be part of and can also lose their job if they do not engage and perform well enough. This approach introduces students to the realities

and pressures of 'real-world' working right from the beginning of a programme. Students are assessed on different aspects depending on their year e.g. 4th year students, in addition to their portfolio of design work, are assessed on how well they lead the Agency and how well they line-manage their team inside the Agency. Students are highly motivated by this experience and the scheme won the first UK-wide Guardian Award for best employability project.

The Edinburgh Award

In 2011 the University introduced the Edinburgh Award to support students in their wider learning while at the University. The approach enables students to control and manage their own development and confidently articulate the learning acquired and progress made through drawing on their curricula, co- and extra-curricular activities. A further dimension is to make students of the award aware of the positive impact they can have when engaging with those around them. These qualities align with the Universities three overarching attributes in the Graduate Attributes Framework: Enquiry and Lifelong Learning, Aspiration and Personal Development, and Outlook and Engagement. In 2013 a further dimension was introduced to the award and students now assess and provide peer feedback to each other anonymously online, using an adaptive comparative judgement (ACJ) approach. Both the award and the approach to the online peer assessment and feedback has proven very successful;

"The Edinburgh Award has swiftly exceeded our expectations, achieving student satisfaction, growth, reach and wider impact significantly beyond what we originally imagined and far exceeding the target of 500 students per year two years ahead of schedule".

"ACJ is like a crowd-sourced/social media style feedback and assessment tool, which is really innovative and very powerful. I can honestly say that it has been one of the greatest learning experiences for me during my academic studies at the University."

Student Led Individually Created Courses (SLICCs): University-wide

The experience gained from the innovations in the art college and from the University's Edinburgh Award confirmed that not only were students very capable of leading, managing and assessing aspects of their own learning, but that the levels of active engagement, independence, self-direction and acquisition of new skills and attributes are precisely what employers are seeking over and above an academic degree.

A new innovation was introduced in 2015 to further develop career readiness and to introduce self-reflection and assessment for learning approaches. It is a credit-bearing online undergraduate "self-defined learning experience" module called SLICCs (Student Led Individually Created Courses), underpinned by using e-portfolios to evidence the learning. The module is one where students create their own course, critically self-reflect and formatively self-assess their own learning as part of the experience; all supervised by tutors. There are no formal lectures, the learning outcomes are predefined and are the same for all students, who are required to design and write a proposal for their own learning experience. This can be based on a range of activities e.g. a volunteering experience, a community or personal development project, a research project, a placement, work experience or an internship.

The student proposals for a SLICC are required to detail the learning activities, together with how they will evidence the set learning outcomes (which include learning outcomes that relate to graduate attribute development). Tutors are required to sign-off the academic viability of the proposal and whether it is practically achievable. Students also have to re-interpret the learning outcomes in their own words in their proposal and this aids student understanding of what is required of them, what evidence they need to produce and how they will be assessed.

Before commencing the SLICC journey students are required to attend three induction workshops. The first workshop explains the SLICCs process (i.e. how to design

an individual learning experience and what is required in the student proposal). The second workshop focuses on self-assessment, introducing the rubrics that tutors will use for assessment and how to write a critically reflective report at the end of their project. The final induction workshop focuses on how to create a web portfolio complete with the various types of digital artefacts required to evidence the learning acquired. Following these workshops and by the time the student has submitted their project proposal, they will be working on their own (under supervision) but will not have any further tuition. Students also have access to a range of resource links such as open source web-materials e.g. for audio and video editing (to create their digital artefacts) as well as self-assessment diagnostics tools such as Myers Briggs and Belbin, and resources on organising and managing their time.

For the summative assessment submission, students critically select various parts of all their formative reflections, documentation and digital artefacts, and bring these together as a formal submission in their webfolio along with a critically self-reflective and evaluative report. Students are also required to formatively self-grade the final submission. The summative assessment is then conducted by their tutors.

Technology used

ECA designed and developed a bespoke Learning Management System to facilitate both the design of projects, managing the feedback, responses and actions generated by both students and staff and both the formative and summative assessment process and allocation of grades. At the end of each project students can compare 'side-by-side' their graded self-evaluation and the staff assessment along with staff feedback, their own reflections on the feedback given and their intended actions as a consequence.

The Edinburgh Award uses Adaptive Comparative Judgement software by **DigitalAssess** to enable students to anonymously provide peer-feedback at the first draft stage and finally to summatively assess each other for the award itself.

PebblePad is used to provide the framework, digital workspace and e-portfolio tools to support the individual SLICC for each student for writing their proposal, managing their experience, creating their portfolio of evidence, formatively self-assessing and finally submitting for assessment.

An important element of using online tools and networks is for peer groups to interact and support each other, typically in self-forming groups, and for students to use blogging and messaging tools, regularly documenting, date/time-stamping and reflecting on their experiences and progress, as well as adding digital artefacts (e.g. pictures, audio and video).

The SLICC framework enables tutors to access student portfolios at any stage and evaluate student progress and the learning acquired over-time.

Impact

Edinburgh College of Art participated for the first time in the NSS after merger and achieved among the highest ratings for the questions around assessment and feedback in the University and in the sector for art and design.

The process of requiring students to formatively self-reflect and self-grade throughout the programme has had a significant impact on improving how they articulate what they have achieved, including their acquisition of employability skills, particularly as in order to achieve some of the learning outcomes, students have to be able to demonstrate and articulate how they have achieved them.

The use of the portfolio is fundamental to evidencing the quality and standards achieved in art and design disciplines. Increasingly this is being supplemented, and in some cases replaced, by online versions or e-portfolios.

The success of student self-critical reflection and graded self-evaluation is also significantly enhanced in the ECA model by a bespoke learning management system.

The approaches and success achieved above simply would neither be logistically feasible nor as effective without the use of networked online tools and digital resources.

Sustainability

Sustaining and embedding the approach has been core to the enhancement activities, through restructuring of curricula for all programmes, incorporating employability-related learning outcomes (and their assessment) and introduction of more formative 'assessment for learning' approaches.

The principles and practices have been widely shared and transferred across the University via strategic initiatives, student systems development and pilot projects, and colleagues who have been directly involved in these projects are beginning to adopt, adapt and contextualise their use in their own disciplines and programmes.

Lessons learnt

The following lessons have been learnt:

- » The maximum impact on the student experience has been achieved through a combination of initiatives in respect of curriculum re-structuring, including incorporation of the employability agenda into core learning activities and assessed learning outcomes, together with adoption of more formative assessment for critically self-reflective learning approaches
- » Integration of real-world working and learning activities into programmes is highly motivating for students and serves as a powerful mechanism for students to learn, acquire, apply and evidence their employability capabilities
- » The SLICCs approach is in its first phase of pilot during 2015 and a robust evidence base will be required to convince staff of the long-term benefits of this model if it is to be fully integrated and embedded within the mainstream curriculum. It is thought that students are therefore likely to lead the way for change and convince their tutors of the benefits they derive from these types of experiences

- » The approach demands active learning and engagement of students and it is already quite clear that this is not an easy way of gaining credit; however to-date this does not appear to dissuade students
- » Networked online tools and resources are an essential component in providing the necessary supportive learning environment. The logistics of running these types of models in an analogue way would be simply prohibitive
- » A critical element of all of the approaches described is for students to gain a greater understanding of assessment and feedback and how to effectively self-assess and evidence the standards they have achieved and the learning they have acquired, and to critically reflect on this
- » The capturing of tutor feedback and reflective actions using learning management systems makes feedback more visible, with the potential to engage tutors in enhancing the quality of discourse with their feedback to students

Find out more

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D. Keele University

Title

An institutional approach to developing self-driven, well-rounded graduates through embedding employability via academic and co-curricula activities, a graduate attributes framework and a programme-wide development strand, underpinned by e-portfolios.

Summary

The case study describes the university's strategic approach to embedding employability by supporting students to take responsibility for developing themselves into well-rounded graduates. To support this, a wider curriculum is offered via a flexible degree structure that includes co-curricular activities, with options such as part-time work, entrepreneurial schemes or volunteering, many of which are formally recognised on the student's HEAR (Higher Education Achievement Record). Students develop a reflective e-portfolio to assist their development and showcase evidence of their skills and capabilities to future employers, based around a set of graduate attributes. They can also gain accreditation from the Institute of Leadership and Management (ILM).

Organisation

Keele University: Student learning team

The Student Learning Team provides students with academic, professional and personal skills development, training and guidance and are responsible for the Keele University Skills Portfolio (KUSP), which is accredited by the Institute of Leadership and Management (ILM). This portfolio allows students to document their personal and professional development and achievements at university and to showcase themselves to employers.

Context and challenge

Back in 2010, the senior management at the University evaluated its student programmes, recognising the importance and value of both academic curriculum and co-curricular activities in preparing students for employment and careers, with the appropriate skills and attributes. In particular, it recognised the need for students to take responsibility for developing and shaping their studies

and professional activities. The implication was that the University must support their academic, personal and professional development throughout a programme.

Making it happen

The University introduced a new flexible degree structure that allows undergraduate students to customise a programme to suit their needs allowing, for instance, arts students to study science modules. An extensive range of co-curricular activities are available to students, such as part-time work, entrepreneurial schemes, societies and volunteering and students are encouraged to recognise the value of these activities as part of their development. Many of these activities are formally recognised on the student's HEAR (Higher Education Achievement Record).

The University has also developed a set of ten **graduate attributes**, relevant to both academic and employability related capabilities and all programmes are required to map these to their academic teaching, assessment, activities, support and so on. They plan to extend this to co-curricular activities, whilst key professional services such as the careers, the library and the student learning teams have already incorporated the attributes in to their practice. In order to support programme teams in developing their practices in graduate attributes, a team of Teaching Fellows has been created to offer support.

In addition, a student development strand was introduced to all curricula which starts at the beginning of a programme and runs throughout it, focusing on academic, personal, professional and career development of students and aiming to create independent, self-driven students. The development strand includes activities such as thematic practical workshops and online seminars and these are both embedded within academic programmes and run as stand-alone events. For example, BeMore is a two-week programme of activities, designed to develop graduate attributes, offering options such as collaborative creative writing, local community volunteering, creative filming and bubble football, which is designed to develop team-work, problem-solving and leaderships skills.

A specific example of a student-driven initiative working in partnership with employers and the local community is the CLOCK project - **Community Outreach Collaboration Keele**. Law students provide vital help and support to disadvantaged communities through legal research, policy work and community legal education, and are supported by major legal employer, enabling the students to strengthen their key employability skills.

A key element of the development strand is for students to develop a reflective portfolio (the Keele University Skill Portfolio - KUSP). This aims to:

- » assist their development
- » help them reflect on and articulate their learning
- » engage in dialogue with their personal tutors
- » provide evidence of their learning
- » allow showcasing of evidence of their skills and capabilities to employers

These benefits are all based around students assessing themselves against the graduate attributes. The reflections are like mini-essays and are based on a critical reflective model (**Ryan and Ryan's 4Rs model of reflective thinking**) - (1) reporting and responding (2) relating, (3) reasoning and (4) reconstructing. Once completed, their portfolio can gain accreditation from the Institute of Leadership and Management (ILM) - though the graduate attributes are actually wider than the ILM accreditation framework.

The University's personal tutoring system relates to the student development strand (**life-long** and **life-wide learning**) with students having the same personal tutor for the three years of their programme. The tutors support and mentor the students in developing their portfolio, and sign off their evidence.

The 2015 undergraduate cohort will be the first to graduate and the free version of PebblePad will allow students to showcase the evidence and reflections to employers.

Technology

The technology used in the Keele University Skill Portfolio (KUSP) is the e-portfolio system, PebblePad, which was chosen for its ease of use and structuring, in preference to the e-portfolio that comes as part of the institutional VLE which is Blackboard. PebblePad is integrated with the VLE using **Learning Tools Interoperability (LTI)**, which allows users to sign-on using a single username/ password.

As part of the development strand, students use the e-portfolio both for reflective activities and accessing content, all framed around six themed workbooks (developing learning practice; techniques for getting organised; making effective presentations; people skills, team working, dealing with stress). This provides a structure whilst allowing students and staff to use the e-portfolio in a non-linear manner.

Programme teams are supported in using the e-portfolios by the members of the student learning team.

Impact

The University is currently undertaking an independent evaluation.

Approximately 9% of all graduating students completed the optional programme during the pilot cycle. It is expected that this number will grow considerably in the coming years.

Academic staff have commented that [the central team of teaching fellows are] "brilliant, and willing to work with us to tailor things and design us the activities we need rather than them feeling 'off the shelf'".

Students commented, "It seemed a superficial task at first - but the questions that guide me to reflect really did take me to a deeper level of understanding of what had happened and why".

Sustainability

Sustainability and embedding have been built-in to the Keele approach as it has adopted a top-down strategy that requires all programmes to embrace the Keele graduate attributes and work inclusively with professional services on the development strand linked to the Keele University Skills Portfolio.

Lessons learnt

A number of lessons have been learnt:

- » Use of e-portfolios needs to be totally integrated with learning, assessment activities and personal tutoring, using some form of structure and aligning with graduate attributes
- » Early on, some academic staff were wary of the approach taken with the new degree structure, though this has now largely passed
- » A reflective framework supports and helps direct students in reflecting on and articulating their learning e.g. using the 4Rs model
- » Not all students see the value of showcasing their portfolios to employers
- » There is not much evidence of students uploading multimedia evidence to their portfolios
- » Not all academics possess employability skills
- » Support needs to be in place for personal tutors to guide students' development of graduate qualities
- » Clear and considered thought needs to be given to the use of labels, tags and names and whether these are used internally and/or externally to the project team
- » The balance of benefits and drawbacks of accreditation should be given appropriate consideration

- » An approach in keeping with the culture of the organisation is beneficial; in this case a flexible, organic approach to collaboration with academic programmes worked best

Find out more

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E. University of Southampton

Title

A Faculty-based employability initiative, branded 'Mission Employable', with students driving strategy and change in pursuit of enhancing student employability, underpinned using a range of social media and multimedia.

Summary

Dr Eleanor Quince, Faculty Director of Employability in Humanities at the University of Southampton, identified a challenge of students not being engaged sufficiently early with the employability agenda. To overcome this, Dr Quince decided to empower the student body to drive change. This was done through a range of interconnected employability activities with an emphasis on using social media and multimedia to engage students with peers, alumni, staff and employers, all facilitated by four student interns. The activities included:

- » setting up an alumni network
- » an interactive multimedia compulsory undergraduate first year employability module
- » peer mentoring scheme
- » a formative research and evaluation exercise to drive continuous enhancement in the initiative

Organisation

University of Southampton: Faculty of Humanities

The Humanities Faculty offers single or combined degrees across seven disciplines: Archaeology, English, Film, History, Modern Languages, Music and Philosophy and currently has approximately 3,000 students.

Context and challenge

The Director identified a special problem related to employability and humanities disciplines, due to perceptions amongst both students and staff that a humanities degree is less likely to be of interest to employers than more specialised or vocationally driven degrees e.g. in STEM subjects. Furthermore, research undertaken by the

institution's Careers and Employability Service established the need for students to start considering, preparing and applying for jobs much earlier than in the past. Past discussions with colleagues had identified a goal for employability and careers guidance to commence from the very beginning of a degree programme. It also needed a strong focus on highlighting the importance of employability and developing the necessary student skills, knowledge and experience in preparation for employment. However, Faculty initiatives to put this into practice, such as optional careers events and embedding short talks into existing modules, failed to garner student interest in the importance of employability. The Faculty therefore decided that a new approach was needed which would be both engaging and flexible, with tailored options for each of the seven disciplines.

Making it happen

An innovative approach was needed to rise to the challenge of engaging and giving power to students to creatively drive change in the employability agenda. There also needed to be an emphasis on using social and multimedia. Four students were recruited to work as interns on the University's Excel Placement Programme for twelve weeks over the summer of 2014, working in partnership with Faculty and University partners on the following activities:

- » The student interns identified the need for branding to bring together all the new and existing employability activities under one umbrella and the Mission Employable brand was subsequently launched via the [team blog](#). A key focus of the working group was student-led activity to effect change in the faculty
- » The interns, in partnership with Dr Quince, identified the need for engaging employers, therefore an external advisory board was formed, led by two of the student interns. Its aim is to increase employer engagement and support identification of potential experience opportunities for students. It is structured as a core board with active members together with a wider network of members who would be invited to

participate in specific events and activities. This is all within agreed terms of reference that define roles and responsibilities and identify benefits for all members

- » The intern team also identified the need for engaging alumni, therefore an alumni network was formed. The interns created, led, developed and launched the VIP Alumni Scheme (now called the Humanities Alumni Network). A key aim is to raise awareness (amongst current students) of the importance of developing employability skills during a degree. It was felt important to create the conditions for alumni and students to engage online, therefore a multi-channel approach was adopted using social media such as the professional network, LinkedIn, Twitter and Facebook
- » The students interns also worked in partnership with the University's Careers and Employability Service to create content for a pilot compulsory undergraduate first year employability module, with the intention of creating similar modules for second and third year students in future years. Learning resources were created which can be customised to specific disciplines within the faculty and which link with Mission Employable social media feeds, enabling students to research their personal career preferences and alter and plan their professional development
- » A third intern led the development of a Faculty peer mentoring scheme to support new students and to develop employability skills relating to mentoring. The scheme is non-paid and is for all incoming humanities students, with 168 mentors in total. It is structured as a pair of mentors (paired by mixing different levels of study) from each discipline helping no more than fifteen mentees. Meetings are held every two weeks throughout semester one, with extra or one-to-one meetings held at the discretion of the mentors
- » The fourth intern undertook research and evaluation, including researching student-led change activities within the UK higher education sector. This led to the

creation of a report, which detailed recommendations including the need for greater creativity in classroom group work and particularly for higher levels of student engagement

- » This activity included development of a reflective tool for use by students to help them reflect on their employability related curricula or extra-curricular activities. The tool takes two forms: a quick online 'quiz' for students to record their experience and an end-of-activity 'case study'. This showcases the employability skills used and developed through each activity and demonstrates their value to potential employers
- » The four interns also worked in partnership with fourteen other student interns from the institution's eight faculties on a university wide initiative - Southampton Opportunity Project - to showcase student curricula, co-curricular and extra-curricular activities and demonstrate student employability skills (see www.soton.ac.uk/opus)

Technology

A range of social media and multi-media underpin the initiative and engage students, staff, alumni and employers:

- » Communications and engagement between the team, Faculty, students and alumni are through a **team blog** (WordPress), regular digital Faculty newsletters (PDF), a **Twitter account**, a **Panopto** video and **Facebook**
- » Students used Facebook engage with their peers for example using polls to identify event ideas, calls for volunteers, event topics, event notification/promotion and feedback
- » The professional network LinkedIn is used to support the alumni network with LinkedIn groups created for each of the seven humanities departments. Alumni were invited to join the groups by faculty staff and student partners through the Mission Employable student working group. Students can join the groups

through the virtual learning environment (VLE) in order to engage with former students and request advice and guidance

- » **Scoop.it** was used to build research and profiles on HE group activity and employability, enabling teams to share research findings and contribute to raising the profile of Mission Employable
- » Students from humanities' subject societies and course representatives (members of the Mission Employable Student Working Group) were encouraged to create web spaces to showcase employability events and activities (see example: <http://blog.soton.ac.uk/mlemployabilityonlineresource/>)
- » Technology-enhanced learning approaches were used within the compulsory employability module. For example, the first face-to-face session used **Kahoot!**, an online quiz accessible by smartphones and tablets. Answers were projected onto a screen in the lecture hall and used as a starting point for discussion on employability skills
- » Relevant online employability resources were signposted according to students' needs. These included graduate videos (YouTube) on former students' 'Journey to Work'; instructional videos on creating a CV including video versions; developing digital skills to improve professional online presence using social media. These were all illustrated by case studies, together with ideas to engage with new platforms that can allow for even greater engagement with employers for students already on Twitter and Facebook
- » Mentors from the second and final year cohorts were recruited using Facebook, Twitter and e-mail and using an online **iSurvey** application. They engaged with their mentees via Facebook Groups to encourage interaction before arrival at Southampton
- » Once the mentors had been trained on campus, an exclusive Facebook group was created where all the mentors from humanities' seven disciplines could share best practice and resources with guidance and support from the student Peer Mentoring Coordinator. Additionally, mentors used online tools like Doodle Poll to organise meetings with their mentees

Impact

Mission Employable has been highly successful in overcoming the challenges associated with lack of student motivation with the employability agenda. The scheme has validated the thesis that development of student employability needs to commence at the beginning of a programme of academic study.

Students, acting as agents of change and working in partnership with staff, have been highly successful in raising the profile of employability amongst students and staff. They have also successfully facilitated engagement between students, employers, staff and alumni. Use of social and multimedia technologies has been pivotal to facilitating interactive engagement between students, employers, alumni and staff with all of the Mission Employable activities. These include mentoring, promotion of events and the employability module.

A valuable set of multimedia learning resources has been created (for the employability module) where there is significant emphasis on supporting students in using social media and multimedia to engage with employers and alumni and showcase their rounded selves. This set can be used time again and built on.

The use of social media by mentors for mutual support and sharing of resources and best practices has been highly effective, evidenced by the high degree of collaboration between them. The Mission Employable initiative has had a significant impact on developing the employability skills of the interns themselves. For instance, one of the interns used his experience of working on Mission Employable in an interview for a role of Strategy Analyst with a Fortune

1000 multinational company to illustrate and evidence his suitability for the job, which he secured. In particular, the CEO was impressed with his use of digital media to present, justify and explain strategic decisions and how he used such media to engage with and influence others.

Sustainability

The Mission Employable initiative is now forming further partnerships with a greater number of students. It will be sustained and embedded in the Faculty of Humanities and enhanced as follows:

- » More detailed information, advice and guidance will be provided on using social media such as LinkedIn to communicate, engage and influence stakeholders, especially in using social and multimedia for professional purposes. This is particularly being piloted through the second year Humanities Employability Module, which will use the e-portfolio platform Pathbrite as the driving force behind all student engagement with the module
- » Promoting further student collaboration
- » New digital support for students working and learning at a distance from Southampton
- » Empowering students to become more self-sufficient and self-directed
- » Developing more advanced website tools to support student-led events

Furthermore, the Director is now in discussion with the University's Careers and Employability service to see if Mission Employable can be scaled up to become an institution-wide initiative.

Lessons learnt

A number of lessons have been learnt:

- » A key lesson learnt is the importance of encouraging students to think about career-planning much earlier

than students have done in the past. Simultaneously they gain valuable experience enabling them to lead, shape and run events for themselves and their peers. The initiative has seen humanities students embrace this approach, together with the use of social media and multimedia, to create their own future career opportunities. The adoption of Pathbrite in Year 2 will further encourage students to take control of their own professional development

- » Another key lesson learnt is the importance of students reflecting on their experiences, and recording and articulating how they have developed. These activities are supported by an online quiz and students producing a case study to showcase their employability skills
- » Attention to detail in the mentoring process was a critical success factor for the initiative. This included student-led training sessions for the mentors, enabling them to understand their role and develop their skills set together with information and guidance on good practices via a Mentor Handbook. Mission Employable will be furthering this detailed approach through the creation of a dedicated Peer Mentoring website for 2015/16
- » A formative approach to evaluating the initiative was also crucial for success. For example, mentors would send informal reports to the student Peer Mentoring Coordinator so that the initiative could be regularly monitored for improvement and successes. This has allowed an agile approach to progression with the mentors at the centre of the change process
- » The Mission Employable Student Working Group has been highly effective as the means of keeping students at the centre of employability provision. It is the point of review for the Employability Module and Peer Mentoring scheme and leads all complementary activity under the Mission Employable brand.

Find out more

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F. Birmingham City University

Title

A range of online simulations, virtual case studies and serious games to support health students in developing and practicing clinical and employability skills in a highly efficient manner and without causing harm or distress to patients.

Organisation

Birmingham City University: Online Simulation and Immersive Education Research and Development Group (OSIME RDG), Faculty of Health, Education and Life Sciences.

Birmingham City University has long had a strong commitment to student employability with embedded institutional structures and processes. Employability is deeply integrated into all courses; professional and student mentors support students, and employers and alumni are engaged in both curriculum design and delivery, with a large number of courses recognised by professional bodies. There is a strong focus on placements, student entrepreneurship and enterprise as well as the personal, academic and professional development of all students. The University also has a strong pedigree in innovation in technology-enhanced learning and employability and this case study focuses on one such innovation Virtual Case Creator; developed by the OSIME RDG and used to create a wide range of **online simulations in the Faculty of Health, Education and Life Sciences.**

Summary

In response to health sector employer drivers and needs, a range of online simulations and serious games have been developed to augment traditional teaching methods. These provide flexible, context rich, authentic and learner centred skills development opportunities that incorporate a range of employability skills such as communication, time management, observation, analytic, problem-solving and decision-making/prioritisation (in pressurised scenarios) skills. The interactive scenarios have been created using software developed in-house called Virtual Case Creator (VCC) and allow students to develop and practice their skills without causing harm or distress to patients, thereby offering a highly effective and efficient means of training large and small student cohorts.

Context and challenge

Training and patient safety has always held a high profile within the health sector, but has taken on a new priority and urgency since the publication of the **Francis report** of the Mid Staffordshire NHS Foundation Trust Public Inquiry in 2013, which investigated high patient mortality rates and incidents of appalling care (Francis, 2013). The report called for an increased focus on the “practice” of care; for the establishment of consistent and advancing standards and the recognition of achievement amongst staff. Subsequent reports identified specific skills and systems deficits amongst some of the UK’s worst performing Trusts (Keogh, 2013), and advocated the adoption of a learning culture across the NHS that held patient safety as paramount (Berwick, 2013).

However, it is not always easy or practical for undergraduate students to practice and demonstrate competence in the entire range of skills necessary to ensure patient safety (e.g. undertaking a swallowing assessment, identifying and responding to changes in seriously ill patients in a range of contexts or using different assessment strategies to identify client needs in community settings). As a response, alternative technology-based approaches have been explored to find solutions for students to flexibly practice and demonstrate skills within authentic learning contexts without needlessly distressing or harming patients. Further drivers include the increased emphasis on supporting and enabling students to develop and profile, a broader range of transferable (or employability) skills, such as time management, observation, analytic, problem-solving, decision-making/prioritisation (in pressurised scenarios), compliance (with regulations and procedures), information and communications literacy.

Pedagogical drivers include a move towards more structured and situated learning during personal study hours to promote learning gains across and within more formal classroom activities. The increased use in health of higher fidelity simulation activities such as mannequin and actor based simulations, has also led BCU to promote more effective preparation for this type of learning by using online simulation learning activities as pre-requisites.

Making it happen

The Online Simulation and Immersive Education Research and Development Group addressed the problem by creating a range of online simulations, virtual case studies and serious games, using software developed in-house, called Virtual Case Creator - VCC. The software is used to create highly interactive and media-rich simulations. These augment more traditional teaching methods by providing flexible, context rich, authentic and learner centred skills development opportunities.

The software has been in development since 2002 and has been undergoing constant enhancement ever since, with the latest version building on ideas from the games industry e.g. incorporating reward and recognition features.

The Faculty of Health Education and Life Sciences has now produced over 30 interactive online simulations to support preparation for employment and key skills development – within a range of key areas: adult nursing, child nursing, mental health nursing, speech and language therapy and midwifery.

In one example (speech and language therapy), based within a final year largely placement based, undergraduate module, students are asked to engage in a simulation that places them within their first role as newly qualified staff. The simulation presents a range of skills based opportunities that are situated across a number of virtual settings. These include primary school, acute hospital and primary care health centre contexts. Within the simulation students have opportunities to develop their time and case load management skills, explore how to form effective relationships within other interagency staff, practice their clinical skills by undertaking a swallowing assessment and gain experience in managing different types of communications as well as other activities.

As students engage with these online simulations, they can gain awards by achieving performance levels within a number of cognitive skill domains eg the information finding award, reflects whether students have accessed policy documents and other supporting resources; the correct decision-making award rewards the choosing of

safe and effective practice actions and the prioritisation award, recognises that a learner is aware that in some contexts decision making needs to be prioritised for most effective practice. The system highlights which awards are achieved and gives detailed feedback as students progress. Reflexive practice is supported by enabling students to review, amend and/or re-order their actions at any point prior to completing a simulation.

Although these simulations utilise a largely open ended narrative, meters are used to provide a sense of progress to students and to give an indication of the difficulty of each scenario.

- » Resources meter – indicates the number of resources that are available and have been accessed within a simulation
- » All Decisions meter – indicates the total number of decisions; correct, less relevant and incorrect within a simulation
- » Correct Decisions meter – indicates the number of correct decisions within a simulation

The system also makes use of leader boards to promote amongst students a greater awareness of their progress relative to that of their peers. To make comparisons “safer” for students, they are asked to create a pseudonym when they enrol onto the system and it is this name that appears on the leader board which ranks students by the number of awards achieved and then the total points they have scored.

The system is not like other games based simulations where emphasis is placed on visuals and interactions reduced to a series of multiple choice questions. The VCC system is different in that students have to take a less linear path through each simulation programme, where a narrative, of varying strengths, walks students through clusters of decision-making points requiring the use of cognitive skills to identify the most appropriate decisions and where required, the most appropriate decision sequence.

On gaining the required awards for a particular simulation, students are given a certificate (signed by a module or course leader) that they are required to store in a paper or e-portfolio. On some courses students are asked to incorporate their certificates into their “on-going record of achievement” folders and show these to their practice placement mentors, as evidence of their learning. The certificates highlight the different skills that the students have acquired and demonstrate how these are linked to professional competency frameworks, which is of high importance to employers.

Additional features include:

- » A “Time” award. This reflects the reality that many activities, such as information finding, questioning, problem-solving, decision-making and prioritisation, need to be made in a time-efficient manner, and within time constraints. Efficiency in thinking and practice are important employability skill in their own right.
- » “Save” feature. Currently being tested and scheduled for deployment during 2016, this feature allows students to engage in simulations for short periods of time, saving their progress as they continue. This feature is particularly important for time-poor learners who may be using the simulations in practice settings.
- » “Cognitive Schema” support. This feature, currently being tested, allows teachers to group decisions within labels that appear on the simulation interface. Here the labels represent a specific cognitive schema or framework that the simulation learning is trying to support.

Development of simulations and serious games using the VCC software is supported by an interdisciplinary team that includes academic and practice staff, learning designers, 3D artists and programmers ensuring that every simulation is bespoke to the teaching and learning context within which it will be used.

Technology used

The technology used to develop the VCC system is based on a SQL database, with Javascript as the middle tier and HTML5 as the interface (this has recently been upgraded from Flash). Media includes interactive panoramas and main scene images, chroma-keyed video, animation and sound. There are many advantages with the new HTML5 interface eg allowing operation on a broad range of desktop and mobile devices.

Considerable attention has been applied to making the simulations highly accessible (meeting WCAG Level 1A and Level 2A standards), including keyboard control and this has been helped by the move from Flash to HTML5.

There is an “administrators” view of the system which allows, for instance, student performance and progress to be monitored and for updates to be made to live simulations where necessary. Students have a “dashboard” which provides an overview of their progress towards achieving their awards, various analytics and provides access to their certificates.

Impact

The simulations and serious games have proved highly successful in supporting cohorts of students to develop and practice skills that include a range of employability skills such as time management, observation, analytic, problem-solving, decision-making/prioritisation (in pressurised scenarios), compliance (with regulations and procedures), information and communications literacy. Evaluation findings thus far indicate high levels of self-efficacy associated with skills development amongst students using these simulations. It is clear that these “simulated authentic” approaches to skills development are effective in helping BCU, and other organisations respond to many of the drivers shaping health and social care education today.

Sustainability

Simulations and serious games are now an established part of the overall teaching and learning environment in the Faculty of Health, Education and Life Sciences and the **Virtual Case Creator (VCC)** software is continuing to be enhanced to introduce new learning features as well as features that make simulation and game development more efficient.

The VCC software is currently being developed for use at BCU in other discipline areas e.g. education and social care and will also be used to support 3D avatar driven simulations in the future. Many of the simulations and serious games are licensed to other institutions e.g. The University of Greenwich, University of Sheffield and Middlesex University.

Lessons learnt

- » The VCC provides deliberately unstructured, non-linear scenarios that aim to facilitate the safe development of a range of cognitive skills.
- » Once developed online simulations have very little overhead and support iterative and cost effective learning in contextualised environments.

Find out more

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- » Case study written up by Dr Peter Chatterton (peter.chatterton@daedalus-e-world.com).
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G. Glasgow Caledonian University

Title

Using wikis to cost-effectively embed work-related learning and employability development into entrepreneurship teaching, learning and assessment at the Glasgow School for Business and Society.

Summary

The case study describes how large cohorts of business students collaborate with an employer such as an overseas entrepreneur. Together they research and problem-solve a real business issue using a wiki to record and share experiences and perspectives. The students are supported by staff and adopt a pre-designed set of formal learning and assessment activities that help develop key employability skills. Team-working (and true collaboration), written communication, planning, organisational skills and international working are among the skills developed. The case study highlights how technology can offer cost-effective solutions for embedding work-related learning, employer engagement and entrepreneurship into teaching and learning.

Organisation

Glasgow Caledonian University: Glasgow School for Business and Society

Glasgow School for Business and Society integrates complementary disciplines and expertise in business, law and social sciences and places emphasis on the social context within which business is undertaken. Its programmes are aligned with the institutional graduate attributes framework which focus on discipline knowledge, communication skills, learning and research, creativity and confidence and citizenship.

Context and challenge

The Glasgow School for Business and Society encourages both staff and students to be creative in their thinking, international in their outlook and innovative and entrepreneurial in their actions. It aims to develop student employability and self-employability skills, including enterprise, leadership, group working and problem-solving. The key challenge faced by the School is how to achieve

this cost-effectively, as more traditional approaches, such as student placements, can be time-consuming and costly to set-up and maintain, particularly within an international context. The School therefore setup a project team to explore how web 2.0 technologies, particularly wikis, could be used to support collaborative approaches to students and staff engaging with employers on real-world problems.

Making it happen

The project team started exploring use of wikis back in 2009, initially working with entrepreneurs in Scotland and more recently, with international entrepreneurs e.g. in Canada, on both undergraduate and postgraduate programmes. The process involves learning activities, assessment, knowledge management and collaboration in a tri-partite arrangement (staff, students and entrepreneur) and working at a distance. Students are provided with feedback from all stakeholders.

The process typically works as follows.

1. Staff initially liaise with the entrepreneur to identify two-three business problems which are then adjusted by staff to ensure that they are within the capabilities and time-frames for students to work on. A typical problem would be an investigation of the entrepreneur's market and competition
2. Once a clear brief is agreed, students are split into three large groups of 20 students each of which has four-five subgroups comprising four-five students. The research questions are allocated to these sub-groups and wiki groups are set-up on the VLE where the entrepreneur has access
3. Each week, students have a task to respond to the research questions and a feedback/ feedforward system is used by staff to engage with students and assess their performance, based on the marking criteria. The entrepreneur can also provide feedback, but cannot see the feedback delivered by staff

4. Students are required to engage with the entrepreneur e.g. by asking questions about the sector and these processes incrementally push the student forward and support initially non-engaged groups
5. In addition to the wiki work, student groups collaborate face-to-face in seminars where staff use the wiki to facilitate dialogue round the research questions. The history feature of the wiki allows tutors to see who is and is not contributing, allowing them to support non-engaged students. It also allows students to go back and correct items

The wiki essentially supports the growth of a collaborative and living document in which images, video and hyperlinks can be embedded alongside text.

Impact

Feedback from entrepreneurs is that the engagement with students and staff helps them to validate their knowledge and thinking as well as helping to find new information, and some clients repeat the experience with new cohorts, with one client putting up a student prize. Academic staff also gain from the experience as they can collaborate with the real world and on real business issues. Students gain from the experience by developing their employability skills, such as communication (with people they do not know), organisation, planning and collaboration skills - they also have to work professionally e.g. in ensuring confidentiality.

The use of the wiki contributes to the cost-effectiveness of the learning model and engagement with employers as well as allowing engagement with international employers which would otherwise not be practical or economic. This has the added benefit of engendering an international perspective and culture for students and staff. The model also offers 'any time, any place' learning.

The learning model promotes collaboration rather than co-operation, through the use of agreed briefs and the active participation of the three stakeholder groups e.g. in editing, commenting on and building on each other's work.

Sustainability

The technology-enhanced learning model is highly sustainable due largely to its cost-effectiveness and support for engaging with employers worldwide and dealing with large student numbers.

Lessons learnt

A number of lessons have been learnt:

- » Despite generally being tech-savvy, some students are ill at ease with the wiki concept and some international students have had a negative perception of wikis, influenced by their lack of trust in Wikipedia. This highlights the importance of the student wiki induction session
- » Some undergraduate students would initially hesitate to contribute due to worries that they would be disadvantaged compared to late-starters, who preferred to wait and learn from others' contributions. This re-enforced the need for the regular staff formative feedback/ feedforward processes
- » Some employers have difficulty in engaging with wikis from a technical perspective, therefore they need induction training
- » It is important to hold initial dialogue on the client brief and their problem may need modifying and re-articulating. In some cases, students will take the client brief and produce a counter brief which they feel aligns with logistics and their capabilities
- » The model is particularly suitable for engaging with SMEs, though business pressures can mean that some do not sufficiently monitor and engage with the wiki e.g. in providing feedback to students

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- » The lack of direct face-to-face communication between students and entrepreneur can be a problem leading to lack of empathy and trust between the students and entrepreneur. However, this can be somewhat addressed by staff requiring students to critically review the brief and engage with the entrepreneur early on in the process.

Find out more

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H. University of London

Title

An Enhance your Careers and Employability Skills MOOC (Massive Open Online Course) delivered via the Coursera platform.

Summary

In 2014, the Careers Group at the University of London developed the world's first **careers and employability skills MOOC** on behalf of the University of London **International Programmes**. It was delivered via the Coursera platform and attracted 89,000 students from 208 countries across the world.

Organisation

University of London: International Programmes and The Careers Group

In 1858, the University of London established the University of London International Programmes to give students around the world access to top British education. This makes the University of London International Programmes the world's oldest provider of distance and flexible learning.

Founded in 1909, The Careers Group, University of London is a consortium that delivers career development and associated services to education institutions and corporate clients across Europe. These services include producing a range of technology-supported employability services and products. They range from employability webinars, accessed by students whenever and wherever they like, to **Careers Tagged**, an extensive online careers information library hosted by The Careers Group.

Context and challenge

The University of London International Programmes offers a range of educational MOOCs that have been developed on the Coursera platform and which are offered for free, with a small fee paid at the end of the course to obtain a certificate from Coursera. It identified a ready audience of current students and experienced professionals for such a course on careers and employability.

Making it happen

The University of London Careers Group developed the MOOC on behalf of the University of London International Programmes, aiming to support students in effective decisions about their future career and controlling their professional development through honing their critical thinking and employability skills. The MOOC is therefore suitable for anyone undertaking some form of study, regardless of academic discipline, interests or employment background. Six key universal themes were identified:

- » Self-awareness (What do you want?)
- » Skills awareness (What can you offer?)
- » Career readiness (Are you ready to find success?)
- » Articulating your experiences (How do you express yourself?)
- » Making a good impression in person (What impact do you make?)
- » Networking online and in person (How do you build fruitful relationships?)

The six-week course delivered in English was essentially asynchronous, consisting of:

- » self-reflective exercises
- » questionnaires (e.g. based on three-five specific questions for each theme)
- » active reading tasks
- » short segmented videos of lecturer-led delivery accompanied by slides, practical assignments (e.g. informational interviewing)
- » short segmented videos of related activities (e.g. mock interviews) to provide feedback on

Overall, there are 60 videos of length ranging from 30 seconds to 20 minutes, utilising 14 presenters and six employers.

The course provides regular opportunities for students to reflect on each theme as well as activities to complete and opportunities to contribute. Students were encouraged to give feedback on each other's reflections either via the peer assessment tool or via the forums. Self-evaluation questionnaires help students to monitor their progress. Technical support for students was provided through Coursera and students were expected to allocate three-six hours per week in participation.

The Careers Group team monitored and moderated the different forums which became highly active, typically attracting 10-12,000 posts, though the system became difficult to navigate with such large numbers of postings. The moderators helped to overcome this by, for example, creating new discussion threads that summarised existing long discussion threads. The moderators were also pro-active in seeding questions in the forums.

The forums generated a rich resource of ideas and links and benefitted from the international spread of the participants: for example, students would provide ideas, support and opportunities for other students to take advantage of in different countries. Many discussions focused on different cultural and working practices across the world and how these impact on employability, careers and international working.

Technology

The MOOC is based on the bespoke Coursera technology platform. As such it provides a range of features such as video lectures, interactive quizzes, peer graded assessments and mechanisms to connect with instructors and other students, such as via forums.

Impact

The course was a great success and attracted 89,000 regularly participating students from 208 countries across

the world with an age range from 15 - 85 and 44% female, including both undergraduate and postgraduate students. The majority of participants were not in full or part-time education and the majority were full-time employed. As with any MOOC, regardless of subject, the initial registration (126,000) was greater than the number of actively participating students on the course, although this 'conversion' rate was higher than is normally experienced on many other MOOCs. 96% of the participants found the course experience 'excellent' or 'good' (41% Excellent, 40% Very Good, 15% Good). Furthermore, the overwhelming majority of participants reported that their confidence had increased in each aspect of their career development. Limited evaluation with employers produced positive feedback.

Sustainability

Following the 2014 MOOC, the course has been successfully run again in a very similar format from June-July 2015 with a smaller cohort of 82,000 registrations with 45,000 active students. Once again participants came from over 200 countries across the world. The evaluation survey for this iteration of the course is still being collected but anecdotal participant feedback has yet again been very positive.

Future possibilities include offering the course on an on-demand basis (i.e. available to start at any time) which may also include a range of enhancements such as:

- » Introducing synchronous features e.g. via Google Hangouts
- » Remodelling materials for a Moodle VLE
- » Possible adoption of e-portfolios
- » Development of a sophisticated questionnaire to provide a diagnostics tool to help students to navigate the course in an individual way and potentially provide common pathway options e.g. students wanting to improve their CV

- » Supporting University of London programme teams in integrating the course into their curricula
- » Systems to support student progress monitoring

Materials from the course have already been successfully migrated to a University of London Moodle VLE. These will be used as a basis for developing an internal Small Private Online Course (SPOC) at one of the University of London Colleges.

Lessons learnt

A number of lessons have been learnt:

- » Some of the most valuable input to such a course can come from the participants, particularly in an international context. This provides a rich source of data on which to build on in future MOOCs
- » There is a global appetite for career learning, networking and peer support, reflecting a survey that showed 41% found their last job via networking
- » The platform used (Coursera) was not ideally suited for grading soft topics such as 'aspiration' due to the constraints of its peer assessment mechanism
- » The MOOC provided the opportunity to survey a large number of global participants: e.g. highlighting that leadership is the skill that they are least confident about demonstrating
- » Not all students provided peer feedback, therefore mechanisms need to be developed to encourage this
- » The forums became difficult to navigate with large numbers of postings and this can be overcome, to an extent, by moderators starting new discussion threads which summarise prior ones

- » There is a possibility that some students may register mistakenly presuming that individual guidance will be provided. This may lead to them disengaging from the material if that is not possible due to the sheer size of the cohort

Find out more

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I. Bath Spa University

Title

An international virtual internship scheme supporting cross-institutional collaboration in developing blended and distance learning modules as well as the professional development of students, supported by a broad range of technologies.

Organisation

Bath Spa University: Learning Technology Group

Bath Spa University: Learning Technology Group
Bath Spa University places considerable emphasis on international partnerships and exchange programmes, aiming to attract international students and developing its graduates as socially engaged global citizens. The learning technology group of the University comprises a small number of learning technologists, one for each of the institutions' five Schools. They aim to raise awareness of opportunities for the use of technology in teaching and learning throughout the institution and support programme teams in developing blended and distance learning.

Summary

The Learning Technology Group pairs postgraduate students in learning design at international universities with course teams at Bath Spa University to enhance curricula with blended and online approaches. At the same time, they mentor the students in developing and evidencing their professional knowledge and skills based around the Association for Educational Communications and Technology (AECT) professional knowledge and skills framework. A formal structure and processes have been put in place for the virtual internship which involves a high degree of virtual collaboration. The internship requires the use of a broad range of technologies to efficiently and cost-effectively support communications, collaboration, development of online resources and student personal learning and professional development management. The scheme provides benefits to all those involved and continues to attract international students as well as academic teams to participate in it.

Context and challenge

Bath Spa University is very much a practitioner-based institution with the teaching and learning model being mostly based on face-to-face delivery. There is demand from the institution's five Schools to move towards more flexible delivery models however, the Learning Technology Group has limited numbers to support course teams in curriculum redesign (covering over 140 courses - not including combined courses). The Group therefore identified a need to build capacity in its support for academic staff and began to explore low-cost options in the form of international virtual internships which would also embrace the institution's goals for international partnership working.

Making it happen

The International Virtual Internship scheme was set up by the Learning Technology Group in 2000. It pairs postgraduate students in learning design at international universities with course teams at Bath Spa University and they are each supported and mentored by one of the five learning technologists. Their aim is to collaborate to jointly re-design course modules with the academic team supplying the academic content. The learning design students support the academics in a formal learning design process aiming to reconfigure the modules for blended/online (or distance) delivery. That typically includes production of artefacts such as video, podcasts and web materials. The internships typically last from 8-12 weeks and include 10-15 postgraduate students from a range of institutions, currently all in the USA e.g. Purdue University, Pennsylvania State University, Michigan State University. There are typically 80-90 applications by postgraduate students to join the scheme each time it is run.

There is a formal process for the internship which commences when schools can apply to join the scheme. At this point they have to commit to producing the academic content and to work with the international postgraduate students in a structured learning design process, recognising that the students may not necessarily be subject specialists, though are specialists in learning design. There are a range of virtual client meetings which mentors support

and the first deliverable will be a specification and storyboard for the re-designed module, with an explanation of the relevant learning module. Subsequent activities include usability testing and prototyping.

The students also have weekly virtual meetings with their mentors, with each of the five mentors supporting two-three students. These meetings focus not just on the student work activities but also on their professional development. The meeting discussions are structured around the skills framework of the Association for Educational Communications and Technology (AECT). As well as embracing learning design specifics (e.g. content knowledge and pedagogy), these also cover professional knowledge and skills such as collaborative practice, leadership, reflecting on practice, assessing/evaluating and ethics – all of which come under the employability banner.

Mentors also hold individual virtual meetings with students where they provide feedback and discuss progress and professional development. The mentors will also construct a video of general feedback and issue to the student cohort.

Use is also made of asynchronous discussion groups in order to develop a cohort community of practice, which focus on a variety of topics from technology-specific ones to learning design and delivery. The mentors facilitate these discussions.

Students are also required to maintain an ongoing e-journal in which they record and evidence their progress, document meetings and feedback and reflect on their learning and professional development. Students are also required to provide peer feedback e.g. feedback on storyboards, learning design and usability. Students are also asked to prepare a video and final summative reflection on their overall experience and this is a formal requirement which will enable them to receive a letter of recommendation and gain credit for their internship. By the end of the internship, the students will have produced evidence of their experience. That will include a learning design specification/storyboard, results of usability tests and various learning artefacts such as videos, podcasts and

other web-based materials. They will be able to use these to support their future engagement with employers, though their access to the Bath Spa VLE will not continue beyond the internship period.

Mentors also have their own asynchronous discussion group in the form of a community of practice.

Technology used

The following technologies are used to support the students:

- » Students are provided with access to the institutional VLE, Blackboard, and are given a copy of the module on which they are working on
- » Students also have access to a range of learning design support tools, most of which are open source (or free trial software). They can use these for creating videos, podcasts and web materials e.g. Jing, Blender, Audacity. OpenOffice is recommend for creating Storyboards
- » Virtual meetings use synchronous technologies: initially, this was Blackboard Collaborate, though the institution no longer subscribes to this, so technologies such as Skype and Google Hangouts are used. Big Blue Button is also being evaluated for this use.

Impact

The scheme provides benefits to all those involved. The adoption of international postgraduate students in learning design brings new creative approaches from a young and newly qualified generation together with different cultural perspectives and ways of working. It builds capacity of the small group of institutional learning technologists at Bath Spa University and helps their professional development with new perspectives. Academic staff are introduced to a formal process of learning design to embrace new technologies which they can build on for their own professional development and their courses benefit from new blended/online design and materials. In evaluations, academics report that the process makes them think more about what they are presenting and how they present it.

The Learning Technology Group follow up with students as they progress into their careers and ask them to complete a survey as to how useful their experience has been in obtaining employment and in their work and the feedback is generally that the experience has been highly valuable.

Sustainability

The International Virtual Internship programme will be sustained as it provides benefits to all those involved. However, the scheme is not easily scalable as its success is based on a relatively low student/mentor ratio - and this is constrained by time constraints.

Lessons learnt

- » The internship scheme needs to be formally structured with well identified roles, responsibilities and processes
- » The scheme must not just be about design and development of courses - it must also embrace the professional development of the students and key processes must be put in place to require students to continually reflect on their learning and professional development and to support them in this process. Rewards are useful motivators in the form of credit and letters of recommendation
- » Virtual internships, by definition, need to be underpinned by asynchronous and synchronous communications and collaboration technologies as well as personal learning spaces to support students in the process of reflecting on their learning, professional development and evidencing of learning

Find out more

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J. Staffordshire University

Title

A top-down approach driven by senior management to embed graduate attributes, student employability and work experience/work integrated learning into all curricula, using e-portfolios to support student reflective practices, based around the graduate attributes framework.

Organisation

Staffordshire University

Since 1914 the institution has provided vocationally inspired education. In 1992 the institution, known then as Staffordshire Polytechnic, became Staffordshire University and in 2013, it set out to become a UK Centre of Excellence in STEM (Science, Technology, Engineering and Mathematics) with the launch of a flagship Science Centre. The University has long established educational partnerships both within the UK and overseas and is committed to offering its students access to both academic study and commercial experience.

Summary

Staffordshire University set out to embed more consistent approaches and processes to developing student graduate attributes, employability skills and commercial experience across its entire programmes. To achieve this, it identified the need to embed the attributes in assessed learning outcomes together with developing the Staffordshire Graduate Employability Project (SGEP). The SGEP is a year-long customised core module that develops student reflective practices and employability skills within the context of undertaking work experience/work integrated learning within the curriculum. Assessment is by the student's e-portfolio (PebblePad) that includes reflections on personal and skills development (badged and tagged against the graduate attributes), incorporating international/global aspects. An evaluation exercise is ongoing (including a longitudinal study to follow employability progress beyond graduation) but early evidence suggests that an increased number of students are engaging in work experiences. Over 1,300 students and 100 faculty staff have directly engaged with the Staffordshire Graduate Programme and developed closer links with employers. Evidence also suggests that the use of e-portfolios to support student

reflective practice has been generally successful, though not all students and staff engaged with it to the full planned potential. A Staffordshire Graduate Forum was established as a key group to drive forward and sustain the graduate attributes and student employability developments.

Context and challenge

Back in 2011, the University identified a requirement for change: whilst many programmes offered commercial experience and development of transferable skills, this was not so for all programmes. Furthermore graduate attributes were generally not explicitly or consistently articulated nor incorporated into learning outcomes and assessment. It was recognised that if graduate attributes are not assessed then they will not be taken seriously by students or staff. Alongside this, employers and government were demanding that Universities address the issue of student employability with employers, in particular, increasingly demanding to see achievement and evidence of employability skills in student job applications. Senior managers also saw the focus on employability, enterprise and entrepreneurialism as an important differentiating factor for the University's offering. Senior managers were addressing a period of unprecedented change, with fierce competition for students, growing student expectations and the need to improve the institution's standing in NSS/League Tables.

Making it happen

In order to address the employability agenda, senior managers at the University decided to implement three key initiatives more or less simultaneously: the first focusing on defining and embedding an agreed set of graduate attributes across all programmes (with a strong focus on employability, enterprise and entrepreneurialism), the second on restructuring curricula, with an emphasis on larger modules and the third, the development of the Staffordshire Graduate Employability Project (SGEP) aiming to develop employability skills through a customised core module.

Following extensive consultation with staff, students, employers and employer/professional bodies, a set of six graduate attributes were established:

1. discipline expertise
2. professionalism and professional integrity
3. global citizenship and sustainability
4. communications and teamwork
5. reflective and critical learner
6. lifelong learning

These six attributes intend to reflect a key institutional mission: "The Staffordshire Graduate represents a set of qualities that the University passionately believes is necessary for success in the 21st century. The Staffordshire Graduate is a reflective and critical learner with a global perspective, prepared to contribute in the world of work." All programme teams were required to map their programmes to the graduate attributes. Rather than rolling this out incrementally i.e. when programmes came up for re-validation, the institution decided on a big bang approach. This would require all programmes to undertake this activity for revalidation, demonstrating in detail how the Staffordshire Graduate Attributes would be addressed through the curriculum and defined in module descriptors.

Alongside this, the Staffordshire Graduate Employability Project (SGEP) was established, focusing on awards for employability skills through a customised core module and using e-portfolio technology. Disciplines such as drama, theatre, arts, law, business, science, media and sport piloted this new scheme. Simultaneously, the Academic Board decided that all undergraduate programmes should normally be structured on the basis of modules of 30 credits with normally no more than two 15 credit modules per level. A University Standing Panel considered proposals made by programme teams which were required to include a

detailed mapping of where in the curriculum the graduate attributes are located and assessed.

The Staffordshire Graduate Employability programme included the development of a range of online learning materials focusing on employability, enterprise and entrepreneurship which could be contextualised to specific discipline areas. A year-long modular delivery allows students maximum flexibility to develop their reflective practices as well as employability skills within the context of undertaking work experience/work integrated learning within the curriculum.

A further goal of the module is to develop student skills and attitudes enabling a culture of identifying opportunities, creativity, risk taking and innovation. At level four, student activities include co-curricular events, interactive skills workshops, role-playing, teamwork exercises and a personal development statement as part of the reflective e-portfolio. At level five, the focus is on the development of entrepreneurial and innovative mind-sets, behaviours and skills. Students are introduced to the value of innovation, creativity, collaboration and risk-taking skills which are applicable to a wide range of careers and disciplines, from the public sector, charities, universities and social enterprises to corporate organisations large and small and new venture start-ups. The emphasis continues to be upon 'learning by doing', where learning takes place through personal experience, social interaction and reflection. Assessment is by the student's reflective portfolio (PebblePad) which includes reflections on personal/ skills development (incorporating international/ global aspects relating to work), reflection on learning from all activities, and review areas for further development

Students each have a personal tutor to support their longitudinal progression.

Technology used

The e-portfolio PebblePad has been used to support the Staffordshire Graduate Employability Programme, underpinning student reflective practice, which is a core

learning element of the programme. The e-portfolio requires students to not only record their learning experiences, but also to record their reflections, badged and tagged against the graduate attributes. This innovative badging and tagging is used to promote self-directed personal development whilst providing evidence for seeking employment upon graduation.

Students and staff were provided with comprehensive induction/ training in using the e-portfolio for reflective practice and for evidencing skills, learning and achievements. Some (but not all) students collected multimedia artefacts e.g. for evidence and would tag/ map these against the graduate attributes. PebblePad templates were created around the graduate attribute framework to make it easier for students to use.

The University has decided to move its use of e-portfolios from PebblePad to the in-built e-portfolio tool within the institution's VLE (Blackboard), though this move is not necessarily one based on teaching and learning efficacy.

In addition to the use of e-portfolios, the Careers Centre has implemented a strategy to move from a guidance model to one of coaching supported by online resources. It bases this around an employability e-learning package on licence from **Abintegro**, branded 'eCoach', which provides an employer-led and interactive set of employability resources that can be built into curricula and will help direct students into individual coaching support. When students log on to eCoach they are presented with the offer of a coach and can register for one to be allocated to them.

Impact

The SGEP pilot commenced September 2012, with direct involvement from 70 faculty staff and 700 level four students. Every indication suggests both staff and students have engaged in the pilot with commitment and enthusiasm. Development of student employability has been evidenced by a number of activities such as increased numbers of self-employed graduates and start-up companies, student clubs and societies and increased levels of student

volunteering. A research and evaluation project is currently underway to establish impact e.g. a longitudinal study to follow employability progress beyond graduation. Early evidence highlights that an increased number of students are engaging in work-ready/ work experiences and over 1,300 students and 100+ faculty staff have directly engaged with the Staffordshire Graduate Programme. Furthermore, closer links with employers have been established across a variety of subject areas.

Early evidence also suggests that the use of e-portfolios to support student reflective practices has been generally successful, though not all students and staff engaged with it to the full planned potential.

Sustainability

The Staffordshire Graduate Forum was established as a key group to drive forward and sustain the graduate attributes and student employability developments. This group continues to play a central role in monitoring and evaluating the delivery of the SGEP, which will be implemented with a phased approach. It will ultimately apply to all HE awards delivered on campus, by distance learning and at overseas or UK partners.

There is no HEAR project at the moment, although the institution is preparing for this with the intention for it to align directly with the SGEP activities.

In the light of the emerging success of the initiative, the institution is looking to develop an e-portfolio strategy.

Lessons learnt

Key lessons learned include:

- » Initiatives such as the graduate attributes and Staffordshire Graduate Employability Project need to be led top-down, driven by senior management
- » Graduate attributes and employability need to be built into assessed learning outcomes together with work-related learning/experiences

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- » Initiatives such as the SGEP need to embrace collaboration and cooperation University-wide. This was achieved via a structured induction programme to launch the pilot, the publishing of a university calendar of events, the appointment of student employability ambassadors-advisers and contributions from the Students Union to the establishment of a multi-media resource bank called the Staffordshire Graduate Experience (StaGE)
 - » Good practices in academic departments draw on the skills and experience of central services such as careers teams and academic skills tutors
 - » Reflective practices need to be built into programmes at the earliest opportunity
 - » Events should be created for students both within and outside of the curriculum e.g. employer events and practical opportunities

Find out more

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Appendix 4 - FE and skills case studies



A. City of Glasgow College

Title

Enhancing employability with e-portfolios.

Summary

City of Glasgow College has developed its own e-portfolio format to help stonemasonry apprentices present their skills for external verifiers and employers.

Prior to the e-portfolio initiative, apprentices could not capture or store evidence of their accomplishments in an electronic record of achievement despite the hands-on nature of their work. As a result, there was little opportunity for apprentices to appreciate the continuous nature of their learning or to show their achievements to others. Now apprentices can track their personal learning over time and move forward in a continuous and seamless drive for improvement. In addition, the new system has brought about significant improvements in the department's assessment processes and given a boost to student employability.

The number of students involved in the initiative is growing. Up to September 2015, 50 stonemason apprentices used the new portfolio system. Another 84 will take part by the end of 2015, with 50 more to follow in spring 2016.

Organisation

City of Glasgow College is home to almost 30,000 students from 135 different countries. Among courses in the faculty of building, engineering and energy, the college offers stonemasonry at professional development award (PDA) levels 6 and 7 for students already at work who wish to develop new skills or an aspect of their existing skills. Stonemasonry apprentices typically undertake 85% of their learning outside college in a stonemason's yard.

Challenge

The stonemasonry department identified a number of issues following a review of its assessment processes.

Primarily, teachers were conscious that assessment processes were weighted more towards administrative aspects than improving the quality of learning. The

apprentices were not encouraged under the existing system to record lessons learned, celebrate progress or reflect on their feedback. External verifiers only saw a brief paragraph about the feedback given to students; in contrast, teachers would prefer the verification process to delve more deeply, asking questions such as:

- » How was student activity recorded?
- » Did teacher feedback offer students guidance on how to improve?
- » Did teachers assess whether the guidance and feedback they had given to students was valid and reliable?

For their part, apprentices tended not to revisit their assessments and were only interested in the grades awarded. Anecdotal evidence also suggested that paper-based evidence, such as photographs, lacked a professional finish, were rarely shown to employers or used in interviews, and only provided evidence of work completed in college.

The department recognised that what was needed was a means of recording formative work, undertaken in the workplace as well as in college, combined with a way of effectively demonstrating any additional work students had been doing. In essence, a system for capturing and storing all the information relevant to an apprentice's progress, feedback and achievements. The e-portfolio with its embedded digital photographs and video recordings has proved very successful in meeting these requirements.

Using digital media has proved to have a number of advantages in itself. Firstly, employers concerned about images taken in the workplace for health and safety reasons, now approve any images included in students' portfolios, prompting employers to take a more active interest in their apprentices' course work. Secondly, digital video recordings act as a reflective tool, encouraging students to revisit their past assignments and learn from their mistakes and achievements. At the same time, teachers who were filmed giving feedback to their students have been able to

demonstrate to verifiers that their feedback has been helpful and rigorous. A further benefit is that teachers have been able to assess their own feedback, and adjust where necessary. Finally, the outcomes can be shared with prospective employers as a reflective and pictorial record of the interviewee's learning journey and accomplishments.

Making it happen

The department decided the e-portfolio should consist of two elements:

- » Written documentation which meets the mandatory requirements of the course
- » Rich media resources to add value to the written evidence

The plan was to create two types of portfolio that would work together. One would be student led, completed by the student then viewed and marked by the teacher; the other would be teacher produced. Ultimately the two elements would be assembled into one at the end of the course and would incorporate videos of assessments to provide a visual record of both the original work and the feedback given, as evidence for staff and external verifiers as well as students.

The written (and student-led) element of this process was developed using standard Microsoft packages so that it could easily be enhanced with students' images to provide a step-by-step account of their progress. The student would then complete a proforma supplying information on areas such as:

- » Practical activities undertaken
- » Quality and accuracy of their work (tolerances achieved)
- » Risk assessments carried out
- » Method statements including all formative work carried out up to the point of assessment

- » Responses to reflective questions such as "Have you been a successful learner / successful citizen / good team member?"

Once work has been completed and has met the required standard, the portfolio is hosted on the college's cloud storage service in PDF format while the teacher retains a copy on a master hard drive as evidence.

A salient feature of this approach is the chance to involve students actively in their own assessment. Students filming tutors as they undertake assessments have been able to focus more closely on the purpose and approach taken in each case. Another discovery has been iBooks Author, a free software programme from Apple, which enables students with iPads, Macs or iPhones to create a page for each of their units and embed links to their videos and image galleries. The software has proved straightforward to use; students have easily populated their pages with images and videos by dragging and dropping in files.

At the end of the process, apprentices can take the resource with them, incorporating it into their iTunes account to be viewed on iOS mobile devices or accessing it as a structured electronic PDF via the college's Microsoft OneDrive cloud account or as a printed PDF. Whatever the format chosen, each apprentice has a final product that is both professional in appearance and an excellent source of evidence for job applications and interviews. Since there are many opportunities for stonemasons to work abroad, e-portfolios in this format can also be shared electronically with prospective employers overseas.

Technology

The department has used widely available software to create its e-portfolio. Students build their evidence using Microsoft Word and Publisher files which can then be saved as Adobe PDF files and hosted on the cloud via Microsoft OneDrive. Students have also used Apple iBooks Author to provide a professional finish to their e-portfolios.

Impact

- » Staff report that students have acquired a greater sense of involvement, control and understanding of their learning as a result of using e-portfolios. They are able to track their own progress, revisit their work and acquire greater insight into the process of learning. Use of digital media has also encouraged a learning community; apprentices now voluntarily share ideas and photos via social networks such as Twitter and Facebook
- » The ability to choose their preferred format has enabled dyslexic students to record their work in either standard or dyslexia-friendly format. Dyslexic students have reported that for the first time they have been able to receive feedback with confidence. In addition, the department aims to record some information in MP3 format to provide an alternative approach
- » A significant reduction in the use of paper and printing has also helped minimise the department's carbon footprint while at the same time enabling students to progress into employment with greater confidence

Other departments in the faculty of building, engineering and energy are now interested in the e-portfolio system the stonemasons have pioneered. The potential is there to extend the initiative to other vocational areas.

More information

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B. South West College, Northern Ireland

Title

Forging links between education and industry.

Summary

The InnoTech Centre was set up by South West College in Northern Ireland to nurture the growth of technology and innovation in local companies. The centre has since become a nexus between industry and education, using the skills of its staff to match companies with students with specialist expertise in science, engineering or technology.

Organisation

With some 14,000 enrolments, South West College makes a major contribution to the local and regional economy by supporting a wide range of higher education, vocational and training courses on campuses in Cookstown, Dungannon, Enniskillen and Omagh.

The InnoTech Centre is based at the Cookstown campus and provides opportunities for training, technical mentoring and project management for local businesses aiming to adopt new technologies and embed innovative approaches. The centre has also worked on partnership projects with colleges, businesses and organisations outside Northern Ireland.

The centre is supported through input from the sector skills councils, local councils, regional enterprise development bodies and universities and is financed by the Department for Employment and Learning (DEL) through its Innovation Fund Employer Support programme. Stakeholders in the InnoTech steering group include representatives from industry who facilitate project development by providing consultation on aspects such as sustainable development.

Context and challenge

The UK economy depends on the success of its small and medium-sized enterprises (SMEs), and nowhere is this truer than in Northern Ireland. The college wanted to make a significant contribution to the government's agenda for growth through SMEs by becoming a key driver of local, sub-regional and regional economic development. To

achieve this, it first needed to promote stronger ties with local firms through involving students in their work. The aim was two-fold: students would gain first-hand experience of problem-solving in authentic work situations, and businesses would benefit from the fresh thinking and ideas of students. Bringing the two together in a collaborative partnership, however, required new ways of working.

Making it happen

The centre invites local SMEs to flag up business problems or product ideas so that they can be partnered with students with the right knowledge and expertise. Centre staff identify suitable projects, which typically last 10-15 days, and involve appropriate students in scoping, designing and testing prototypes in partnership with the company. Work completed on a project counts towards the students' final qualification so subject staff are also involved as a routine part of the assessment process.

This collaborative approach has the added advantage of drawing students directly into the research and development (R&D) arm of companies rather than relying solely on skills gained in college as a route to employment. Students involved in these partnerships are able to work on real business issues and can draw confidence from the exercise, many going on to find employment in the SMEs they are partnered with. In some cases, students have even taken inspiration from the relationship to form their own businesses. If nothing else, students acquire work experience and gain an appreciation of the world of work beyond college. To sustain the flow of projects, InnoTech holds regular roadshows to attract new business partners and problem-solving opportunities for students.

Technology

Technology provides the platform for collaboration and communication between the student and the SME. What form the technology takes varies according to the nature of the problem and the ideas being worked on. The centre aims to be as open as possible to industry-specific technology in order to familiarise students with software and tools they will use in employment. Students in their turn can

support companies in using technologies that are new to that company but may be vital to its ongoing success.

Impact

The initiative has had the important effect of creating relationships between businesses and students that can translate into real jobs. To date, InnoTech has successfully generated over 200 real-world scenarios for students to work on in partnership with SMEs as a means of preparing them to enter the world of work. It has also generated in excess of £11 million for the regional economy.

The centre has partnered five colleges in the Gazelle group of colleges, delivering R&D projects on their behalf in the areas of design, electronics, software development, ICT or renewable technologies. The work of the InnoTech Centre has also received widespread acclaim from local businesses and praise from the Northern Ireland Inspectorate:

“The support provided by the College both on-site and in-house is of exceptional quality; the businesses involved report considerable added value, including sector-leading solutions in the areas of product design, waste management and energy, e-commerce and computer-modelling technologies.”

**Education and Training Inspectorate, Northern Ireland,
June 2014**

Following the success of the InnoTech project, the college has gone on to explore new ways of supporting small businesses. This is in areas such as engineering and manufacturing, renewable energy and sustainable technologies, and creative and digital media. The college employer support programme ‘InnovateUs’ is designed to provide mentoring and practical support for the small and micro-businesses served by the college. Like the InnoTech Centre, the programme aims to develop a modern economic development infrastructure. It does this by bringing together industry and academia into a structured environment to improve the capacity and technical expertise of small or fledgling companies.

InnoTech was awarded an AoC Beacon Award in 2013.

Find out more

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C. Loughborough College

Title

Using technology to connect employers and students.

Summary

Understanding what employers are looking for is a vital component of employability. Through the Bridge to Work initiative, Loughborough College has set out to help young people aged 14-18 gain an insight into employers' expectations before they apply for jobs or apprenticeships. In part, this is achieved through collaborative conferencing and social software. These enable students to take part in real-time presentations and discussions with local and national employers as well as communicating at any time with their tutors and with one another. The scheme has the added benefit of bringing together employers and potential employees.

Organisation

Established in 1909 with a current student population of 11,000, Loughborough College provides some higher education courses as well as further education and training in Leicestershire. Courses offered range from A-Levels to vocational programmes, apprenticeships and degrees.

Challenge

The Bridge to Work team started from the premise that one-way communication in training sessions does not enable students to explore in any depth what is required of them in the workplace. 'Telling and informing' is more likely to limit than promote understanding. On the other hand, taking part in questioning and discussion sessions with employers helps students buy into preparation for work, increases their sense of responsibility and provides authentic experience of workplace communication. Yet, while face-to-face discussion between employers and students would clearly be ideal, restrictions of distance, travel and time make this impossible to achieve on any scale.

Making it happen

To overcome such barriers, the college's Bridge to Work team set up a series of webinars using Adobe Connect conferencing software to bring together students and

employers in local and national firms. Through the webinars, students have gained first-hand knowledge of what employability entails as well as developing confidence and skills in talking to employers. Apprentices currently on placement have also provided their personal insights to bring to life the culture of the workplace for students still at college.

Webinar examples

- » Two apprentices at Caterpillar have shared their experiences with prospective apprentices via Adobe Connect identifying in particular the skills that helped them the most when they arrived in the workplace. Being able to question apprentices in work has not only helped the college students see the importance of their studies but also developed their understanding of how best to make use of the available time and facilities to prepare for the world of work
- » A senior manager from Barratt Homes has used the conferencing software to outline expectations of students applying for apprenticeships. The formal presentation style adopted by the speaker demonstrated the different styles of communication used in business. A 30-minute question and answer session which followed the presentation gave students the opportunity to obtain insights previously unobtainable on such a scale and with such immediacy

Developing interview skills

What also became clear was that students needed more effective self-presentation skills so that they could develop further the nascent relationships formed with employers during the webinar sessions.

The Student Engagement team came up with a new initiative to achieve this goal, again using technology to extend the students' skillset. Three students were chosen to be interviewed in front of their peers by a local business at a college-wide employability fair, with the aim of hiring one for a fictional post. Each student was given the job

specification and a specific set of characteristics (e.g. over-confident, nervous or 'just right'). They then worked closely with the college's student engagement team and local business connector while they prepared for their roles. Some of these preparations took place face-to-face but the majority were supported online using Adobe Connect as the conferencing platform, backed up by Twitter and a subsequent Moodle forum.

The students first took part in an online interview workshop with local employers then used a video blog to record how they felt as they prepared for the interview. The reflective nature of this part of the exercise was designed to increase students' ownership of their role as interviewees and to demonstrate the unfolding process to others. In addition, social software enabled the three students to gain support at any time, sharing thoughts with peers and receiving guidance from tutors even though they were on different courses with different timetables.

On the day of the interview, the interviewees took the stage in front of a large student panel and were interviewed by the local business connector. The student panel used interactive voting pads after each question to identify who they thought had best answered the questions. This process encouraged engagement from students who would not normally have had the courage to speak.

Technology

Remote conferencing software has made communication with a national company both accessible and achievable with large groups of students, and has produced promising outcomes in terms of employability skills. These examples not only opened students' eyes to the soft skills they needed to enter the workplace, but also encouraged them to assess how far they had acquired those aptitudes. The authenticity of the experience was critical in prompting students to identify their own skills deficit, and to proactively seek help from tutors and each other.

Impact

The Bridge to Work initiative has helped many students gain a better understanding of their own employability, and has led to a number of further achievements:

- » The webinar conducted by Caterpillar created a sense of connection with the world of work that produced immediate results:

"Many students applied to the company the moment we had finished. There was a lot of interest with many encouraged to hear the company employs more than 140 apprentices each year – with at least 20% expected to be female."

Emma Pattison, lead job coach, Loughborough College

- » Both students and companies have benefitted from having direct access to one another, a process that has opened up new opportunities:

"Thanks to Bridge to Work and my course tutor, Paul Scott, I have been given the chance to meet and coordinate with big companies and businesses for apprenticeships that otherwise would have been difficult to reach individually opening even more doors and opportunities for myself and others."

Vijay Parmar, student, Loughborough College

-
- » Using what was learnt from the webinars, the Bridge to Work team subsequently held an interviewing skills event. This was so well received that students were entered into and reached the final of the Barclays Bank Champion of Champions competition. The contest is part of the Prepare for Work employability programme supported by Quizdom software:

“The judges were very impressed with the Loughborough College team’s performance and the personal journey that each of the team members made during the competition. They did not know one another at the outset, but by working together as a team they were able to produce an event that was relevant for their peers and build upon the strengths of each team member.”

Sylvia Perrins, CEO of The National Skills Academy for Financial Services and a member of the judging panel

Technology has been key to the success of the initiative. The conferencing software may have brought students and employers together but technology used during and after the interview competition also played an important part. For example, it helped in breaking down barriers between students who had not previously met and allowing groups of students take responsibility for their own learning. In addition, by using technology, students acquired digital literacy skills that would benefit them once in employment.

Find out more

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D. Portland College

Title

Wi-fi and wellies: mobile learning aids student progression in a specialist college.

Summary

Portland College has found real value in using mobile and video technologies to boost the confidence and employability of students with disability. In order to reflect the changes in students' needs and aspirations, the college has established a new learning centre with a focus on mobile learning. This is enabling more students to use mobile devices in the curriculum. As a result, students are gaining confidence in using tablets in their learning, and are increasingly able to exploit digital media to demonstrate their skills and achievements to employers.

Organisation

Portland College is an independent specialist college of further education, providing educational opportunities and independent living skills for students with physical or learning disabilities between the ages of 16 and 25. Unemployed adults with disabilities also benefit from the range of residential and day programmes, which include courses designed to facilitate progression to work.

Challenge

A particular challenge for students was the interview process which for many can represent a real barrier to obtaining work. Students with a disability often find it difficult to show their capabilities to best effect, and their self-esteem and confidence can be damaged by negative experiences. Recent trials of mobile and video technologies had suggested this need not be the case. However, using mobile devices was still a fundamental change in practice and could prove an extra hurdle in an already challenging situation.

Nonetheless, college staff believed that mobile technologies would bring a range of educational benefits. Once equipped, students would become independent learners, finding out and memorising information, and putting into practice new or rediscovered skills with far less reliance on their teachers. Increasing student independence would in turn

improve their confidence and self-esteem and enable them to view their teachers more as guides and confidence builders than instructors. Portability was the next clear advantage. Many learning activities at Portland are practical and work-oriented, often occurring on the college farm far from the familiar aids of the classroom. Mobile devices such as tablets would enable classroom support to follow students into more remote parts of the campus. In addition, support could be personalised to meet the different needs and preferences of individual students.

Making it happen

Realising that confidence in using mobile devices only comes with repeated exposure, Portland College set up the Quick Campus project to enable mobile devices to be more readily used in learning activities. Developments the project has funded include:

- » Wi-fi coverage across the college farm
- » Purchase of 28 iPad Minis
- » A 'sync and charge' solution for mobile devices
- » Additional specialised assistive technologies to support individual students and staff

The farm became the focal point for the project. Learning activities on the farm, by their very nature, lend themselves to the use of mobile devices such as tablets. A student needing prompt advice on how to fix a lawnmower, for example, could access the manual or a maintenance video online via his or her tablet. The tablet could also record photographic evidence of the student's competences to upload to an e-portfolio.

Alternatively, QR codes could be scanned to find guidance on how to use an item of machinery. In the lawn mowing scenario, codes imprinted on the mower could enable the student to access information on how to empty it, refuel and check the oil levels or investigate health and safety regulations.

In creative studies, students are also using tablets to record videos which explain the thinking and purpose behind their artwork. The activity encourages students to think about their work and decide how best to present it, in some cases even justifying the approach taken. This is a valuable way of developing the skills of reflection and presentation that are so important in the world of work.

College staff are increasingly finding more avenues opening up as a result of the mobile learning project. Students are now participating in ICT sessions that prior to the project were not seen as appropriate or of interest. Sessions have been run on digital editing to make the content of students' videos more concise and audience-aware, enabling them to share their e-portfolio content with more confidence. Producing on-the-fly guidance videos is also planned to aid students use tools on the farm or in the motor mechanics workshop, and to capture information on plants and animals.

Impact

Portland College report their biggest success story so far is the use of the iPad Minis in the curriculum. These devices are now regularly used for:

- » Stills, audio and video recordings to document students' progress
- » Screening assessments and recording achievements for e-portfolios. For many students, providing oral or visual alternatives to the written essay is an important aid to communication and a vital means of making progress on an assessed course
- » Voting in group discussions to express views and opinions which can then be shared and defended
- » Developing relationships with classmates and teachers when communication by any other means is challenging
- » Increasing students' engagement with their individual learning plans

- » Aiding reflection and sharing achievements with external audiences

The impact on student employability is still being assessed. However, enabling students to capture and record their achievements has clearly increased their potential to succeed, both as learners and as prospective employees.

Find out more

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- » Case study written up by Geoff Rebbeck
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E. Reading College

Title

Aligning technology with the world of work.

Summary

Over the last three years, Reading College has moved away from hosting content on a virtual learning environment (VLE) towards browser-based technologies like Google Apps to extend and enliven students' learning. This decision reflects the improved capability of cloud-based technologies and the wider opportunities now on offer to personalise learning technologies. Switching to Google Apps also meant that the college operated in ways that better reflect the modern world and prepared students more effectively for the workplace.

Organisation

Reading College is a further and higher education provider to over 6,000 students over 900 courses. The college is part of the Activate Group which comprises a range of learning organisations with the common aim of improving learning opportunities and skills training across Oxfordshire and Berkshire.

Challenge

Reading College, along with other providers in the Activate Group, felt that their use of technology was creating a credibility gap. Their Moodle-based learning environment did not align with the way students used technology in their personal lives nor was it providing adequate preparation for the way technology was used in the workplace. The challenge was to maintain sound pedagogical practice while at the same time ensuring that students acquired experience of contemporary technology practice.

Making it happen

The step change the college took was to give students ownership of the technology used in their learning by moving learning activities and outcomes to their own space on the cloud. From the students' perspective, this meant they could more easily share ideas and resources with one another. From the teachers' perspective, this meant establishing a more collaborative, seamless way of

working which recognises that students need to learn anytime, anywhere, with any device.

To help students and staff make this cultural shift successfully, the college identified four maxims to guide use of cloud-based technologies. These were:

- » Create
- » Curate
- » Communicate
- » Contribute

The whole process was teacher-led and took two years to develop from a pilot scheme involving a small group of teachers to eventual transition. In this way, the concerns some staff had about abandoning Moodle and adopting Chrome as the default browser could be more effectively answered.

The roll-out involved two lines of activity:

1. Developing the confidence and skills of teachers via a comprehensive programme of continuing professional development (CPD) delivered online, face to face, peer to peer and through mentoring. To achieve this, the college ensured alignment between the CPD programme and staff appraisals
2. Engaging students in adopting new ways of working through changes to curriculum design with greater emphasis on collaborative learning and learning outside the classroom

The outcomes have been rapid change engineered in a more sustainable way. This shows the benefit of teachers supporting and helping each other when adopting new practice rather than relying on the guidance of external experts:

“CPD that is aligned with the needs of students and ensuring their progress in the future can be transformative especially if it is accessible, built on sharing expertise and working collaboratively... It is essential that staff remain up-to-date with the latest technology so that they can make an informed decision about how it might support learning. Modelling of technology, bite size sessions, on-line CPD, open classrooms and technology mentoring are all offered to staff so that the experience for them is just as personalised as it should be for their students. We teach our students to take risks and we must therefore be brave enough to take them too: that's how learning happens.”

Hannah Tyreman, Learning and Development Manager, Reading College.

The college also set up a student Go Team to help teachers harness the benefits of the new technology. Taking up the role can count towards the students' final assessment; students on IT courses, for example, are able to count teacher mentorship as part of their coursework.

Technology

Staff and students now use Gmail, Google Classrooms, Google Hangouts, Google Plus communities, and Google Docs to communicate, share information and resources, set and submit assignments and provide summative feedback to students. Online Google accounts are used to host learning activities and resources as well as final assignments and evidence of student achievement. Apprentices are continuing to use mapping portfolios to capture and log evidence of their competences. All students use ProPortal individual learning plans to keep the administration of learning separate from their cloud-based learning activity.

Google Glass has proved especially valuable for demonstrating the achievements of students in vocational areas such as plumbing and catering. Students upload footage to their learning space for reflection and assessment, and as a record of what they have achieved. They can then complete a commentary which is shared with other students via Google Docs. Evidence gained in this way contributes to students' mapping portfolios and is shared with future employers.

The college provides students and staff with unlimited cloud storage space through Google Drive and has embedded the use of Google Apps in all teaching programmes. Keeping data concerning the administration of student learning centralised enables students to keep their private data protected.

A key benefit is the opportunity to bring your own device (BYOD) so that learning can be seamless. There is no requirement that staff and students should use their own devices, but it is encouraged as part of modern learning and the college takes care to ensure no student is disadvantaged.

“In Google Classroom, staff have found a platform that allows them to share resources with students, manage assessment hand-ins and provide formative feedback to students in timely manner. The automatic email notifications ensure that students are kept up to date with what is being posted and the app that is available for both Android and Apple means it is easy to access it on a range of devices.”

James Kieft, Learning Technologies Manager, Reading College

In addition, the college has created a number of independent learning spaces populated with Chromebook notebook computers to support students who do not own or who choose not to bring their own devices. A total of 100 Chromebooks and class sets of iPad Minis are available to borrow. The college has also made a significant investment in its wi-fi to support the use of browser-based technologies on all courses, made possible by savings from a reduction in printed resources.

Impact

Reading College believes that the move to cloud-based learning has delivered transformational change by:

- » Harnessing the learning preferences of a born-digital generation
- » Empowering students to take greater ownership of their learning
- » Changing the way students share and interact with each other, their teachers and employers
- » Enabling students to access work beyond the classroom via any device
- » Facilitating collaborative peer-to-peer learning and assessment
- » Improving student retention and achievement through more rapid feedback and support

Teachers record far more evidence of collaborative learning behaviour, an increase in student engagement and improvements in the quality of work. Students are even able to share their work beyond college thanks to the collaborative and social nature of the cloud-based platforms they are using. Improvements in students' literacy and digital literacy skills are also visible thanks to the increased responsibility students now have for their learning.

All of these improvements, if sustained over time, will help to improve employability. Because students can now access their own personal space, they are able to produce synoptic writing in blogs and via Google sites to build a proto-e-portfolio. This is still work in progress.

"Equipping our students with 21st century digital skills is as important as literacy and numeracy in securing successful employment. Never forget that learning technologies should always underpin highly effective teaching, learning and assessment. Technology is not used for the sake of it, but rather to engage students at a deeper level in their learning and skills development".

Cheryl Pennington, Assistant Principal, Reading College

Find out more

- » Cheryl Pennington [talks](#) about the use of learning technologies at Reading College
- » James Kieft, Learning Technologies Manager
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- » Hannah Tyreman, Learning and Development Manager
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- » Stephanie Moakes, Quality and Development Coordinator
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- » Case study written up by Geoff Rebbeck
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F. S&B Autos Automotive Academy Bristol

Title

Blended learning at distance.

Summary

S&B Automotive Academy, a Bristol-based provider of specialist courses for the automotive industry, has adopted a range of technologies to make its training programmes more effective and efficient. To keep in touch with apprentices in dispersed workshop locations, the academy uses video streaming to conduct meetings, tutorials and assessments. For their part, the apprentices use video to capture evidence for their e-portfolios, and video streaming to provide taster experiences for the next generation of apprentices. Apprentices also have access to online learning materials on Moodle so that no one misses out on the theoretical elements of their course while on placement in the industry. In a significant new development, the academy has also developed cost-effective ways of training apprentices in paint spraying techniques via simulation technologies.

Organisation

S&B Automotive Academy is a medium-sized, work-based learning provider which has recently celebrated its 40th anniversary. The academy provides training in a range of skills relating to the motor trade from maintenance, auto-electrical repair and paint spraying to business administration and parts distribution.

Challenge

A well-known problem in work-based learning is that as much as 85% of an apprentice's time can be spent on the job, leaving only a limited amount of time for studying background theory and upgrading functional skills. This problem is exacerbated by the difficulty inherent in supporting and motivating students on placement in remote locations. The academy felt that improving learning support for apprentices under these challenging circumstances was essential, as high drop-out rates are lost opportunities both for training providers and students.

Learning in dispersed locations also means time-consuming assessments. Because employers do not want to release apprentices and trainees from their workplace duties, tutors have to travel to individual workshops to complete paper-based assessments. As a result, the academy was also looking for ways of recording and assessing apprentices' progress that would be both more efficient and more illustrative of student competences.

Making it happen

S&B Automotive Academy turned to some of the most up-to-date technologies to address these issues.

The first step was to harness technology to improve the academy's recruitment processes. As companies in the automotive industry place a high value on finding applicants who can thrive in the workplace, a key goal was to attract the right young people. Video streaming has proved to be the solution. The academy uses live video links to enable apprentices to present to pupils in school interested in apprenticeships in the automotive industry. The immediacy of the presentations has given potential applicants a better chance to understand the standards the industry sets, and what work-readiness means. Having it explained by an apprentice only a few years older than themselves adds power and authenticity to the message. In addition, discussions between pupils and apprentices following the presentations have helped the academy identify recruits with the right attitude:

"Good timekeeping and presentability are important attitude skills. Apprentices are left in absolutely no doubt about the nature of the work environment and the expectations placed on them. The fact that the apprentices who talk to schoolchildren online are [only] a few years older has an effect in helping students acquire an understanding of the attitude and maturity needed to be work ready. So far 1,250 students have attended an apprenticeship talk."

Jon Winter, CEO, S&B Automotive Academy

Video streaming has also enabled apprentices to interact in real time with their teachers in Bristol to provide more support with the theoretical elements. Although apprentices can attend some classes at the academy, Moodle, the academy's virtual learning environment (VLE), is available to support their studies at all other times. Learning materials are available for some 1500 online modules on different sections of the motor trade. Through the VLE, tutors and administrators also keep an accurate audit of apprentices' attendance, contribution to learning activities and completed assignments.

Alongside the VLE, web cameras and video links have proved some of the most effective ways of improving learning in the workshop environment. Apprentices make frequent use of video capture in the workshop to demonstrate their competences for assessment. Digital video captured on a mobile phone enables this to occur on the fly, and recording a voiceover can demonstrate still more detailed knowledge and understanding. These short videos bring an extra dimension to apprentices' e-portfolios; it is easier to capture evidence of soft skills such as teamwork and attributes such as willingness to take instruction. Being able to demonstrate these additional qualities can be critical for apprentices making the transition into full-time employment.

Technology

Building on its use of VLE and video streaming technology, the academy has now introduced augmented and virtual reality software to help apprentices gain basic skills and practise safety protocols in paint spraying before attempting to do so for real. Each episode of this immersive workshop experience provides data on students' abilities. That information can be shared with students, and skills such as muscle memory, accuracy and dexterity can be developed and assessed much more quickly.

Impact

Use of technology has made a substantial difference to the cost effectiveness of the academy's work. This has been achieved in a number of ways:

- » By using virtual and augmented reality, the academy has reduced the time allocated to training apprentices in paint spraying techniques from two days to ten minutes. This represents cost savings of at least £13,000 per annum in terms of teacher time and consumables such as paint
- » Video streaming directly to students in school has enabled potential apprentices to be better informed about their choice of career, improving recruitment and reducing drop-out rates. Because of the academy's focus on attracting the right candidates, 99% of apprentices now progress to the advanced programme
- » During an apprenticeship, video capture on a mobile combined with learning materials on a VLE keeps motivation high by providing immediate, rewarding opportunities for learning and assessment
- » Demonstrating skills via video, including soft skills, adds richness to the apprentices' e-portfolios and facilitates transition into sought-after employment with companies at the forefront of the motor trade

Find out more

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- » Case study written up by Geoff Rebbeck
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G. South Devon College

Title

Using Moodle to foster employability.

Summary

South Devon College has made work experience and preparation for the world of work possible for all students, with a new programme of study in addition to their chosen course. The college is using its virtual learning environment (VLE), Moodle, to support the initiative. By joining a dedicated whole-college area on the VLE, students can check their progress towards work readiness against a set of standards agreed with local employers. The online Moodle community also provides ideas and information that the college and employers wish to share with students to help them prepare for the workplace, including guidance on finding part-time work. Also under development is an addition to the college's electronic individual learning plan (eLLP). This will enable students to reflect on their work experience, record employers' feedback and provide evidence of their learning for their tutors and parents as well as for themselves.

Organisation

South Devon College, which is affiliated to the University of Plymouth, offers higher and further education courses from A-levels and apprenticeships to university courses. The college supports a population of 11,000 students across the county, including 14-16 year-olds opting for its high-school provision. This enables school leavers to study GCSEs in core subject areas such as English, maths and science alongside specialist technical qualifications.

Challenge

The college wanted to use its well-established learning technologies to embed employability skills into its programmes, so that all students could develop and demonstrate the required skills and attitudes for employment. Local employers were already using other college channels to clarify the skills they wished students to have, so a centralised approach based on the VLE was a natural choice. The college was also keen to put at the heart of the initiative a set of standards employers had identified as benchmark skills for employability. Reviewed each

year by the board of governors and an employer focus group, the current set of standards is:

1. Demonstrating a positive attitude
2. Career planning
3. Effective communication
4. Problem solving skills
5. Working with others
6. Engagement with work

While many of the attributes and skills on the list may be considered 'soft' ones, they fit with a national drive amongst employer organisations to foster the right attitudes among students applying to join the workforce.

Making it happen

The college opted to use Moodle as the central point for its initiative, backed up by discipline-specific activities such as work experience in vocational areas.

As a college-wide, collaborative platform, Moodle has given students the opportunity to harvest evidence of their employability skills wherever they occur. It enables them to highlight the additional skills gained as part of a qualification which often go unrecorded as evidence of employability. Through working on Moodle, students have also acquired a better understanding of the gaps in their skillset, had time and support to rectify them and captured evidence of their progress and achievements. All of this can be recorded in their eLLP.

The college awards employability certificates to students who have gathered sufficient evidence of their work readiness skills, again via Moodle. The initiative, which provides additional evidence of competence alongside a student's CV, was developed in tandem with the employer focus group. Students can show they have responded to employers' requirements, and that the skills they demonstrate are those sought by local employers. The college is now awarding badges via Moodle as evidence of achievement of employability skills; badges can be shared with others in an electronic CV via Mozilla Backpack.

At the same time, the college is helping students gain practical workplace experience through part-time work. An online Job Shop integrated into the Moodle employability area has proved to be one of the most successful elements of the initiative so far. The Job Shop showcases any jobs available locally; support staff then help students with writing applications and preparing for interviews.

Technology

The most important aspect of the project has been to keep technology as unobtrusive as possible, making it easy for staff and students to use. As college students regularly use Moodle for their courses, the employability initiative has been a natural extension of what they already do.

Impact

There is clear evidence of impact in terms of student engagement with the Job Shop; the most popular element on the Moodle site. This averages 206 student hits a week but has peaks on some occasions of over 500 hits a week. In particular, students make regular visits to the list of part-time job vacancies.

Students are gaining certificates at bronze, silver and gold level in local award ceremonies in conjunction with local employers. This is an aspect of the initiative that has been rolled out across the college with a few amendments such as the ability to achieve open badges as well as the standard Moodle certificate. Employability skills often form an integral part of courses on offer at the college so the Moodle employability area may provide additional support to these rather than acting as the main focus for activity on employability.

Future plans include capturing the learning stories of students plus evidence of their achievements in the eLLP. In turn this will become the single source of information on the employability skills of students.

Find out more

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H. The Mindset

Title

Developing a mindset for employability.

Summary

The MindSet is a non-trading body of like-minded further education (FE) colleges formed in 2013 in partnership with the REED Northern Council for Further Education (NCFE) Partnership. The group shares the belief that students can acquire the right mindset and behaviours for employability through their college courses before they enter the workforce. To help colleges check how far this is happening and rectify deficiencies, the group has developed an employability toolkit with supporting case studies. This offers colleges the means to assess the effectiveness of their employability processes and to learn from others.

Challenge

Students often find it difficult to make the transition from attitudes formed at school to an adult understanding of the world, even though the consequences of being ill-prepared to thrive in the workplace are considerable. In addition, although FE and skills providers have a responsibility for enabling students to make this transition successfully, rarely do they pool their experience and expertise. Many colleges have no formal mechanism at all for auditing their effectiveness in this critical area of provision.

Making it happen

Launched in 2014, a toolkit was developed by four member colleges – Bournemouth and Poole, Derby, Highbury and Milton Keynes. This was to provide colleges and training providers with:

- » the means of auditing how they currently help students develop the right mindsets
- » an understanding of the improvements they need to make
- » a supporting pool of ideas and recommendations from other providers and The MindSet's training Employability Practitioners

The toolkit can be used in a variety of ways depending on the degree of involvement and the level of support required, but typically involves a two-day review of all employability provision at the college or organisation. To draw out the key strengths, weaknesses, opportunities and threats, this review looks into each of eight key areas and involves staff at all levels. The results are recorded in an online report, after which the college is provided with case studies and an action plan to assist in implementing appropriate changes.

A key aspect of The MindSet approach is that sharing ideas and outcomes is the way forward for the sector. For this reason, all colleges using the toolkit are asked to share elements of their report freely and anonymously with other users to provide benchmarks of good practice. These case studies are collated online and made available to all those using the toolkit.

Technology

The toolkit has been developed using bespoke software managed by Mesma. The Mindset toolkit is a fee-based service that varies according to the level of involvement the college chooses.

Impact

Since the launch in 2014, around 10% of FE colleges in England have registered to use the toolkit. 100% of those completing the audit to date either agree or strongly agree that the process has helped them improve student employability and that they would recommend it to other providers. The auditing process has led to a number of improvements in these colleges, which range from developing an entirely new employability strategy to increasing the focus on employability. This might be through student voice campaigns or including employability provision in course and college-level self-assessment reports.

“We started to use the feedback the day after the assessment took place. Right from the start we realised how much work we needed to do to transform our study programmes so we were giving young people the employability skills they need.”

**Carol Anson-Higgs, Vice Principal Business Development,
South Essex College**

Following the success of the toolkit in its first year, The MindSet group has adapted it and has now made it available to independent training providers from September 2015.

Find out more

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- » Case study written up by Geoff Rebbeck
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I. The Welsh Bacallaureate

Title

Embedding digital literacy skills in the Welsh Bacallaureate.

Summary

The Bacallaureate aims to provide students with a more rounded educational experience, preparing them more effectively for higher education and employment by learning through challenges and completing an individual project.

In response to the findings of its 2011-2012 review of 14-19 qualifications, the Welsh government revised the Welsh Bacallaureate to include the Welsh Essential Skills from September 2015. Essential Skills are known as Functional Skills in England and Core Skills in Scotland.

As a result, students working towards the new 'Welsh Bac' can now develop an understanding of and proficiency in skills essential to employability as a core part of the curriculum. One of the skills students must demonstrate is digital literacy, which has now replaced ICT as the third Essential Skill in Wales.

By introducing this shift towards skills in the Bacallaureate curriculum, the Welsh Government aims to give students richer opportunities to acquire the capabilities and attributes they need to succeed as citizens and members of the workforce. Thus the revised Welsh Bac has a focus on:

- » Literacy
- » Numeracy
- » Digital literacy
- » Critical thinking and problem solving
- » Planning and organisation
- » Creativity and innovation
- » Personal effectiveness

Challenge

The new curriculum is not without challenges; teachers have had to acquire new skills themselves to be able to deliver and assess a course with a stronger emphasis on employability.

Although these are often termed 'soft skills', the changes introduced to the curriculum mean that the Welsh Bac is unlikely to become embedded overnight. Skills such as these have not been widely demonstrated or even acknowledged in the past, leaving students ill-equipped in the workplace. Although recognising their value, teachers can still be challenged by the demands they face as teachers, trainers and assessors of these skills. Nonetheless, the revised Bac is seen in Wales as the best preparation students can have for successful entry into adult life.

"The Welsh Bacallaureate is central to the future of education in Wales and will offer a unique and valuable experience for learners."

Caroline Morgan, Welsh Bacallaureate framework manager, WJEC

Making it happen

The Bacallaureate is not a new qualification and is widely perceived as an effective model of 14-19 education. It is well placed to become the flagship course for delivering a curriculum in which employability skills are acquired alongside academic knowledge.

By replacing the stand-alone model of Essential Skills (see more on this in the Vignette Section) with a more integrated, holistic and purposeful approach, the Welsh government has also raised students' awareness of the value of Essential Skills. To complete each of the four elements of the Welsh Bac (the individual project plus the global citizenship, enterprise and employability and community challenges), students have to seek out real-world opportunities in which to make decisions and solve problems. In doing so, they must demonstrate the most appropriate skills for the task. Through this open-ended model of learning, students have a better opportunity to discover the full value of Essential Skills and to appreciate how these skills will improve their life chances.

Embedding skills such as digital literacy into a qualification is a considerable step forward; it is now widely accepted

that digital literacy needs to go hand in hand with ICT skills to ensure that everyone can use technology effectively, safely and appropriately. It is no surprise therefore that digital literacy is a key aspect of the revised Welsh Bac. The course uses an e-portfolio tool provided by the awarding body, WJEC, as the vehicle for capturing and presenting students' evidence. Located on Moodle, the tool provides an online personal learning space in which students capture and present their learning journey in a variety of words, sounds, images and video footage. Digital literacy skills have to be an integral part of the qualification as the new curriculum requires students to be creative and innovative in how they manage and showcase their learning through technology.

To assist teachers in rising to the challenge of working with the new curriculum, the awarding body has developed a level 3 qualification for digital literacy practitioners. The development of the qualification has been supported by the Welsh government and project managed by Colegau Cymru, the Welsh equivalent of the Association of Colleges. The learning outcomes for digital literacy in the new Baccalaureate model recognise student approaches to their learning and their evidential experiences as well as competences (the focus of the previous qualification), in recognition of the fact that universal adoption of the revised Welsh Bac will take time. Not all teachers can become teachers of literacy, numeracy and digital literacy overnight, regardless of aspiration.

Technology

Following detailed consideration of the most suitable platform on which to deliver and capture the outcomes of the Welsh Bac, Moodle was chosen as the preferred choice. Providers, however, can develop their own platform; it is in the spirit of the Baccalaureate to encourage choice in technology. Nonetheless, Moodle was likely to be familiar to most teachers and therefore helpful to those who have yet to gain confidence and experience in teaching digital literacy skills.

City and Guilds also offers a Technical Baccalaureate qualification (the TechBac), which provides similar opportunities to evidence a combination of vocational competence, problem-solving skills and personal attributes. The qualification, like the Welsh Bac, seeks to go beyond simple assessment of competences to embed essential skills for living, working and learning in a digital society.

Find out more

- » Esther Barrett's blog on digital literacy: the third essential skill in Wales
<http://digitalcapability.jiscinvolve.org/wp/2015/02/17/digital-literacy-the-third-essential-skill-in-wales/>
- » Hazel Israel, Welsh Baccalaureate, Welsh Government / Llywodraeth Cymru
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- » Case study written up by Geoff Rebbeck
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J. St Helens College

Title

Self-advocacy at St Helens.

Summary

Before they enter the world of work, many students need to understand how to present a balanced, rounded picture of themselves and their capabilities. To this end, St Helens College on Merseyside provided foundation degree students with LinkedIn accounts so they could showcase their achievements and form relationships with potential employers before they left college.

Authenticity is important in a project of this kind. The college opted for LinkedIn rather than its own internal applications to get students networking with employers and other professionals on the most commonly used platform for business and professional people. The aim was to enable students to establish a profile and develop their self-presentation skills while still on the course, so they would leave well prepared for the next stage of their careers.

Challenge

The first challenge for the foundation degree students was to understand that successful entry to employment, or the next stage of their studies, requires more than evidence of qualifications. Of increasing importance in the modern world is demonstrating your ability to learn, communicate and work with others in a professional manner. Students who can present their own unique learning journey effectively are more likely to be distinguished from their peers during the job application and interview process. However, to ensure the initiative was successful, the college not only needed to upskill its students. Course tutors themselves were not always familiar with social media or prepared for the growing emphasis on employability skills in the curriculum.

Making it happen

The project demonstrates how input from alumni and employers can lend all-important credibility to an employability initiative; convincing students of the value of learning new networking and self-presentation skills was essential.

Students now in employment or at university have much to pass on to those currently still studying in further education. For example, they can share the value of LinkedIn as a tool for professional networking, how to build a professional profile, how to identify and remedy gaps in a profile, what to gather and how best to present your learning experiences. These were a few of the skills the students at St Helens picked up from the mentorship of former students. The alumni group also helped create a destination follow-up survey and gave students the motivation to their example.

Next a group of employers joined forces with second-year students to act as the panel for mock interviews – a further stage in the learning process in which first-year students drew on their LinkedIn profiles to present their strengths and address areas for development in the context of a formal interview. The interviews were recorded to make clear to students the importance of maintaining professional credibility. In this way, students learnt about the importance of aligning information on their profiles with what is said during the interview process. They could also spot gaps in their profiles and take steps to improve their employability during their time at college. Involving employers had the added advantage of opening up employment opportunities in the local area and brought into focus what employers expect of applicants. As a result, students were more aware of what they needed to do to enter the world of work even before the end of their first year of study.

Interviews continued throughout the course, often recorded as audio files to capture progress made since the last attempt. Students also took part in peer-to-peer evaluations and online interviews so they could continually test and improve their self-presentation. Exposed to live situations such as these in which they had to project and defend their capabilities, students were able to quickly catch and acquire a culture of work readiness. The results have proved promising:

“LinkedIn has had a positive impact on the quality of students’ development of CV content and has given students an understanding of how important networking and collaboration is in gaining employment.”

Paul Styles, Learning Technologist, St Helens College

The project also introduced changes in the way teachers planned, delivered and assessed the course, even requiring improvements in the digital literacy skills of teachers. The college responded by allowing staff time for learning new approaches and skills within the weekly allowance for continuing professional development. In return, managers looked for proof of relevant course development.

Teachers were also encouraged to set up their own LinkedIn accounts so that, in addition to the CPD provided by the college, they could obtain the support and mentorship of colleagues on the LinkedIn community and discover for themselves the value of this contemporary professional network. Moving forward, the project has been expanded on a teacher-by-teacher basis, with ongoing support from the college’s professional support services staff and the e-learning manager who took the lead on the initiative.

Impact

Although this is still an ongoing study, the success of the self-advocacy project can be demonstrated by the large number of students who have either found employment or been offered a place at Chester University as a result of their LinkedIn profiles. Students also have a wider understanding of how to use social media for professional networking purposes, and have found work placements by doing so:

“A LinkedIn profile will be the only documentation needed when looking for future employment as it allows employers to search for people who meet the criteria they are looking for, rather than having to advertise a job and discover whether the applicants meet the employer’s needs.”

James Proctor, student, St Helens College

“The most productive outcome from this module would be my LinkedIn application. Not only has the LinkedIn account found my work placement for the year, but it also gave me a chance of other job opportunities which professionals have asked me to apply for.”

Christie Hendrick, student, St Helens College

The success of the initiative may not yet be fully realised. The project’s incremental style means it can be rolled out across all of higher education programmes to help improve the employability and networking skills of both students and staff across the institution. Other tangible benefits from the initiative include:

- » Students have become more vigilant about spelling and grammar. Exposure to a more demanding audience has demonstrated to some students how poor their spelling is, and that this may have had a bearing on past failures in job applications
- » Students now understand better how to use social media in general. The impact of unguarded postings on Facebook is taught as part of the preparation for using LinkedIn. To discover the need for careful image management, students are also asked to reflect on the results of a self-search on Google
- » As a result of the personal nature of social media over 25% of the Level 5 foundation degree model of learning now involves reflection
- » Communication and digital literacy skills are also improving. Students are now re-organising their social and business web presences so that friends and employers can be addressed separately and in more appropriate ways

- » LinkedIn has sparked innovative ideas in curriculum design. The department of creative media and arts, for example, has introduced project work in which tutors acting as prospective employers seek information about the applicants from their e-portfolios accessed via their LinkedIn accounts. In this way, LinkedIn can be used to provide dynamic, updatable evidence of achievement. Tutors can also recommend students via the platform

Such has been the success of the project that use of LinkedIn has been being rolled out college-wide during 2015, and the profile of technology in general in enhancing student employability is going from strength to strength. Students now use Padlet to research and share information about companies. No two entries can be the same to provide a richer pool of information about potential employers.

Find out more

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- » Case study written up by Geoff Rebbeck
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Appendix 5 - Benefits of technology for employability for different stakeholders



Technology-enhanced authentic and simulated learning experiences

Technology use	<ul style="list-style-type: none"> » Active and real world learning experiences supported by technologies that develop employability skills » Simulated experiences
Technologies	<ul style="list-style-type: none"> » Wiki » Simulations and games » Specialist systems » VLE » Cloud collaboration tools. » Social media » Vocational-specific technologies such as are used in kitchens and garages
Benefits to learners	<ul style="list-style-type: none"> » Authentic learning experiences can be highly effective in developing employability skills » Provides opportunities for students to experience different working environments to aid decision-making with careers and jobs » Technology-supported collaboration can provide opportunities for students to work with overseas and remote companies » Provides insight into industry requirement of technology » Different student groups can try new skills as 'tasters' or options for personal development
Benefits to employers	<ul style="list-style-type: none"> » Employers can benefit from student creativity and digital skills in problem-solving real issues for them together with staff support » Supports employers in evaluating students for potential recruitment » Students are more likely to be 'work-ready'
Benefits to institutions	<ul style="list-style-type: none"> » Technology-supported collaboration provides opportunities for students and staff to work with overseas and remote employers » Technology-supported collaboration can build capacity and efficiency with numbers of students working with employers » Simulations and games can be a cost-effective method for developing learners, as they bring savings in costs of materials, avoidance of health and safety concerns, scalability of student numbers experiencing simulated learning » Provides opportunities for university staff and employers to collaborate and better understand each other's needs and issues which can lead to enhanced course development
Constraints	<ul style="list-style-type: none"> » Universities can find it difficult to provide quality placements for all students » Simulations can be expensive to initially develop unless costs are shared

Digital communications and engagement with employers

Technology use	<ul style="list-style-type: none"> » Researching, identifying and developing contacts and relationships with employers » Developing “digital” and “employability” identify » Developing “digital collateral” as evidence of student “rounded self” » Showcasing student “rounded self” to employers and personal clients » Sharing industry identified problems for learning opportunities
Technologies	<ul style="list-style-type: none"> » Social media » Multi-media » Mobile devices » Cloud collaboration tools » E-portfolios and other personal learning showcasing tools » Mapping portfolios for apprenticeships and bespoke short training
Benefits to learners	<ul style="list-style-type: none"> » Opportunities for students to efficiently use social networks and multimedia to better network and engage with a range of employers in pursuit of their careers and professional development » Opportunities for students to build a broad range of digital collateral that can help them to better rehearse and showcase their “rounded self” to employers and personal clients - compared to a written CV » Opportunities for students to shape their online identity to include employability and digital skills
Benefits to employers	<ul style="list-style-type: none"> » Supports student recruitment, allowing employers to better identify potential employees that match their needs - by seeing the student beyond the qualification » Allows employers to evaluate potential recruits efficiently using a broad range of student digital “collateral” that can demonstrate and evidence student experience, skills, knowledge and attributes
Benefits to institutions	<ul style="list-style-type: none"> » Potential to efficiently engage alumni with student learning and projects for mentoring students » Opportunities for institutions to better and more efficiently engage with a broader range of employers including SMEs and with professional, sector and regulatory bodies » Opportunities to increase income from bespoke training
Constraints	<ul style="list-style-type: none"> » Students require expert training and access to resources to develop e-communications and their digital identity » Academic staff are not always best equipped to provide such training » Requires a change of culture to employing personal technologies for all » Only as successful as the desire of both parties to engage with each other <hr/>

Technology-enhanced lifelong learning and employability

Technology use	<ul style="list-style-type: none"> » Self-directed personal and professional learning (planning, reflection, managing, recording, review) – supported by technology » Digital feedback and engagement with a variety of stakeholders including employers to help develop learner self-regulatory skills » Employer-supported/ related assessment for learning
Technologies	<ul style="list-style-type: none"> » E-portfolio » Personal learning space » Online badges
Benefits to learners	<ul style="list-style-type: none"> » Learning and development using portfolios can offer learner-centric approaches compared with course-based e-learning systems » E-portfolios offer highly efficient ways for students to support their lifelong learning, helping them to make judgements and evaluate and manage their own learning » Students should be able to own and store their e-portfolio data enabling it to be used how, when and where they like » Learners have the opportunity to receive feedback from a range of stakeholders » Students can use their own devices to capture evidence for e-portfolios » Students can learn to self-validate their own work and ask others to critique it rather than seek assessment of a teacher
Benefits to employers	<ul style="list-style-type: none"> » Portfolio-based learning means assessments can be employer-focused » Employers benefit from graduates who are equipped for lifelong learning and employability where there is greater focus on capabilities of graduates to adapt to new needs, contexts and constraints, rather than having skills of the moment » Students can marshal personal content to show what is relevant only in an order that is helpful to each employer
Benefits to institutions	<ul style="list-style-type: none"> » Portfolio-based learning is highly supportive of learner self-directed, self-review, assessment for learning and longitudinal progression approaches and can therefore act as a Trojan horse for enhancing curricula
Constraints	<ul style="list-style-type: none"> » Issues of e-portfolio data mobility » Portfolio-based learning raises many issues for institutions which have invested heavily in more course-based learning environments » Some students are reluctant to take control of learning, preferring to simply follow a structured programme

Technology-enhanced employability skills development

Technology use	<ul style="list-style-type: none"> » Learner skills diagnostics » Technology-enhanced development for skills gaps » Computer-aided assessment
Technologies	<ul style="list-style-type: none"> » Online diagnostics » VLEs » OERs » E-learning content including e-books and multimedia content » Computer-aided assessment including electronic management of it » Online badges
Benefits to learners	<ul style="list-style-type: none"> » Supports students in diagnosing their own employability skills » Supports students in flexible and efficient approaches to developing and reviewing their employability skills » Provides students with information to manage their own learning needs
Benefits to employers	<ul style="list-style-type: none"> » Graduates have the capability of independently diagnosing their own skills and exploiting online resources to develop their skills » Showing and evidencing personal improvement through analysis and making remedial choices is a strong employability skill itself
Benefits to institutions	<ul style="list-style-type: none"> » Institutions can build in employability skills assessment into electronic management of assessment systems » Provision of online resources for diagnostics and development of employability skills can be highly efficient and cost-effective, particularly if OERs are used
Constraints	<ul style="list-style-type: none"> » “E” solutions on their own are not always sufficient and support in the form of student or staff mentors can help students

Employer-focused digital literacy development

Technology use » Developing student technology-enhanced employability skills

Technologies » All!

Benefits to learners » Students develop a better understanding of how to identify and apply technology to employer contexts and needs
» Students will potentially be more employable

Benefits to employers » Graduates are better able to unleash their digital skills and understanding in pursuit of business objectives in creative and innovation ways
» Graduate can help to inspire and influence employer IT departments

Benefits to institutions » Students and graduates are better equipped to meet the needs of employers
» Students can be used by institutions as digital change agents, focusing on institutions as employers

Constraints » Institutions do not generally make the explicit link between specific employability skills and technologies that support those skills
» Institutions typically struggle to know how best to equip students with digital literacies

Appendix 6 - Table of ways that sector bodies can support institutions



Idea	Details	Challenges addressed
<p>1 Benchmarking Develop benchmarking toolkits that reflect effective practices and support institutions in collaborative benchmarking</p>	<ul style="list-style-type: none"> » Develop a benchmarking (self-review) toolkit for programme teams, building on existing sector toolkits » Develop an institutional benchmarking (self-review) toolkit about institutional preparedness for technology for employability, building on existing sector toolkits » Use these benchmarking toolkits to underpin institutional support services (see idea 5) such as benchmarking, consultancy and coaching » Ensure educational agencies collaborate to ensure technology is an integral part of generic employability frameworks and toolkits » Facilitate a UK-wide benchmarking programme addressing employability and technology for employability, led by a collaboration of educational agencies 	<ul style="list-style-type: none"> » Different visions of maturity and variation in approaches to developing employability skills, capabilities and attributes » Many creative uses of technology, but “embedding” remains elusive to many institutions » Variation in practices and understanding of potential of technologies – by institutions, students and employers - particularly with e-portfolios and social media » Institutions could do a lot more to unleash student creativity in using digital networks/ media to engage with employers, alumni and other stakeholders » Digital literacies are not well articulated in relation to employability skills » The degree to which employers (large and small) are involved in defining and developing employability skills remains unclear HE in particular needs to develop greater partnership working with employers and alumni e.g. curriculum design, mentoring, assessments

Idea	Details	Challenges addressed
<p>2 Sector resources Develop coherent sector resources targeted to different stakeholder needs that inform and enable stakeholders to develop student employability</p>	<ul style="list-style-type: none"> » Review existing available resources with a view to creating a one-stop-shop approach that can be contextualised and personalised for different stakeholder groups and include specialist areas such as technology for employability for special needs students » Provide resources that help institutions to visualise exemplar good practices such as with student portfolios and use of social media » Consider embedding the connected curricula in all resources » All resources should clearly communicate the rationale for using technology for employability, highlighting the benefits to different stakeholders and with a major focus on impact of employability initiatives and policies » Develop processes supported by technology to sustain the capturing and communication of case studies/ vignettes of good practices, using many- different media approaches » Ensure educational agencies align and link resources with their resources, frameworks and toolkits 	<ul style="list-style-type: none"> » Despite excellent resources existing in relation to using e-portfolios, there is a lack of awareness of them and their value to institutions; they could be further developed with guidance to support students in effective use » Not much evidence of institutions evaluating impact of employability policies/initiatives with employers despite destination surveys » There is insufficient emphasis in sector resources on making the case for using technology in employability and the importance of student digital literacy as an employability capability in its own right » Guidance on digital literacies could be better contextualised and articulated in relation to employability skills » There are minimal resources relating to digital entrepreneurialism (digital enterprise) » There is insufficient guidance on effective use of social media to support employability » There is potential for greater adoption of multimedia communications approaches as part of guidance materials e.g. using screencasts, videos

Idea	Details	Challenges addressed
<p>3 Sector communications and engagement Facilitate improved sector communications and engagement with respect to student employability</p>	<ul style="list-style-type: none"> » Develop a communications and engagement plan targeted at a range of stakeholders which focuses on technology for employability » Explore the potential for a collaborative approach to communications and engagement with institutions and a range of stakeholder groups, (including educational agencies) in respect of employability and related technology 	<ul style="list-style-type: none"> » Despite excellent resources for using e-portfolios, there is a lack of awareness of them and their value to institutions; they could be further developed with guidance to support students in effective use » The degree to which employers (large and small) are involved in defining and developing employability skills remains unclear HE in particular needs to develop greater partnership working with employers and alumni e.g. curriculum design, mentoring, assessments » HE and FE need to find ways of improved working with a broader range of employers e.g. SMEs » Need to raise aspirations for digital entrepreneurialism with employers » There is insufficient emphasis in sector resources on making the case for using technology in employability and the importance of student digital literacy as an employability capability in its own right » There is potential for greater adoption of multimedia communications approaches as part of guidance materials e.g. using screencasts, videos

Idea	Details	Challenges addressed
<p>4 Sector online collaborative spaces Develop online collaborative spaces to support engagement between sector stakeholders</p>	<ul style="list-style-type: none"> » Support the development of online spaces to support new and creative collaborations between staff, students, alumni, employers » Negotiate with institutions that have already created such online collaborative spaces with a view to opening them up to other institutions nationally 	<ul style="list-style-type: none"> » The degree to which employers (large and small) are involved in defining and developing employability skills remains unclear Not much evidence of institutions evaluating impact of employability policies/initiatives with employers despite destination surveys » Not always easy to identify “truly” authentic learning experiences with employers for ALL students, though there is much potential for student cohorts to work in partnership with employers on real and challenging employer/sector problems » HE in particular needs to develop greater partnership working with employers and alumni e.g. curriculum design, mentoring, assessments » HE and FE need to find ways of improved working with a broader range of employers e.g. SMEs » Need to raise aspirations for digital entrepreneurialism with employers » There is potential for HE and FE to better collaborate in joined up approaches to technology for employability

Idea	Details	Challenges addressed
<p>5 Institutional support services</p> <p>Provide a range of institutional support services that enable institutions to achieve measurable impact in enhancing student employability</p>	<ul style="list-style-type: none"> » Provide consultancy, coaching and training services to institutions in the area of technology for employability/ self-employability » Ensure any consultancy utilises fully the resources available from sector bodies, including benchmarking and diagnostic toolkits as well as information, support and guidance resources 	<ul style="list-style-type: none"> » Resources on their own are insufficient – institutions need to be supported in using them effectively e.g. through consultancy, mentoring, coaching, collaborative benchmarking » Many creative uses of technology, but embedding remains elusive to many institutions » Different visions of maturity and variation in approaches to developing employability skills, capabilities and attributes » Embedding employability/ attributes into curricula may be ideal, but there are challenges » There is potential for HE and FE to better collaborate in joined up approaches to technology for employability » Variation in practices and understanding of potential of technologies – by institutions, students and employers – particularly with e-portfolios and social media

Idea	Details	Challenges addressed
<p>6 Joined-up related work areas Identify synergies with other areas of work across the sector and develop a joined-up approach for student employability and use of technology across all activities</p>	<p>» Ensure that the findings and implications of this report are explored across related work areas such as exploration into digital literacies, students as change agents, and learning analytics</p>	<p>» Institutions could do a lot more to unleash student creativity in using digital networks/ media to engage with employers, alumni and other stakeholders</p> <p>» Digital literacies are not well articulated in relation to employability skills</p> <p>» There is potential for students as partners and innovators initiatives to be focused on student employability</p> <p>» Variation in practices and understanding of potential of technologies - by institutions, students and employers - particularly with e-portfolios and social media</p> <p>» Not always easy to identify truly authentic learning experiences with employers for all students, though there is much potential for student cohorts to work in partnership with employers on real and challenging employer/sector problems</p> <p>» HE in particular needs to develop greater partnership working with employers and alumni e.g. curriculum design, mentoring, assessments</p> <p>» HE and FE need to find ways of improved working with a broader range of employers e.g. SMEs</p> <p>» Need to raise aspirations for digital entrepreneurialism with employers</p>

Appendix 7 - HE case study vignettes



Institution	Birmingham City University
Title	Creative Problem Solving using digital story-telling
Technologies	A range of multimedia tools e.g. MovieMaker or iMovie
Description	Within the Business School, a module “Creative Problem Solving (CPS)” requires students to identify a problem to work on over the 10 weeks delivery of the module and the assessment is a digital story of between 3 and 5 minutes. Most students pick something to do with employability such as public speaking or time management. In all cases they would be asked to define and redefine the problem to generate an improved problem statement, go through a very creative stage of generating ideas, developing options and making choices. They are assessed on how they reflect on their problem, move the problem forward and engage with a CPS process to manage this.
Contact	Jon Curwin, Senior Lecturer, Senior Learning and Teaching Fellow (jon.curwin@bcu.ac.uk)

Institution	Abertay University
Title	Online badges in relation to employability skills development
Technologies	Mozilla online ‘open badges’ scheme and the e-portfolio, PebblePad
Description	The Law division at Abertay University are undertaking a pilot scheme into the use of open online badges and e-portfolios as a means of recognising and validating student achievement in relation to the development and evidencing of employability skills It does not form part of the academic assessment of students or students’ work. The Open Badge Scheme may accept evidence of skills which have been acquired while the student is engaged in academic studies, co-curricular and extra-curricular activities. It focuses on resilience (e.g. with clients), communications, leadership and influencing and social responsibility. Each badge strand requires students to successfully undertake specific tasks and evidence approximately 10 hours of student time in doing so. Such evidence in relation to the badges must be recorded in the student’s e-portfolio in the appropriate workbook. These tasks are also linked to enhancing the student’s HEAR.
Contact	Fiona Grant, Lecturer LLB Programme Leader Division of Law Dundee Business School (F.Grant@abertay.ac.uk)

Institution	Birmingham City University
Title	Creating Futureproof Graduates
Technologies	A range of online information, support and guidance resources e.g. videos.
Description	The Creating Futureproof Graduates toolkit is a series of resources that help students develop a number of key skills demanded by employers. The resources can be embedded by academics in curricula and adapted and contextualised to specific disciplines. The resources were designed and developed in partnership with employers, students and staff, and are aimed at helping students identify and prepare for critical incidents which, according to employers, epitomise the major problems that newly qualified graduates encounter when they start work in the 'real world'.
Contact	Ruth Lawton University Learning & Teaching Fellow for Employability (ruth.lawton@bcu.ac.uk).

Institution	University of Birmingham
Title	E-learning courses in employability skills
Technologies	This includes four online courses, hosted on the University's new VLE - Canvas. The courses are designed to be taken entirely online - delivered asynchronously and with minimal tutor involvement, making use of computer-marked assessment (e.g. quizzes), discussion boards, compulsory self-reflection and self-assessment, and peer assessment... and branching scenarios / video role-play simulations are being developed for skills like teamwork.
Description	A series of e-learning courses in employability skills as part of a well-established extra-curricular skills award (the 'PSA' or 'Personal Skills Award'). The project is currently being piloted in 2014/15, with a suite of four online skills courses available to students: <ul style="list-style-type: none"> » Employability essentials (compulsory for those students completing the PSA (Foundation) pathway). » Dealing with conflict in groups and teams » Developing commercial awareness » Recognising the value of your sport
Contact	Ellen Shobbrook, Project Development Officer - Personal Skills Award (e.shobbrook@bham.ac.uk)

Institution	Birmingham City University
Title	Learning from extracurricular activities
Technologies	e-portfolio; multimedia tools
Description	A 15 credit level 6 module in the Faculty of Health, Education and Life Sciences that may be accessed by final year students from any programme. The module is 'Learning from extracurricular activity' and the learning outcomes include demonstrating how extracurricular activity adds value to employability, presenting evidence as to how the programme aims have been furthered through extracurricular activity and using relevant resources / media / literature to support a case for articulating extracurricular activity with programme aims. The format of the assessment is negotiable. Some students complete a 3000 word assignment but others use the e-portfolio Mahara to collate different forms of multimedia evidence together and as a reflective diary of events. By reflecting on activities and linking them to professional aims and employability skills, graduates are better able to articulate their experiences and show their Mahara portfolio to potential employers.
Contact	Nicola Bartholomew, Senior Academic (nicola.bartholomew@bcu.ac.uk)

Institution	Manchester Metropolitan University
Title	Lynda.com assists with employability
Technologies	Online video resources
Description	<p>Tutors in the School of Computing, Mathematics and Digital Technology have been using Lynda.com, not only for study but also to support students' employability skills. Lynda.com is an online video training resource available to all MMU staff and students, comprising a large range of high quality professional video tutorials.</p> <p>Lynda.com is a great resource to help with teaching software skills in the School. However, tutors took this a step further to investigate the potential for Lynda.com use in supporting employability skills. These skills go beyond course knowledge and assist students to gain an understanding of the 'soft' skills that are so vital in many workplaces. The School worked with the Library to collate reading lists specifically to support their students' needs in different areas. This Lynda.com content was also used in students' personal tutor meetings as a directed activity focusing on body language and job interviews. By attending the sessions, rather than working on their own, students benefitted from tutors being on hand to discuss issues and direct learning.</p> <p>Personal tutors given a structured activity on body language and interview techniques to work through with tutees. • Reading list created specifically to address computing students' personal development in areas such as building confidence, effective communication and resilience. • Skills days organised to help students work through Lynda.com content and answer any questions raised.</p>
Contact	Emily Shields Deputy Library Services Manager MMU Library Services (e.shields@mmu.ac.uk)

Institution	Staffordshire University
Title	Online Abintegro - a mix of careers and employability skills development
Technologies	
Description	The Careers Centre are implementing an employability e-learning package (on licence from Abintegro) and branded this as eCoach. This has many interactive features and activities that can be built into the curriculum and also used ad hoc. It is intended to integrate the use of eCoach with personal careers coaching. When students log on to eCoach they are presented with the offer of a coach and can register for one to be allocated to them. Once this is done the photograph and contact details of their coach will appear on their view every time they log in. This will give them confidence in the use of the resource and access to help if required. eCoach and individual coaching supports students and graduates into work and in particular graduates into graduate-level work. This reflects a move from a guidance model to coaching supported by eCoach at every level of students' awards.
Contact	Mark Kent, Head of Graduate Employment, Enterprise & Commercial Development (M.Kent@staffs.ac.uk)

Institution	University of the Highlands and Islands
Title	Geography degree with employability a strong component
Technologies	Online learning resources
Description	The University has been developing a new Geography degree which will be delivered through a blend of face-to-face tutorials run by onsite tutors, complementing a fully online HTML5 course which students can access flexibly. The degree has a strong employability component and includes two modules: Employability Skills and Collaborative Working for Geographers and Workplace Experience. The first of these introduces employability skills, employability and. The second builds on this module and involves undertaking workplace experience. In both cases the materials are delivered online, complemented by face to face tutorials on-site. This allows the degree to be delivered over a wide geographic area.
Contact	Rosie Alexander, Careers Manager (Rosie.Alexander@uhi.ac.uk)

Institution	University of Hertfordshire
Title	INTI-UH Global Classroom Initiative
Technologies	Communications technologies (asynchronous and synchronous) e.g. Facebook, blogs, Skype
Description	In a relationship of close to twenty years, UH students at INTI Malaysia (International University and Colleges) have had insufficient opportunity to work with Hatfield colleagues in a meaningful and sustained way. The INTI-UH Global Classroom Initiative is an important step in drawing together the student and lecturer communities of both INTI and UH (spanning the UK and Malaysia). This pilot aimed to create benchmarks for module level co-operation between students and staff at the Hertfordshire Business School and INTI Subang; to identify areas of good practice at both institutions for wider dissemination across Schools and campuses; and to highlight potential areas of academic collaboration into the future.
Contact	Joel Shahr (j.shahar@herts.ac.uk)

Institution	University of Aberdeen
Title	A careers and employability skills course
Technologies	Blackboard (VLE) and Articulate Storyline (online training software)
Description	<p>The University has been using technology for a couple of years to deliver a careers and employability skills course through its VLE, Blackboard. Initially this was done using Blackboard itself but more recently using Articulate Storyline, where students can access it via Blackboard. Currently all level 1 students have been given access and the course has been promoted as a 'non-compulsory but highly recommended course'. It is entirely online and learners work through it at their own pace, taking around 2 hours to complete. Last year, following discussions with the Principal of the university, it was agreed that in order to deliver significant change to the widest possible cohort, the introduction of compulsory online courses covering the following three key professional and employability topics were proposed:</p> <ul style="list-style-type: none"> » Careers and Employability » Health and Safety » Equality and Diversity <p>In terms of Careers and Employability, the vision is to deliver 4 courses (developing your graduate attributes, presenting yourself effectively, finding work experience and career planning) to all students across levels 1-3. The courses will be notionally compulsory in that completion will be recognised on the enhanced transcript but no credits will be awarded. All courses will be delivered using Articulate Storyline and Blackboard.</p>
Contact	Kate Robertson, Employability Projects Officer, Careers Service University of Aberdeen (kr Robertson@abdn.ac.uk)

Institution	University of Exeter
Title	Collaborate
Technologies	Various
Description	Collaborate was a three year, award winning, Jisc funded project, that began in December 2011. It aimed to introduce new generation assignments, based around real-world and scenario based activities, designed collaboratively by staff, students and employers. It explored how assessments could be changed to embed employability at the very heart of academic practice, using digital technologies to support that process. Collaborate worked in depth with several modules from across the University, bringing in employers to work with programme teams and students, redesigning assessments according to a new model for Work-Integrated Assessment and introduced technologies to staff and students to support their learning and teaching. The project developed four packages of guidance based around assessment redesign, integrating technology, digital literacy and module evaluation .
Contact	Richard Osborne , Education advisor

Institution	University of Leeds
Title	Developing reflective practice in level 1 Life Scientists with the use of an e-workbook
Technologies	e-workbook
Description	A 10 credit, optional, career planning and professional development module available to students within the Faculty of Biological Sciences. It aims to help students consider their future career by introducing them to the range of jobs available to bioscience graduates, the skills employers are looking for and how to achieve them. The module offers students the opportunity to audit their own skill-set, reflect on their own performance and practice and develop a number of professional skills necessary for future career success. An e-workbook was developed for the module, and constitutes one of the assessed elements. The purpose of the workbook is to provide the student with an electronic, interactive document which they complete on a weekly basis; they can record information, input additional resources, audit their skills but they are also required to reflect and discuss on their participation in certain tasks, goal setting and their own development through the module.
Contact	Stephanie McBurney, Faculty of Biological Sciences, School of Molecular and Cellular Biology (S.J.McBurney@leeds.ac.uk)

Institution **University of Nottingham**

Title

Technologies e-portfolio (Mahara)

Description Exploring how students reflect on their year in industry (industrial placement) and how this gives the students evidence for the Registered Scientist status. Mahara is being used where students tag journal entries with the transferable skills as well as tagging their entries with the requirements for the competences required to be a Registered Scientist in order that they can use this as a way of showing how they meet this. Students are encouraged to plan, record, reflect and showcase and are also exposed to wider information about the employment sector, types of employers and placement/employment opportunities. See article [Practical ePortfolios: embedding placement reflection and personal development processes](#) (Kirstie Coolin and Judith Wayte) - Centre for Recording Achievement journal (Issue 25).

Contact Judith Wayte, Bioenergy and Brewing Science Building, School of Biosciences
 (Judith.Wayte@nottingham.ac.uk)

Institution **Duale Hochschule Baden-Württemberg-Ravensburg (DHBW-R), Germany and Oregon State University (OSU)**

Title Global Formula Racing

Technologies A range of synchronous and asynchronous communications technologies together with Cloud-based information management and collaboration tools.

Description Global Formula Racing! GFR is an international collaboration between the BA Racing Team from the Duale Hochschule Baden-Württemberg-Ravensburg (DHBW-R), Germany, and the Beaver Racing Team from Oregon State University (OSU) - linked to the [Formula Student](#) scheme in the UK, run by the Institute of Mechanical Engineers. It is an educational motorsport competition which aims to inspire and develop enterprising and innovative young engineers. It now operates globally and universities are challenged to design and build a racing car and compete in a range of events which demonstrate their understanding, skills and test the vehicle performance. Universities across the UK (e.g. Hertfordshire and Coventry) integrate the competition typically within a third-year year-long project for students working in a large team and it develops almost every aspect of discipline and employability related skills that students will need to prepare themselves for the workplace. Duale Hochschule Baden-Württemberg-Ravensburg (DHBW-R), Germany and Oregon State University (OSU) have taken this a step further by collaborating internationally to jointly enter the competition, thus bringing a new global dimension to student working and learning.

Contact [Global Formula Racing web-site](#)

Institution	Edinburgh Napier University and Edinburgh Telford College
Title	BA in Youth Work
Technologies	A range of technologies to support work-based learning e.g. Blackboard Collaborate and social media.
Description	The BA in Youth Work was developed by Edinburgh Napier University, Edinburgh Telford College and the City of Edinburgh's Community and Learning Development Partnership (ECLDP - the employer). The employer provided a full-time member of staff to work with the FE/HE team on curriculum design, ensuring that employability skills were fully embedded into the programmes. In addition, the employer provides work-based mentors who are members of staff and these are trained and the mentoring processes quality-assured by the University (though the staff members have already-established mentoring skills as part of their youth work activities).
Contact	Janis Deane , Programme Leader, Edinburgh Napier University

Institution	University of Bolton
Title	Digital storytelling for employability
Technologies	Multimedia tools
Description	Students are being encouraged to use digital storytelling in assessment and to produce digital artefacts that can support their case with potential employers. This has involved students blogging on their work placements and producing videos for a case-based final assessment: the preparation and presentation of a mock trial in a Moot court. Following up on this last example, law students have produced personal videos summarising their studies and what they feel they can contribute to the world of law. These video logs were reviewed by the Head of Recruitment at a local law firm who felt that they communicated students' potential more effectively than a written CV. According to the course leader: 'The '2 Minute Me' videos enable the students to display their academic and personal attributes to prospective employers, in a dynamic and accessible way. It's a pioneering and truly cutting-edge method of recruitment, made for the digital age.'
Contact	Jamie Coles (J.Coles@bolton.ac.uk)

Appendix 8 - FE case study vignettes



Institution	Birmingham Metropolitan College
Title	Auto Share and Learn - a collaborative initiative between industry and education
Technologies	Specialist online application developed using the open source content management system, Drupal.
Description	In a collaborative approach to skills development, Birmingham Metropolitan College is working with Jaguar Land Rover on a Jisc-funded project to create an online portal for supply chain companies, known as Auto Share and Learn. The project's steering group is made up of representatives from both industry and education to ensure that collaboration continues between the two sectors. Their shared initiatives include creating sharable learning resources, skills-swapping and engaging further and higher education students in partnership projects with employers.
Contact	Peter Chatterton, Consultant to the project (peter.chatterton@daedalus-e-world.com)

Institution	Welsh Government
Title	Digital literacy - the new Essential Skill for Wales
Technologies	Moodle, Cynnal e-portfolio, a range of technologies as chosen by students
Description	<p>As a result of its review of Key and Essential Skills, the Welsh government concluded that ICT skills alone are no longer enough for contemporary learners, who are often tech savvy but lacking in the knowledge and experience needed to manage technology successfully, safely and with pleasure. As a result, from 2015 the Essential Skills Wales qualification includes digital literacy instead of ICT as a core skill requirement for adults and young people in further education, work-based and adult community learning. The report drew from various models to recommend a number of skills strands which were further refined by Cardiff Metropolitan University and Jisc. These are:</p> <ul style="list-style-type: none"> » Digital responsibility » Digital information literacy » Digital productivity » Digital collaboration » Digital creativity » Digital learning

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	Welsh Government / Llywodraeth Cymru
	Department for Education and Skills (DfES) / yr Adran Dysgu a Sgiliau (AdAS)

Institution **Mid Kent College**

Title Virtual welding - when simulation technology is better than 'authentic' learning

Technologies Simulation software

Description Mid Kent College in Gillingham, Kent, is using simulation software to develop students' welding skills in a cost-effective way. Around 150 students use the virtual welding facility each year, often many times over, both in their own time and as part of a college course. This has enabled them to spend more time practising their skills without incurring the cost of scrap metal. In addition, tutors are only required to monitor activities. As there is no risk of injury, students aged 14-17 can also take part.

Authentic learning rather than simulation is usually preferable, but there are benefits to simulation in some circumstances, for example:

- » Students can hone their welding skills, gain feedback on attempts, and are passing tests quicker as a result
- » Real-world welding is expensive and limits the amount of welding students could do on the course in real time
- » Other students can experience welding freely including the Arts and Design students
- » Where health and safety issues are unusual, the capacity to do damage in inexperienced hands is high. Simulation of previously barred or limited activity allows open and frequent practice opportunities is a course strength
- » It is used in taster sessions for prospective students and to engage 14-17 engineering students who would otherwise be excluded from using a real welding course on Health and Safety grounds
- » Costs decrease the more learners able to use it
- » Simulation allows repetition of activity as a means of mastering a skill without reliance on others or resources
- » It has marketing appeal beyond the course

Contact Rosie Douglas, Teaching, Learning & Assessment Manager, Mid Kent College
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Institution Perins School Hampshire

Title Using personal learning spaces in a school

Technologies Mahara e-portfolio

Description Perins School, the oldest continuous education establishment in Hampshire, is currently a community sports college for 11 to 16 year olds. The school uses Mahara to provide pupils with personal learning spaces and to build their learning skills. In a Year 7 cross-curricular class, for example, pupils use their personal learning spaces to showcase their work in a 'project collection', and reflect on their skills and achievements in their 'assessment collection'. Pages are usually shared with the whole group so that pupils can feed back on each other's work.

This initiative demonstrates that school pupils as well as college students can develop the ability to reflect and manage their own learning. Reflective learning does not have to start at the door of the local college or university. There are also plans in the coming academic year for students to develop personal profile portfolios consisting of records of achievement that are updated periodically. These development records will eventually be used to support pupils' applications to become prefects.

Contact Mel Pearce, Assistant Head - Learning Skills

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Institution MyWorkSearch Ltd

Title Using technology to support and prepare students for employability

Technologies MyWorkSearch

Description MyWorkSearch is an online service that helps you affordably assist large numbers of people, providing employability skills, work placements and job search support in an electronic workbook presented in the form of an e-portfolio for use by subscribing colleges, training providers and other agencies. Using cloud-based technology, this commercially developed system offers a range of case management tools accessible via a single log in to help tutors, advisers and students manage progress towards employment. The facilities on offer include an audit, the ability to set and track targets and the system also helps identify students who are failing to progress. MyWorkSearch has the added advantage of scalability; the same functionality that works for one student can be scaled up to thousands in an organisation.

Feedback from the employability team at one college was:

"We use MyWorkSearch in a wide variety of ways and this is still growing and diversifying. Our students use it to access advice and conduct research, to construct CVs and also to look for work. We use it to track and contact students, to measure and record progress, to plan and support tutorial sessions and also for the delivery of training. We will also be using it to support the new Traineeship initiative as it allows for work experience to be detailed and comprehensively monitored".

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Appendix 9 - Sector resources and references



Title	Publisher/ author	Description	URL
HEA site on employability	HEA	HEA's guides, documents and activities with respect to employability	Link
HEA employability framework: Defining and developing your approach to employability: a framework for higher education institutions (2015)	HEA	This framework for employability was developed following a summit delivered by the HEA and the National Co-ordinating Centre for Public Engagement (NCCPE). The Summit provided a forum for debate and created an agenda for action to support higher education providers. A key recommendation was for a framework to support higher education institutions (HEIs) in embedding employability. This framework has now been developed by the HEA and informed by feedback from those in the sector. The questions are intended to be used in conjunction with the HEA publication Pedagogy for employability (2012) , which focuses on approaches to developing employability in the curriculum, and includes a selection of case studies to illustrate the enhancement of student employability in a variety of settings and disciplines.	Link
Enhancing employability through enterprise education: Examples of good practice in higher education	HEA	This HEA resource seeks to share, disseminate and encourage good practice in enterprise education across the disciplines. These case studies represent HEIs across the UK and provide diverse and innovative approaches to addressing enterprise education. Profiles of organisations that can support HEIs in addressing enterprise education are also included.	Link
Towards a competency framework for student work-based learning	HEA	This piece of work was undertaken at the Universities of York and Sheffield in order to <ol style="list-style-type: none"> <li data-bbox="644 1653 1337 1720">a. enable employers to decide which level of student may be most suited to the project they have in mind <li data-bbox="644 1727 1358 1832">b. articulate the full range of work-based learning opportunities sought by a university when in discussion with alumni and employers <li data-bbox="644 1839 1366 1906">c. create a skeleton document that can be adapted for different subject areas and different higher education institutions. 	Link

Title	Publisher/ author	Description	URL
e-Leadership Skills for Competitiveness and Innovation	European Commission, DG Enterprise and Industry	During 2012, empirica , International Data Corporation (IDC) and INSEAD worked together on a study for the European Commission's Directorate General Enterprise and Industry. The objective of the study, titled "e-Skills for Competitiveness and Innovation: Vision, Roadmap and Foresight Scenarios," was to develop a vision for Europe's e-skills for competitiveness and innovation, and to examine ways to face current and future challenges. A particular focus of the study was on e-leadership skills. The resulting analysis, roadmap and scenarios focus on how Europe can seize opportunities in innovation, new technologies and emerging forms of organisation and production, while maintaining its priority on inclusive growth.	Link
Efficiency and effectiveness in higher education	UUK	A report by the Universities UK Efficiency and Modernisation Task Group	Link
Tim Wilson's Review of Business-University Collaboration	HEFCE	The review highlights a significant improvement in the level and quality of business-university collaboration during the last decade. It includes details of how the government's long-term commitment to Higher Education Innovation Funding (HEIF) through HEFCE has helped to embed knowledge exchange with business as a core mission for higher education (HE) in England.	Link
Employer and student perspectives of employability	HEA	A briefing paper for a teaching and learning summit on employability, prepared by Maureen Tibby (May 2012).	Link
Video on the seven skills students need for their future	Tony Wagner	Video: Dr Tony Wagner, author of The Global Achievement Gap (2009) and co-director of Harvard's Change Leadership Group has identified what he calls a "global achievement gap," which is the leap between what schools are teaching, and the must-have skills of the future.	Link
Employer Engagement Emerging Practice from QAA Reviews	QAA	This report provides an overview of emerging practice in relation to the engagement that takes place between higher education providers and employers in order to support UK higher education providers in enhancing their practice. It is based upon an analysis of published reports arising from reviews by the Quality Assurance Agency for Higher Education (QAA) undertaken since September 2010. QAA has a strategic aim of widening employer engagement with quality assurance and the enhancement of learning.	Link

Title	Publisher/ author	Description	URL
OfSTED 2013 Annual Report for FE & Skills	OfSTED	This is the latest OfSTED Report for FE and Skills. One of its central themes is the need for the sector to improve all aspects of employer engagement.	Link
The 2013 UK Commission for Employment and Skills Annual Report	UKCES	The UK Commission for Employment and Skills (UKCES) is the main government sponsored body for advising and reporting on the future of skills and employment patterns. This is their latest annual report. It provides a statistical summary of the skills required by employers and where there are gaps, challenges and requirements.	Link
Skills for sustainable growth report	BIS	This is the government policy on the need to develop skills for employment.	Link
Rigour and Responsiveness (2013)	BIS	Government policy that strengthened requirements for improved skills education including apprenticeships and traineeships.	Link
Review of Vocational Education: The Wolf Report	BIS	The Wolf Report declared the qualification system not good enough to produce learners able to compete in the modern skills market globally. It led to the publication of Rigour and Responsiveness above.	Link
Enterprise for all: The relevance of enterprise in education	BIS	Lord Young's report focuses on entrepreneurial spirit in education. It is the latest in a series of moves from the government to make sure that young people leave education ready to work, with the skills and experience employers are after. The review covers the full breadth of education and is aimed at education leaders, teachers and all those involved in policy and delivery of teaching and learning. The Young report introduces to FE the notion of the enterprising mindset.	Link
Creating Futureproof Graduates	Birmingham City University	Creating Futureproof Graduates is a unique toolkit of resources created by Birmingham City University to help students develop a number of key skills which aren't always addressed in the curriculum but which employers tell us are needed, giving students the edge in the marketplace.	Link
		The resources are very flexibly designed to be embedded within your curriculum, adapted and refined to suit your disciplines or to provide inspiration for your own teaching materials.	

Title	Publisher/ author	Description	URL
Pedagogy for Employability	HEA	This guide is part of the Higher Education Academy Learning and Employability Guide series 1. The Learning and Employability series is primarily intended for staff in higher education institutions who are considering the enhancement of student employability. This is a guide to the pedagogy of employability.	Link
QAA Research Project: Evaluating the impact of higher education providers' employability measures	QAA	The "Call for expressions of interest" document issued by the QAA, evaluating the impact of higher education providers' employability measures.	Link
HEFCW ELTT work	HEFCW	HEFCW has various case studies resulting from "Enhancing learning and teaching through technology" (ELTT) work on their website - you can find them all here. These include information on good practices, ideas and a wide range of case studies on skills and employability.	Link
Enhancing student employability through technology-supported assessment and feedback	Jisc	How the curriculum can help develop the skills and competencies needed in the world of work.	Link
Supporting Employer Engagement through E-Portfolios	CRA	A CRA HE5P project: Employers, HEIs and Learners working in Partnership. The site details the work of the project, including reports and evidence from practitioners as well as providing information and guidance on the topic using e-portfolios to support employer engagement.	Link
Terms of Reference for The Wakeham Review of STEM Degree Provision and Graduate Employability	BIS	Terms of reference for a review of science, technology, engineering and maths (STEM) degree provision and graduate employability.	Link

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