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# Computing Graduate Employability: Sharing Practice





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# Executive Summary

**Computing is one of the largest subject areas in Higher Education, and is taught in almost every institution, graduating around 9,000 students every year. Yet Computing graduates are recorded as having the highest unemployment rates for all subjects, six months after graduation: although the numbers of unemployed graduates at six months varies widely between institutions, from 2% to 26%.**

The aims of this report are to expose the depth, complexity and richness of employability practices in the sector, and to share those practices more widely. The report places practices in a comparative context so that departments may learn “what works” from each other. It draws on research gathered from over fifty Higher Education institutions in a series of workshops, focus groups and interviews. It is never easy to find a way of presenting such detailed and complex data. We have chosen to foreground participants’ voices and to organise the report by the common employability *challenges* that academics face. Within that structure, we present clusters of similar practice that appear in several institutions, and a series of showcases that provide rich detail of specific interventions.

## **Challenge of the employability agenda**

A primary feature of this challenge is the lack of overall employability infrastructure; institutions respond with a mix of local and central provision. There is concomitant difficulty in tracking students with regard to their employability activities at any given point, whether they have pursued opportunities or made applications, whether they have engaged in the broader discipline or with professional networks. Employability successes are often attributed to the attitudes (and abilities) of staff, part of this challenge is maximising staff engagement.

## **Challenge of student engagement**

Some students will seize, and maximise, every opportunity. Other students do not see or prioritise the same chances, or face various competing demands that prevent them from doing so. In addressing this challenge, this report presents clusters of practice from a variety of Universities which represent a spectrum of approaches to student engagement in regard to making employability material compulsory, in mentoring students and in providing relevance and motivation by encouraging students to join (or organise) competitions and hackathons.

## Challenge of curriculum design

The discipline of computing has grown considerably, and with technological advances, continues to expand: space within a University degree is at a premium. Almost all institutions solicit the involvement of industry in regard to their curriculum, and this report includes a variety of ways this is instantiated; most also invite accreditation from the professional bodies, although the value of this is debated. There is a widely held belief that “soft skills” are greatly in demand in Computing graduates. There is less consensus on whether students lack them, and whether (indeed, how) the curriculum should provide them. In many institutions, the fact that computing needs more provision than standard PCs and normal seminar rooms is a problematic limitation. Resourcing affects the curriculum not only in matters of delivery but also in the limits it places on what can be taught – and especially what can be taught with “industry-strength” tools.

## Challenge of reaching Tipping Point

For most institutions, graduate employment is closely associated with students having had some industrial experience as an undergraduate. The year-long industrial placement is still considered to be a cornerstone employability practice, the best way for students to gain essential work experience. Wherever a placement scheme is in place, a universal marker for success is how many students take up the opportunity, and reaching the Tipping Point, where more students go on placement than do not, is aspirational. The report presents a collection of practices that support engagement and delivery across the placement lifecycle, from preparation to assessment.

## Challenge of finding alternative models to the “sandwich” year

When it is impractical for a student to do a placement year, they risk graduating with no industrial experience at all. Given that placement is associated with better academic performance and increased confidence and professionalism, this is problematic. The report presents a spectrum of possible alternatives to a whole year placement, and showcases three institutions with different approaches

## A view from employers

The report concludes with a series of interviews from a small number of employers, but representative of a wide range: four large-scale corporations Network Rail, Lloyds Banking Group, IBM, and HP. Two SME employers Ideaworks and Kinetic Solutions, and ectalent, a company specialising in providing one-year undergraduate student placements in high-technology companies in the United States.

These companies are all proactively engaged with a few Universities where they have found a willing response; almost all have also had negative experiences in trying to work with some institutions. They all select students (for placement, as graduates or apprenticeships) for both technical skills and soft skills, to ensure fit with the requirements of the role and with the company environment. Regardless of size, they all have significant development and mentoring support for interns and graduate recruits and invest in placement and intern opportunities as a saving on recruitment costs.

## Showcases

As well as aggregate data, this report presents showcases of employability practices from seven institutions.

### **Auditing employability:** University of York

Highlights a particularly proactive response to the key issue of keeping track of student's employment applications and status.

### **Dedicated placement support:** University of Kent

Highlights an approach to supporting the whole placement lifecycle, and how this has enabled the Department to meet the challenge of reaching Tipping Point.

### **Multiplicity of opportunities:** London South Bank University

Details one Department's response to the challenge of providing alternative authentic work-based experience, by offering students a wide range of opportunities to suit different needs.

### **Short placement modules:** University of the West of Scotland

Describes how authentic work experience is situated within the curriculum, with a particular focus on building confidence and professionalism.

### **Think Future:** Edinburgh Napier University

This Showcase addresses the issue of competing demands for students engaging with the employability agenda by replacing the normal timetable with employability events and motivating students to engage through personalised pathways and relevant interactions.

### **Summer internships:** University of Southampton

This is a response to the challenge of finding an alternative to the full year placement, with particular focus on the twin issues of ensuring students graduate with strong work experience and on building relationships with employers.

### **Transition Week:** Brunel University London

An approach that addresses the key issues of *relevance* and *motivation* with regard to the employability agenda, enabling students to see how employability and placement fits into their own university career.

# Introduction

## The Project

Computing is one of the largest subject areas in UK higher education, and is taught in almost every institution, graduating around 9,000 students every year. Yet in 2015, and for several years before, computing graduates are recorded as having the highest unemployment rates for all subjects, six months after graduation. This is of concern throughout the sector and this report is one of a number of responses.

- The Department for Business, Innovation and Skills (BIS) has commissioned an independent review, chaired by Sir Nigel Shadbolt, to look at the accreditation arrangements for computer science degrees to ensure that they continue to be fit for the future. It will focus on the purpose and role of accreditation and how the system can support the skills requirements of employers and improve graduate employability.
- The Higher Education Funding Council for England (HEFCE) has contributed an analysis of the employment data.

The project that produced the material for this report was undertaken by the Learning Development Group (LDG) of the Council of Professors and Heads of Computing (CPHC). It was co-funded by the CPHC and the Higher Education Academy (HEA). The purpose of the project was to share employability practices and in pursuit of this a number of related activities were undertaken.

- Firstly, in conjunction with the HEA, we ran five workshops for computing departments to network with, and learn from, each other. Of course, institutions are not all the same. They do not have similar intakes, missions or expectations, and they demonstrate a wide range of approaches to curriculum, student experience and employability. No single piece of practice represents “success”: everything works somewhere. Thus the goal of the workshops was to discuss computing discipline-specific approaches to employability: to share practice while respecting context.
- We also conducted four focus groups (again, in partnership with the HEA), which included questions with regard to the challenges of teaching computing, and to issues of accreditation and employability.
- Finally, we conducted in-depth interviews at seven institutions and with seven employers.

## The Report

This report is compiled from materials presented in the workshops and focus groups, and elicited in the interviews. One of the motivations for the project was to expose the depth, complexity and richness of practice in the sector, another was to share that practice more widely. Rather than leave the sharing within the workshop walls and between workshop participants, we present practices here for consideration, adaptation and use by a wider audience.

The workshops were all conducted under the Chatham House Rule, and throughout this report we preserve the anonymity which that protection affords. Where identity was significant to the practice, we returned to institutions to gather additional detail and to obtain permission to name them. Occasionally, where a quote illustrates more than one point, we have repeated extracts in different places.



The report is split into three thematic sections: **addressing employability; curriculum issues; placements**. These themes emerged from the concerns of practitioners “on the ground” and from their responses to employability issues in their contexts. These three areas were repeatedly talked of as locations of employability practices.

Within each section, we organise the practices in respect to the **challenges** that departments face, and the **key issues** within those. We also include **clusters** of practice, where we found several institutions responding to the same issue in similar ways, and **showcases** which provide more detail of specific interventions.

This report presents a significant range of practice, and much excellent practice. It is limited in that we only draw on what we heard from the institutions who participated in the project. Other themes may have emerged if we had talked with more – or different – institutions; we may have found more, and different, practices, we may have found additional excellent practices. Nevertheless, what we have learned shows considerable value and variety in the activities that computing departments undertake in regard to employability.

The material collected is irreducibly qualitative and descriptively rich, and we have chosen to preserve that richness rather than try and aggregate issues across contexts or present it in a pseudo-quantitative manner “*x departments did y things*”. In this research, we have selected and organised the practices, but as much as possible have left the description in participants’ own words, preserving anecdotal details. It is easy to believe that there is such a thing as “best” practice, and that, once found, it can be presented to other institutions to simply “do the same thing”. However, looking from outside and at a single aspect of provision, the window is very narrow. There may be many reasons by which it is “obvious” that a practice will (or won’t) work in a different context, if only the local culture and constraints were understood, as “the specific patterns of practice adaptation will depend on the fit between the diffusing practice and the adopting organization” (Ansari, Fiss and Zajac 2010). The descriptions and showcase details that we provide allows that fit to be judged.

A principle aim of this work is sharing: when assessing practices for potential adoption, educators make judgements on many criteria, including value and feasibility, and on a trade-off between these. Thus, something that delivers the same, or lower, value as current practice will be discarded. Something that is very much better than current practice (high value) might be considered even if it is difficult to instantiate in the new context (infeasible) (Nolen et al. 2009). This sort of assessment is facilitated by rich detail. Practitioners know their own context very well, are sensitive to authenticity and nuance, and recognise similarity (or advantage) to their own practice more readily from authentic expression than in a list of abstracted concepts (Fincher 2000; Tenenberg and Fincher 2007).

Finally, there is advantage to departments setting their local employability practice against a wide range of approaches from across the sector, as the comparative context illuminates both contrast and similarity. In this way, the compilation of material presented in this report can be used to screen local employability practice against other institutions’ approaches in order to generate new ideas. In other words, to use “best practices” to generate even better practices (Golden-Biddle 2013).

## Three Types of Content

This report is organised in three themes, Addressing Employability, Curriculum Issues and Placements. Inside each theme there are (up to) three different types of content.

**Challenges** – these express issues which are common across the sector and which influence all institutions. For example, in working with employability at all, any department has to consider how to create structures to respond to the challenge of the Employability Agenda and how to involve and motivate the interest of students in the challenge of Student Engagement. All academics should

recognise these challenges and be able to identify and relate their local response to them. Material within these is presented as a series of **Key Issues**. These are matters which commonly – though not universally – arise in respect of, or as a response to, the expressed challenge.

**Clusters** – these are collections of practice which are variations on a theme. They present a spectrum of similar activities which occur at many institutions. Words quoted in clusters are from multiple sources and anonymised, except in a few cases where the identity of the speaker is inherent to the practice described.

**Showcases** – a showcase is a singular example. These represent pieces of striking practice which are unusual, or exemplary of a specific approach, or otherwise “out of the ordinary”. The material within each showcase is presented to facilitate adaptation, so each is structured in the same way:

- **Overview of the practice**

- **Context**, a sketch of the department and institution, to so the practice may be understood as situated within its context.
- **What they do**, a descriptive overview of the practice.
- **Key characteristics** – aspects that are critical to the success of the intervention, or innovative in its application.
- **Benefits** – advantages that the practice affords.

Words quoted are from the individual named in the Show Case, unless otherwise indicated.

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## The following institutions participated in the project:

Aberystwyth University, Aston University, Birmingham City University, Brunel University London, Cardiff University, Carlisle College, Coventry University, De Montfort University, Durham University, Edge Hill University, Edinburgh Napier University, Glasgow Caledonian University, Heriot-Watt University, Keele University, Kingston University, Leeds Beckett University, Liverpool Hope University, Liverpool John Moores University, London Metropolitan University, London South Bank University, Loughborough University, Manchester Metropolitan University, Middlesex University, Newcastle University, Northumbria University, Oxford Brookes University, Sheffield Hallam University, Southampton Solent University, The Open University, University of Aberdeen, University of Abertay Dundee, University of Brighton, University of Buckingham, University of Dundee, University of Edinburgh, University of Greenwich, University of Huddersfield, University of Hull, University of Kent, University of Leicester, University of London Queen Mary, University of Manchester, University of Reading, University of Salford, University of St Andrews, University of Southampton, University of Stirling, University of Sunderland, University of Sussex, University of the West of Scotland, University of Ulster, University of York

The project was led by Professor Sally Fincher (Chair, LDG) with a steering group composed of: Sally Smith (Chair, CPHC), Dr Iain Phillips, Professor Carsten Maple and Professor Edmund Robinson, all members of the CPHC Committee. The project employed Dr Janet Finlay as researcher. The report was written by Sally Fincher and Janet Finlay.



# Addressing Employability

## Prologue

The landscape of the “employability agenda” is formed by a number of different pressures. Some of these are external to Higher Education institutions. The pressure of national statistics that show the proportion of unemployed computing graduates is felt at every level. *“The statistics ... it's good to work from data and if we say the statistics are correct, what they don't do is help with diagnosis; they just say something's going wrong.”* Neither are the statistics uniform (some institutions have excellent employment statistics) nor uniformly experienced. *“We usually have high graduate employability in that the ones that get jobs get graduate jobs. The problem we have is the ones who can't get a computing job don't get any job at all.”* However, whether students do – or do not – get jobs when they graduate is inevitably remote from the day-to-day routine of teaching and it can be difficult to see how to effect change. *“Well, I wouldn't want it to be my role but if I spent 75% of my time doing this I would want to know why things weren't working. If we have poor academic performance on some of our modules then make no mistake about it, somebody will be charged with finding an evidence base. In the meeting yesterday we were reviewing reasons why some of our programming courses weren't being as successful as they were, for instance. Members of staff were being charged to compile reports, and gather some evidence about that. But with employability that doesn't happen.”*

In all institutions, but especially in those that have employability as part of their mission and where the expectation is that every student is given a placement opportunity there can be great pressure trying to place students who are academically weak, or who are not skilled in presenting themselves or communicating effectively. The inclusion of employment figures in KIS and their use in marketing for admission purposes makes these issues visible to parents and a choice point for which universities students apply to.

## It's just a slippery concept: The Challenge of the Employability Agenda

So one of the defining issues has been the concept of employability itself. What does it mean in context?

I mean, some people stress discipline-based skills, others business awareness skills and so-called transferable soft skills, communication etc, etc. ... It's just a slippery concept to try and get hold of and to explain I think. And that doesn't help us to sell the concept of employability within an institution to either our students or our staff.

### Key issues

**Data is necessary, but not sufficient** Universities are used to measuring, and being measured. With employment statistics, though, what is being measured is not necessarily obvious. *"The statistics ... it's good to work from data. If we say the statistics are correct, what they don't do is help with diagnosis; they just say something's going wrong."* Neither are the statistics uniform across the sector (employment rates vary widely between institutions), nor uniformly experienced. *"We usually have high graduate employability in that the ones that get jobs get graduate jobs. The problem we have is the ones who can't get a computing job don't get any job at all!"* However, whether students do – or do not – get jobs when they graduate is inevitably remote, in time and in kind, from the day-to-day routine of teaching and it can be difficult to see how to effect change. *"Well, I wouldn't want it to be my role but if I spent 75% of my time doing this I would want to know why things weren't working. If we have poor academic performance on some of our modules then make no mistake about it, somebody will be charged with finding an evidence base. In the meeting yesterday we were reviewing reasons why some of our programming courses weren't being as successful as they were, for instance. Members of staff were being charged to compile reports, and gather some evidence about that. But with employability that doesn't happen."*

**There is no employability infrastructure** Universities are well-equipped to support the academic endeavour, they have well-established mechanisms for supporting teaching and learning, and for monitoring academic progression. Equally, there are strong structures for students' collegial life and welfare – sports facilities, student societies, canteens and cafes. There is no equivalent set of resources for employability, so institutions (and departments) piece together a variety of provision, some central, some sourced locally. *"Another big plus, from our point of view, is that we've got engaged academic staff. Coming from the Careers Centre, the engagement of academics in employability is a real issue. And that's not just at [our institution] I think, it's quite common."* In other institutions employability is managed from the department. *"2007 was when I started doing it ... I got a call from a company asking about employing our students. That was the first time it had happened where it had come directly through to the department rather than going to the university central careers group ... When I got that call I realised that actually we could begin to do this ourselves as a department"* Sometimes, however, a lack of infrastructure means that staff are working outside of their area of knowledge or comfort. *"Occasionally – I know quite a few of you are computing staff – there are computing staff that have been at the university for 30 or 40 years and are running sessions on assessment centres and things like that... [laughter] ... and probably have slightly more limited knowledge of what's going on."* Where responsibility is shared between central and local resource, gaps can emerge. *"We had a careers fair after the exams and we got an*

email saying, 'No students have signed up for this do something about it.' I said, 'Well, all the students have gone home. There's nobody here.'" (Laughter)

**Knowing where they are** With no administrative infrastructure, one of the key issues for departments with regard to employability is knowing where students are with respect to this wider context. An intervention can be found for every point in the student lifecycle.

- **Before they arrive** *"It is particularly when you think on Open Days one of the – not surprisingly – very common questions that you are asked, particularly from parents, is, 'What are your links with the industry like? What are the opportunities for work placement or work experience as part of your courses?'"* Some departments have a clear answer: *"... one of the things that is, I think, unique about us is that we have that one-to-one. When we talk to applicants and their parents about it, that's one of the things that they think, 'Wow, that's a really good thing about [this institution], is that they will give me that coaching.' We don't just leave our students alone to get a placement willy-nilly."*
- **Early start** Some institutions start with internal events. *"So in the first year we tried to enhance their enterprising skills and behaviours. We have a two week induction programme, which helps them with employability, enterprise, gets them connected with different services on offer at the university. And also we actually do diagnostic tests. So we identify the areas that we need to support them while they're with us. ... And then we carry on with those interventions in the classroom."* At other institutions, external engagement is offered early. *"We organise visits to companies and it starts from year one. It gives students the opportunity to see companies, work and see the kinds of jobs that are out there. Get to talk to the people in the companies and find out what's important for them when they hire and what kinds of jobs and placement opportunities that companies provide."*
- **Keeping track** Some departments have systems to track students. *"Everything changes continuously and it's only by engaging ... that you can keep track. It's getting the students in and a natural part of that network in the early stages that I'm interested in. To that end, we have here, an accreditation of academic record that goes around what the student studies."* Others use professional networking instrumentally, to know what the students are doing with regard to employment. *"They create the LinkedIn profile and they link into me so I know where all the students are. I get these updates, so I know if they've got what their summer job is, for example, whether they've got an internship or whether they're doing something else. If they start up their own companies – and a lot of my students are interested in web development and they start their own web development companies – I get an alert, so it's really useful for me as well."*
- **Supporting graduates after graduating** Some universities provide careers support to students well beyond graduation. *"Important for our students is the central university careers service will support all our graduates and help them find a job up to two years after they graduate. What's interesting about that is almost none of the graduating students who are unemployed exploit that facility."*
- **Alumni networks** Separate from central fundraising, many institutions value the disciplinary benefit that alumni can bring. *"I think we should all be bleeding our alumni networks dry because often these people are more than happy to come in and help in lots of different ways."* One of the ways alumni are used is to provide individual support. *"I think the Alumni Network is important. The kind of ad-hoc mentoring that can go on which is perhaps better done informally. I think there's value there."* The value that alumni networks represent is not time limited. *"[Give us] ... more details about who you are, what you've done and where you've gone. Where you've worked, what would you be happy to give feedback on, who would you be happy to give advice*

*to, do you have any jobs? Basically not going to the graduates at one year out, but going to them like twenty years out and actually hoovering them back up. I thought this was genius." In other institutions, maintaining contact with alumni are an extension of departmental activity. "There's really three groups. There's the students, there's the companies and there's our alumni, because once they've left here we still have that contact with them as alumni, as graduates, and their companies."*

- **Connecting students to a wider disciplinary engagement** There is a general recognition that students need to make links and develop their own professional networks. Departments find several ways to support students in this, sometimes with created opportunities. *"What else do they need? Good communication skills and networks. Networks are absolutely key. One of the things we've done is that we run a speed-interviewing practice session with employers and students each year. So we get about 30 employers in, 100+ students, and we have 15-minute sessions and they do 10-minute interviews, 5 minute feedback. And it works really well and they cycle round and they get three or four interviews in a night. It's meant to be a practice. The first time we ever did it, one of the employers came up to me at the end, 'I want to employ the student I just interviewed.'" Sometimes these events are organised by other parts of the University. "Networking events, trying to get the students finding out more about the kind of roles that are available to them ... meeting industry experts and things like that. So we have something called Meet a Mentor, which is run by Graduate Development Community."*
- **Professional profiles** In several institutions, students are encouraged to work with existing platforms. *"So networking, we start to build this up from the first year. We get them to do a LinkedIn account. Then, throughout the four years, when they finish a module, there's a skills section on LinkedIn to encourage them to fill out a couple of skills that they've learnt on that module. So keeping a record because by the time they get to 40, they'll be like, 'Oh, what did I learn? Oh, I can't really remember.' This way, they have an online record. That's a little nugget." In some institutions, this is more closely supervised. "I talk about the professionalism, having a professional face on LinkedIn. I don't care what you do on Facebook, but make sure this is professional – and I do go in and see, check that they've set it up properly, but it is public. That's my mantra – 'LinkedIn public, Facebook private?'"*
- **Student-led activities** Sometimes, this industry-facing engagement is organised by students themselves. When this happens it is welcomed by staff. *"We're really lucky, [in my institution], that our student society is incredibly active. They work themselves. They actually develop their own links with industry, with the links we provide them. That works incredibly well." Sometimes this is established, and sometimes quite new. "And most importantly, we've got our student-led, extracurricular engagement. We're a BCS student chapter. Our student society is a year old. ... Actually, they've invited students from [another institution]. They've invited other student bodies from [other institutions] from their friendship groups, from other computing students, to come to their events. And now they're building up momentum. So that's what our students are doing more for their employability than for, I suppose, ourselves." There is, however, no formula for success. "I don't know how you replicate a really active Computing Science Society. I think you just need that body of students, one year, who really get things going and that works really well."*

**Staff engagement** Employability successes are often attributed to the attitudes (and abilities) of staff. *"It's very important to get the staff buy-in and to get staff as being part of that".* Some institutions have mechanisms for distributing employability material equally, which may – or may not – be effective. *"I could have brought my personal tutor pack you get given at the start of the year, which is full of lots of lovely activities to do with your new personal tutees throughout your meeting sessions, one of which is to do some CV sessions throughout the year. I can confess that I, along with most other personal tutors in the school, have not bothered with that at any point".* Whilst some staff are naturally attracted to the agenda, others see value for themselves, for their own development, in becoming involved in employability. *"I do a lot of work with local special interest groups ... The whole thrust of that engagement is really a bit of professional development for me and the staff who come along to that."* In some institutions, this value is not individually created, but becomes part of a wider practice. *"There's a really active person who now heads up [our industry relations] team. And he just won over people because he just got things done and made links, and people were winning projects that they wouldn't have won otherwise. And of course, from the academic-staff point of view, the way to win hearts and minds is to actually leverage what they're doing. So that is one of the key parts of it."*





## Showcase

### Auditing employability: University of York

This Showcase highlights a particularly proactive response to the key issue of keeping track of student employability.

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## Context

Ninety-six percent of Computer Science graduates at the University of York are employed or in further study within six months of graduating, and ninety percent of those in employment are in professional or managerial level roles. Around half of York Computer Science students take a degree with a *Year in Industry* and a significant proportion of these return to work for their placement company after graduation.

Having a high rate of graduate employment is considered to be an important factor in recruitment with potential students and, in particular, parents use this as a key factor in selecting a University. At York it is also seen as a way of self-selecting the type of students that they want to recruit. Emma Hodgson is responsible for recruitment and marketing in the Department: *“What we’d like is to have lots of employment minded students on the course. Our data then improves, and then more will come again. It will become self-propelling”.*

Employability is therefore an important focus at York. However measuring success by the employment rate six months after graduation does not help the Department maintain or improve its performance. More important for them is to understand how students are thinking about employment, what they are doing about it and when, so that interventions can be appropriately targeted.

Dr Chris Crispin-Bailey is Careers Liaison Officer in the Department of Computer Science at York and has introduced an “employability audit” to address this. *“Just measuring what we’re doing by the final outcomes, the employment after six months isn’t a very good way of looking at things. It’s a too high level, so I’ve been trying to dig into the detail a bit more.”* Note: the words quoted in this Showcase are from Chris unless otherwise indicated.

## What they do

The employability audit was initially piloted with final year students but this year is being used with students in all years. The audit is printed on the back of a supervision form that students have to complete for a separate, compulsory task at the start and end of every term. *“This is actually on the same piece of paper as the main form that they have to fill in, so that they can’t not pick it up from reception; they’ve got it”.* All students are required to see their supervisors to complete the

supervision form, so the audit is completed in these sessions, and their personal tutor can discuss their responses with them. Alongside the audit form for students, all academic staff are given a simple crib sheet to help them to negotiate the process and provide appropriate support. This ensures some consistency between tutors and highlights the role of the audit in the programme as a whole.

The form itself uses a simple traffic light tickbox system to allow students to indicate their current status with regard to employment (with a similar option for further study):

- *Green* indicates they have already secured an internship, placement, or job depending on their stage.
- *Amber* indicates they are actively applying for an internship, placement, or job depending on their stage.
- *Red* indicates they have not yet started applying for an internship, placement, or job depending on their stage.

Students are asked to provide details of the companies and roles they have applied for or, in the case of Red, to indicate what are their plans or concerns. This two-stage process makes it very easy for students to complete – and even the “tickbox” exercise provides the Department with key information about which students may need more support.

In addition, there is a section on the form where students can request support from the careers service, which is then provided for them. *“This links in with what the Careers Service offers. So they can tick any of these boxes, and this is collated into a spreadsheet, and we send that to Careers, and they then have a list of the ones who want – for instance, if they want some interview training, they might have 16 students in the final year who want that, so they will organise a session for those students.”*

As the audit is repeated at the beginning and end of each year, the data allows staff to identify those students who may not be considering employment issues at all, or who may be late thinking about placement. It also allows the Careers service to tailor the support provided to the needs of the particular students.

## Key characteristics

### Integrated

The employability audit is integrated into existing, established practice. It is not something they have action separately. *“It works because it’s part of something they have to do at the start of term. So every student, in theory, has to fill this in. If we just had a website and we said ‘If you’re interested, go here and fill this in’ you’d only get 10% of students doing it”*

It is made part of existing events and requirements, from induction. In this way the audit provides an opportunity to start students thinking about employability from the start. *“It’s something we can do as part of induction – make sure the students understand what the form is about and that they need to fill it in and make sure the supervisors ensure they fill it in, even if it is to say ‘no comment’”*. For all students it is part of their regular contact with a supervisor. *“It’s part of the tuition system and it just becomes a normal part of the tuition procedure for personal tutors, then that becomes easier to ensure that almost everyone is doing it”*.

### Supported

Students are not left to complete the forms on their own. Their tutors prompt them to complete the form and provide further information beyond the tick boxes. *“If I just gave these out at the end of term to my students, and said, ‘Fill them in and send them back’ they might tick a few boxes, and then I’d have a tick here, saying, ‘I haven’t started doing anything yet’, but they wouldn’t fill in the r*

| <b>EMPLOYABILITY AUDIT SHEET</b>   |   |   |   |
|--|---|---|---|
| please complete this before your supervision meeting, and <u>discuss</u> with your supervisor  |   |   |   |
| <b>NAME</b>  |   | <b>Year</b>   |   |
| <b>COURSE</b>  |   | 1 <sup>st</sup> <input type="checkbox"/>  |   |
| <b>Uni Email ID</b>  |   | Other <input type="checkbox"/>  |   |
| <b>Other Email or Contact</b>  |   | MSC/FINALISTS - to allow us to contact you after graduation with job vacancies and targeted employability support | MSc <input type="checkbox"/><br>Finalist <input type="checkbox"/> |
| <b>Employment or Experience</b>  |   | <i>Fill in one or more sections that apply</i>  |   |
| <input type="checkbox"/>   | I have secured (Summer Internship / Graduate Employment / Other _____)  |   |   |
|  | <i>Please provide details (company, role, location) :</i>   |   |   |
| <input type="checkbox"/>   | I am actively applying for (Summer Internship / Graduate Employment / Other : _____)  |   |   |
|  | <i>Please provide details (companies, roles, locations), How is this going ?, do you feel confident ?</i>                   |   |   |
| <input type="checkbox"/>   | I have not started to manage my employability for ( Graduate recruitment / internship / other goal )                        |   |   |
|  | <i>Please Describe what your plans are going to be and note any concerns that may be holding you back from this goal :</i>  |   |   |
| <b>Going on to Further Study</b>   |   | <i>Fill in one or more sections that apply</i>  |   |
| <input type="checkbox"/>   | I have an offer for a Masters/PhD/ Other to commence after I graduate   |   |   |
|  | <i>Please provide details (Course, location) :</i>  |   |   |
| <input type="checkbox"/>   | I am actively applying for further Study  |   |   |
|  | <i>Please provide details (courses, locations), How is this going ?, do you feel confident of succeeding in enrolment ?</i> |   |   |
| <input type="checkbox"/>   | I have firm intention to pursue further study, but have not yet started to look   |   |   |
|  | <i>Please Describe what your plans are going to be and note any concerns that may be holding you back from this goal :</i>  |   |   |
| <b>Enhancing Employability – Request Support</b>   |   | <i>Tick any options that apply</i>  |   |
| <input type="checkbox"/>   | I would like help in drafting an effective CV   | <input type="checkbox"/>  | I would like to discuss/prepare for a summer internship           |
| <input type="checkbox"/>   | I need advice on suitable job sectors and employers   | <input type="checkbox"/>  | I would like to investigate student entrepreneurship              |
| <input type="checkbox"/>   | I would benefit from some interview training  | <input type="checkbox"/>  | I would like advice on further study options                      |
| The Careers centre will contact you regarding your selected options and schedule appropriate meeting(s) or advice.                       |   |   |   |
| <input type="checkbox"/> I have provided a copy of my <b>updated</b> VLE employability plan to my supervisor and request their feedback. |   |   |   |
| <i>Other comments :</i>  |   |   |   |
| <b>SIGNED</b> (student) _____ (supervisor) _____ (date) ___ / ___ / ___  |   |   |   |

*est of the information. The supervisors' role might be to be an encouraging friend and discuss it with them. We don't want the staff to be careers advisors, but someone who can encourage them to come out with what is the issue that they need to address, and then maybe help encourage them to go and get assistance".*

Staff are also supported with a crib sheet about the audit and their role, so that the approach to students is consistent.

## Simple

The single side audit form, with the traffic light tickbox, is simple and quick to complete. Linking this to the Careers Service makes it straightforward for students to request help. *"Otherwise, what happens is, they have to go themselves to say, 'I fancy doing interview training.' They have to go to the website and sign up. This way, they just have to tick a box and it happens".*

## Benefits

### Timely data

The audit gives the Department data on their students' employment status much earlier than they would otherwise have, allowing them to intervene earlier. *"So looking at the finalists, we can see how many of the students have got a job at the beginning of autumn term – that will be the placement students mainly – and then see how many have picked up jobs as we go along. Ideally, we want to try to optimise things to make sure that's happening early in the year that they're final."*

### Insight into student thinking

As well as the statistical data on how many students have secured jobs, or are actively looking, the audit also provides insights into student thinking that can inform interventions and strategy. *"Once you get say 90 of these forms and you start reading the responses and people saying things like, 'Well I think it's too early to start looking for job yet'. That's a common theme. You would then get into the mind-set of the students and understand what it is that you need to change the attitudes... If those are things we can do better than obviously we'll try to find strategies to make that more proactive from a Departmental point of view."*

### Prompt for students

The audit ensures that all students consider employability at least once in each term and reminds them of the need to take action. *"By having the form to look at every start of term, it reminds them that they should be doing these things. Because if they're ticking red every time for three years, they should be feeling a bit guilty that they haven't done stuff, so they ought to be thinking, 'Oh, my friend has done various things, and I haven't done anything'".*

It also encourages them to seek help, initially from their supervisor but also from other sources. *"So if it's something like, 'I haven't applied to industry yet, because I'm thinking of starting my own company', then, if you look down the list here, you've got the option of, 'I'd like to know more about student entrepreneurship'. So we tick that box, then we try to find ways to provide information that's useful to them."*

### Increased take up of opportunities

The Department is already seeing an increase in engagement with the sessions offered by the careers service that are made available via the audit form. *"It was pretty low in previous years but since we've started doing this, they're getting more people signing up.... About a third of the final year have done one or more of these..."*

The success of the Audit in Computer Science has led to it being adopted in six other Departments at the University of York.

## Otherwise, they'll go and code: The Challenge of Student Engagement

Our students are very instrumental. They'll do what they have to in order to get what they want. They're here for the code, really. That's why they're here, not because they want a career as a software engineer. They're here because they love computers. But if we say, 'No, this is part of your experience here,' then they'll engage with that. Otherwise, they'll go and code.

### Key issues

**It's not relevant to me now** When students start in Higher Education, getting a job is a remote concept. Chronologically remote – three, or four years in the future – and conceptually remote. They have come to be students, to learn and to mature. If they had wanted to join the world of work at this point in their lives, they would have taken a different route: instead they have chosen to study. Talking to them about work can be an irritation, and may be easily discarded. *“At the end of the day, we find it's down to the students individually; if they want to do something about it, they will. But our students, for some reason, tend to be more academic and interested in sitting there and bleeping at the computer and taking things apart or hacking at things than communicating with, I suppose, the real world. So it's a tricky one”*

Of course, there are other students for whom this is not true, for whom it is studying that's the distraction from “real work” and “real life”. Those students are more commonly motivated by, and attracted to, Degree Apprenticeship schemes. *“A reasonable number of the students ... through the higher-apprenticeship route, 10% or 15%, perhaps slightly more, are people who have tried a university degree and dropped out. One of them [went to University] I was talking to him at the enrolment the other day. And he said he went to [University]. He could sort of do it but there was nothing making him do it and he found it very difficult to keep motivated, to keep working. Of course [in the company] you've got your business manager and everyone else on your neck. There's no problem about motivation there!”*

**Getting into University is enough** For some students, at some institutions, the employment prospects at the end of a degree are extremely good. *“We've got a very very high entrance grade level ... We find employers really like the fact that we've had a really high intake because then they think, well, even if we don't add that much on, they've taken on good students to start with”*. The recruitment practices of some employers can reinforce this view, both in regard to academic successes prior to University entrance: *“We follow the maths, and want A or A\* at A level”* and also in endorsing graduates from particular institutions, with secondary regard to academic achievement: *“We go to the best [Universities] or the ones we know”*; *“The Blue Chips only talk to five-to-eight Universities”*.

**A first class degree is enough** For some students, intense engagement with an academic subject is the primary reward of University. *“There's a definite assumption that the ideal progression route would be to aim for a first, not worry about work experience, not worry about transferable skills and those kinds of things and that's the route to employment”*. For others, their families strongly encourage them to concentrate on their studies, in order to succeed, in order to give them the best chance of getting a job when they graduate. *“There's that idea, I think, from parents, that they should just be focused on achieving that first and that should be their golden standard, that employers look for. Actually, what employers look for is much wider than that.”* For

these students there is no perceived benefit in doing anything other than studying. *“But students just seem to want to get the degree and get out the other end and then get a job. Why we can’t plug [employability] with them? We keep asking them but nobody seems to want to tell us the true answer.”*

**Competing demands** Student may not have capacity to take on additional employability activities alongside everything else they are doing. Sometimes their constraints are from other parts of University life. *“Part of the problem is, if you put [employability events] on in the evening, a lot of students don’t want to be here in the evening. If you put them on Wednesday afternoon, they’re off doing other things, because that’s when they normally do sports and stuff like that.”* Frequently, the competing demands are financial. *“And then of course we have to remember that, you know, on average students work what, 8, 16 hours a week in part-time jobs to pay their way through uni, and that’s going to get more acute.”* Other constraints are social, or familial. *“Our students, some of them, because they come from a local area, perhaps they may be first generation into university, their backgrounds vary, English is not their first language, quite a number of them have carer responsibilities ... Mum and Dad can’t speak English.”* Still other constraints come from conflicts with the rhythm of the academic year. *“What you find is that around January time – December to January – people may have done their first couple of placement applications, may have been unsuccessful, and rather than continuing to engage in that, learn from it and improve, they drop out, and go back into concentrating on their academic study.”* Some students may be discouraged from applying for a placement because they don’t have time to do the work to identify appropriate placement companies. *“Because they’re working so hard on their degrees they don’t have a huge amount of time to do the research that is actually really specific [for finding a placement].”*

**Students are motivated differently** When staff are convinced of the employability agenda and its benefits, they sometimes have a simple expectation that it will be similarly engaging to students. They can arrange events in all good faith, and be startled by the results. Such events may be sourced from within the University. *“Last semester I organised with the careers service sessions about how to prepare for assessment centres ... The biggest attendance I had at any of them – these were timetabled, they were plugged into the students timetables, there were no clashes here – was 16 souls: that was a high watermark. I have organised some where I turn up to introduce a speaker from careers. We hang on and we hang on and typically there are about four students.”*

Frequently events involve external speakers, whose presence is often presumed to be straightforwardly motivating in its own right. *“We have a London-based experienced programmers group, drawn from across industry, people whose primary jobs is to do software development in companies, and they come together to try to talk to aspiring software developers about the challenges of the industry. And ten of them will come to your university and do a social in the evening. Getting an audience is virtually impossible.”* Bringing external speakers in is, of course, not without cost. Rarely is this monetary, but reputational. *“Fifteen people signed up to say they’d come, and then only five turned up. It’s just not worth bringing [external speakers] here to do that, because it’s embarrassing.”*

If talking alone is not attractive, employers can offer other incentives. *“[The employers] had a talk and there was a win an iPad Mini, so, ‘Come along, listen to us, and you can win an iPad Mini!’ There was hardly anyone there. I went around looking for students. One of my students was in the lab, and I said, ‘Just go down and sit there for an hour, and you might win.’ There were only three people there: he got an iPad.”* The motivation by prize mode is not uncommon. *“I think we struggle getting enough of our students to take up the opportunities we create for them. And I’d be quite surprised if that wasn’t a common refrain around the campus and sector.... the employers say, ‘Here’s a competition I’m going to run, and there will be a free iPad to one person out of the audience’ and you get two people and their dog turn up. You have to be quite resilient to keep going”.*

Over time, some companies have been dissuaded from dull offerings. *"I think they've now banned having CV sessions, because they had so many CV sessions from so many different companies, nobody was turning up."* Sometimes employers are confronted with unrealistic ideas about what they have to offer, how it fits with other offerings, and whether it might be attractive to students. *"[Employers] phone us up all the time and say, 'I want to do a guest lecture, I want to do this, I want to do that, I want to give a prize.' Well, we've no more prizes we can give."* Other departments proactively coordinate employer involvement, *"They do know that, actually, at the beginning of the year. I tell them that, 'These are all the opportunities we have.' I've made a special sheet of collaboration opportunities that they all have."*

There are other factors that are often thought of as motivators, but which do not have the expected cause-and-effect relationship on student attitudes to employability. *"The fees stuff hasn't made any difference. In a way that really surprises me. You know, I would have thought that, £9,000 a year, you'd be sitting there and you'd be calculating everything in terms of cost, and you'd say, 'Right, I've got to go, because it costs me X.' I've not seen any of that. I've seen more anxiety from students, but I've not seen, at the bottom end, more engagement, despite our best efforts."*

**Different students are differently motivated** No-one has trouble in motivating the intrinsically motivated. Some students will seize, and maximise, every opportunity. Other types of student do not see the same chances, *"Our placements currently run around 10%. It's really hard to engage students with that. And I guess the difficulty sometimes, as you said [at your institution] is, you can make the employable students more employable but how do you engage those kind of middle-ranking students and how do you give them a push as well?"* Some students' motivations may be manipulated by extrinsic rewards. *"Students – of course they are interested in employability – but when push comes to shove and they actually have to do something, do something which may not be part of their formal timetable, do something which doesn't give them 10% towards their class of degree, and they find it very hard to see an absolute hard tangible outcome."*

## Clusters:

**A cluster is a collection of practices that appear in several institutions in different ways. The claim here is not that local settings are the same, but that the same (employability) concerns shape responses that are similar, yet distinctive in context.**

## Hackathons & Competitions

In addressing key issues of student engagement – foregrounding *relevance* and focussing on what is *engaging* to students – several institutions organise (or participate in) events that have disciplinary engagement at the centre. These are not “talking head” events – however authentic the heads may be – but events where students have to deploy the skills (of programming, of computing, of teamwork) that they are learning and developing in their course. *“The difference is, they’re talks, aren’t they? People are talking at them, whereas if they’re coming to a hackathon, they’re doing something that they enjoy doing, and getting something out of it that way, whether they win or not”.*

At some institutions, the students set up competitions themselves. *“We’ve got an undergraduate computing club, an extra-curricular thing that has usually got maybe 20 or 30 members, and they run their own hackathon every year”.* Some Universities organise their own competitions to motivate students. *“We’ve done a number of multidisciplinary, extracurricular Hackathons. They’re one-day events where there is a business that comes on campus. They say, ‘This is who I am, this is what I have, and this is what my problem is.’ Then, the students are given non-disclosure agreements. We, actually, are very big on IP and we take the precautions in that respect. Then, the students get into their small teams. If they don’t have a team, they do speed networking and find themselves a team. Then, they deliver a presentation that solves that problem.”* Local competitions of this type are seen to bring in a wider group of students beyond the usual suspects. *“We hosted this sort of ‘Super Techies’ competition for the first time at [my institution] this year ... the students that actually applied for the competition weren’t students that had worked much alongside with careers, or with placements before. And then we incorporated a kind of ‘Meet the Employer’ type event with it. And actually, a lot of the students that came along also came because their friends were taking part in this competition. I think it probably was quite good in terms of attracting students who wouldn’t normally engage, or who wouldn’t normally turn up.”*

As well as greater exposure, this sort of event has other benefits to students, and to the local disciplinary ecology. *“[Hackathons and competitions] are important is because they provide multiple mechanisms for students, staff, and employers to collaborate ... they provide mechanisms for sponsoring various prizes, so employers might sponsor a prize to best use of our API, for example. There are also opportunities for judging, so students, staff, and employers can get onto judging panels to judge prizes. They’re also fun, so it increases student engagement.”*

Rather than developing local events, other institutions organise teams to enter externally-structured, international competitions, where students compete against other teams from across the globe. *“We’ve run the NASA Space Apps Challenge for three years in a row now, and we get the judges to be from industry, so they get that interaction. It’s much better attended ... they’re usually fully booked by the time they start running”.* This is often facilitated by staff interests. *“We have an academic member of staff who organises the ACM programming competition”.*

However, organising competitive events, even organising participation in them, can be burdensome, particularly if it falls on the same staff year-on-year. At some institutions, departmental engagement is simply to facilitate students to join in. *“One of the things we participate in quite*



*a lot are the hackathons, but we don't actually run any or organise any ourselves. In [our city] there are lots, and you can participate in a lot and they have all kinds of different varieties, so it does have some advantages being in the big cities for that."*

Benefits of competing in these events are seen as long-term, beyond the immediate fun and gratification of participation. *"So talking to the industry people, one of the key things they look at on the CV is, 'Have you done anything extra-curricular? Do you code at midnight? Do you do open-source projects? Why? On your own?' Hackathons contribute in that regard."* However, as with many good things, there may be associated unintended consequences *"The students who don't engage with this stuff say, 'I'm too busy. I don't have time; there's too much stuff in the curriculum,' So, you tend to get students who have got spare cycles, so they're very bright. Or students who really shouldn't be going, because their mark is going down but they're winning hackathon prizes left, right, and centre. You have to be a little bit careful in the way you manage that."*

- **ACM Programming Competition** An annual multi-tiered competitive programming competition among the universities of the world. <http://icpc.baylor.edu/>
- **International Space Apps Challenge** A two-day hackathon where teams of technologists, scientists, designers, artists, educators, entrepreneurs, developers and students across the globe collaborate and engage with publicly available data to design innovative solutions for global challenges. <https://2015.spaceappschallenge.org/>
- **Major League Hacking** The Official Student Hackathon League <https://mlh.io/>

## Mentoring

In addressing key issues of supporting the employability agenda – foregrounding *supporting employment engagement*, focussing on *networking* and *connecting students to a wider disciplinary culture* – many institutions facilitate mentoring opportunities for their students.

At the most local level, these schemes involve students mentoring each other while both are in-course. Traditionally these relationships are set up in respect of academic learning. *"Peer-assisted study sessions. So this is something that runs in several UK universities ... It's an academic thing, so students in their final year will help students in the second year with academic stuff. You know, 'How do I pass this module?'"* Some institutions have extended this model to structure the mentoring relationships around employability and placement opportunities. For some, this is relatively ad hoc. *"I think they're brought in to talk to students who are thinking about placements, to say, 'This was my experience,' but nothing more formal than that."* For others, the approach is more formal. *"We've actually done that for industrial placements. So students in their final year will help students who are looking for placements in their second year."* In either case, there are non-obvious conditions which affect the effectiveness of the intervention. *"That's down to having good students to do it. Sometimes it works and sometimes it doesn't."* On occasion, mentoring is cast as an activity not (primarily) to assist those being mentored, but to augment the employability of those doing the mentoring. *"Alongside [placement] ... we'll encourage volunteering, mentoring, the buddy schemes, all those kind of things, to build up their CV, to build up their experiences."*

Sometimes the mentoring is not student-to-student, but comes from employers. *"[Some employers] are fantastic ... they're a real joy, and our students get a lot of mentoring and support in a way that you wouldn't necessarily anticipate that people would want to invest, knowing that they've only got a short period of time with them. But ... most of them see it as a real kind of commitment to education and development, which is great."* A problem with these sorts of external relationships is that they can be fragile, and dependent on personnel. *"There was a time when we had some people from IBM doing some mentoring for our students ... But it was quite difficult to sustain*

*that, in the sense it was a couple of years where some of our graduates were keen to do something and then they moved on and then the next round just weren't quite so keen. So it didn't sustain itself. And I think that's one of the tricky things, to get something sustainable."*

There has to be a certain level of awareness for any of these schemes to flourish. *"Obviously, this relies on staff and student engagement. Students have to make an application, they have to enter into it; they have to want to do it. We find that the more mentors, the more students apply. [The best] are the ones where the academics have pushed it, so if an academic has stood up and said, 'This is a really good programme to get on,' we'll get more applications from that classroom than we do from ones where the academic member of staff don't know we're running it."*

Some institutions have structured mentoring opportunities for specific categories of student. These are most often run at University level. *"There's a University central employer mentoring scheme. That's actually focused particularly on certain student groups, students from certain backgrounds and students who are one of the first members of their family to go to university and it's designed to give students an opportunity to network because they might not have through their own family or social networks."* Sometimes such schemes encourage a virtuous cycle of alumni giving back. *"So ... when I was Pro-Vice Chancellor, I set up a scheme around mentoring for black and minority ethnic students. I got a message earlier this year from one of our students from – six years, is it now? Seven years ago, they graduated? – They came back and said, 'I just want to let you know, I've come back to be a mentor. I was mentored through this scheme, I got so much out of it.' Somebody at the Treasury mentored them. 'And now, I'm coming back to be a mentor.' Well, that's what our alumni should be for. They should be developing our students. Forget the money thing."* This parallels the sort of ongoing of relationship that can occur with placement students and future placement opportunities (see Virtuous Cycle, p48). Although long-term benefits are highly desirable, mentoring relationships can yield results in quite short order. *"It's supposed to deliver these enabling activities; it's transformational. That sounds a bit cheesy, but some of the transformations we've seen from the students is quite remarkable in such a short space of time; they only meet with the mentors three or four times."*

Most mentoring schemes are focused on the disciplinary link between mentor and mentee. Sometimes the relationship is deliberately set up to be more widely supportive. *"The Employer Mentoring programme ... sits outside the curriculum; it's for non-traditional students, so students who are mature students, or they're first in their family to go to university ... it's not curriculum or discipline specific, but we do make sensible discipline-specific matches ... It integrates around the career support that we do, it integrates with the discipline as much as possible ... but it's not for the purposes of discipline; it's not for the purposes of a dissertation or anything, it's a very personal kind of thing, a very outside-of-the-subject thing."*

Finally, establishing these networks can be seen as being of greater benefit than just to the mentors and mentees who actively participate. *"It's relationship building for [the department] as well, because we now have this network ... We started four years ago with a pilot of seven students; we now have 50 going out this year and I've got a bank of 84 mentors."*

## Compulsion

Ideally, student motivation would be such that compulsion would be unnecessary. *"What you want is the expectation. The ideal is, no compulsion and all the expectation, and then they conform."* However, that is not the general perception and in addressing key issue of *motivating students'* engagement with employability, several institutions make some activities compulsory, and use marks as an extrinsic motivator in direct response to student attitude. *"There is a bit of a problem sometimes in actually getting the students ... 'I don't get any marks for it so why should I bother?'"*

*There's a little bit of that mentality that we've got to fight against." and "... we just can't get them to engage in things that are not directly associated with marks. 'If it's not assessed we are not doing it:'"*

Following from this, in some institutions the equation is straightforward. If students are motivated by marks, then marks should be attached to activities that are important. *"One way to make these things useful is if you attach credit to it because then the students know, 'We can get some credits and marks ...'".* Marks may be attached to artefacts that build towards a student's portfolio. Sometimes this is their CV. *"So, actually, by making the CVs an assessed task – it's not a huge percentage – it's a way of getting them to take it seriously."* This can be very early in a student's career. *"In fact, in the first year the students do a module, and one of the exercises on that is to write a CV which gets assessed."* Other artefacts may be targets for marks. *"The assessment for that is we give them a dummy application and ask them to apply for it, and we assess the quality of their submission for that."* Although one of the problems of assigning marks is that the material is inherently difficult to grade. *"It's quite challenging giving meaningful feedback on 200 CVs in one go, but I think it's a really important thing to do."*

At other institutions marks are used to entice students to think of employability activities in a different way. *"We actually do it as an assessed part of the curriculum because as one of my colleagues once pointed out, this employability stuff isn't very palatable to students. It's a bit like giving medicine to your pet – you have to, sort of, sprinkle it in the food and disguise it."* Sometimes marks are used to direct student behaviours. *"Students go out on placements and they can't just sit in the corner. They have to interact, they have to engage. Part of their assessment is to talk about who they've met, what the whole organisation does – so they have to get out there."*

Sometimes assessment of employability work is introduced to give it the same priority as academic work. *"I mean generally what you can see is if students can choose between things which are all good for them ... they will choose and do the ones which have credit assigned to it. They will not choose the ones that don't, even if those other things are very interesting."* Assessment may also allow students to make time for activities that they see as "additional". *"There's always an assessment. When I say to students, 'Could you please apply for this? This is the right job for you,' they say, 'Well, what about my coursework deadline?'"*

Some institutions seek the benefits of assessment, without the direct application of marks. *"We timetable it and we don't tell them it's not assessed and we hope they don't ask."* Sometimes institutions make activities attractive in other ways. *"I think we're going to make it a requirement ... but I don't know whether it will be assessed. There's a possibility we might have a prize ... or something like that."*

Finally, there are risks associated with requiring all students to do work. *"It's that 25% at the bottom, if you like, who aren't engaging with it and don't want to. And you can make things compulsory but you are then chasing that and dealing with the consequences of not doing it. If you penalise them you then, actually, force them even lower."* Some are ambivalent about making employability activities compulsory. *"Making it more compulsory? That might help. It might help [those] people sitting in a lecture theatre doing their Facebook pages. Assessing it? Okay. Well, are you really going ... to mark someone down from a First to a 2:1 because they didn't do very well on a CV-writing exercise? I don't think so. (Laughter) So it's a tricky one, the amount of compulsion you put in."*

## Showcase

### Transition Week: Brunel University London

This Showcase highlights an approach to addressing the key issues of relevance and motivation with regard to the employability agenda, enabling students to see how employability and placement fits into their own university career.

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## Overview of the practice

### Context

The Department of Computer Science at Brunel University London has a well-established industrial placement programme, offering a credit-rated, one-year sandwich placement at the end of the second year. The placement is supported by a team that includes an academic Placement Director in the Department, together with Placement support staff who are based in the central Professional Development Centre (PDC) but offer dedicated support to Computer Science. The latter work closely with the Department, contributing to teaching related to placement preparation, and attending departmental meetings and other forums. Professor Rob Macredie is clear that, although located centrally, they are an integral part of the Department: *"We think of them absolutely as departmental colleagues"*.

As well as supporting placements, the PDC takes part in an annual Transition Week, at the end of the academic session. This is a University-wide week of activities for students in all year groups to help them prepare for the next stage in their career or study. As part of this week, the Department of Computer Science provides activities tailored to each year group.

### What they do

Transition week is in May, at the end of the academic session, and includes activities for all year groups. Level one students have sessions on employability and are encouraged to think about gaining work experience over the summer, through part-time work or internships. *"They'll have done some of that through the year, but we do it in a very targeted way as a university, in that week."*

Level 2 students will focus on placement and meet students who are coming to the end of their own placements. *"So the people going out on placement, or still looking for placement, are physically in the same location as the students who are on placement, but due to return at the start of the next academic year."* This is also an important week for students who have not yet secured a

placement: they can get additional support and guidance, often leading to them finding a suitable opportunity. *“We still place around 30 students over the summer period, so it’s important for us to motivate and keep those students still looking for placement engaged.”*

Returning placement students, together with anyone not doing a placement year, are helped with the transition to the final-year project, with an introduction to the project activity and a “speed-dating” event to talk to potential project tutors. *“You put your name down for any tutor you want to see. We’ll see them in groups of four, for 15 minutes, initiating a quick conversation about the project, and then they follow up after the event.”* This gives students the chance to begin scoping their projects over the summer period and to identify a tutor before their final-year begins.

As well as the level-specific events, Transition Week also includes “fun” events such as the Code-a-thon, run by Computer Science, but open to all students, as well as opportunities to speed network with Brunel Alumni.

## Key characteristics

### Institutional but situated

Transition Week is a university-wide event signalling the importance Brunel gives to employability, but specific events are provided by individual Departments to address the particular needs of their students. Events are tailored to year groups, so that they are situated and timely for each student.

### Everyone in the room

Level two and three students are brought together so that those planning to go on placement can talk to those who are returning. *“So they get to mix, and that’s a very powerful shift in knowledge, if you like, between the students.”* Transition Week also includes sessions where successful Brunel alumni talk about their current careers and career pathways.

## Benefits

### Promotes the importance of employability and placement

Transition week encourages and motivates students to see the relevance of employability and to take steps to move forward on their own career path. Students who have been on placement promote the value of the experience to other students: *“So they’re saying, ‘Look, you know, this has really helped my discipline, it’s really helped my professional development, it’s helped with my subject knowledge.’ The placement students saying that is much more powerful than me telling them.”* This locates placement as a critical factor in enhancing employability.

### Prepares students for their next phase

As they reach the end of one phase, students are given guidance on how to prepare for the next, whether it is through internships, placement or projects. First years are encouraged to find relevant summer work. Level 2 ‘stragglers’ are helped to find placement. Level 3 students are able to negotiate a final-year project and secure a supervisor. Having some events shared between year groups also enables students to have a view of the whole pathway, sensitizes them as to what to expect of future transitions and reinforces the sense of community in the department.

## Showcase

### Think Future: Edinburgh Napier University

**Think Future: Edinburgh Napier University** This Showcase addresses the issue of competing demands for students engaging with the employability agenda by replacing the normal timetable with employability events and motivates students to engage through personalised pathways and relevant interactions.

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## Overview of the practice

### Context

Edinburgh Napier University (Napier) has a strong institutional focus on employability. They have a Placement Office and Careers Service, both of which are centrally-resourced and also have staff dedicated to supporting staff and students within Schools. The centrally-located Confident Futures team provides a comprehensive and professional programme of workshops focused on developing the skills, attributes and attitudes needed in employment and enterprise. The School of Computing is proactive in developing employability initiatives. Along with Scotland IS, Edinburgh Napier runs *ePlacement Scotland* ([www.e-placementscotland.com](http://www.e-placementscotland.com)) to raise the profile of placements in the ICT sector in Scotland and to increase the numbers of quality placements available to computing students across the sector. The School sends around 40% of their own students on year-long industrial placements.

Recently the School of Computing established a new strategic role of Director of Graduate Employability, with a remit to ensure that the School benefits fully from the university's initiatives.

For several years the School of Computing at Napier have run a Student Conference, with recent graduates invited back to talk to current students about their experience of transitioning into work. However, in spite of the perceived benefits of learning about employment first hand from people like themselves, attendance was variable. *"Sometimes it was well attended, sometimes not so well."* Increasing student engagement with the event, both in terms of attendance and action, was a priority of the new Director, Dr Colin Smith: *"When I took on the role of Director of Graduate Employability, I looked to augment the student conference into an employability week, using the conference as a starting point, a 'call to action' for students to get involved in further activities to help prepare themselves for life after university. Yes, so you've just been inspired by recent graduates, what are you going to do about it?"*

The Think Future Employability Week was established to encourage active engagement and take advantage of the conference to encourage students to take action on their own path to employment. Initially engagement was still limited. *“We put in a number of sessions, we had the student conference and it was okay, but attendance was not what it could have been.”*

Subsequently a more radical step was taken. *“So across the School of Computing, in week 6, we very bravely said, ‘You’re not going along to your normal third year group project lecture. You’re going to this instead.’ We took the risk that students would think, ‘Oh, it’s a week off – off skiing’ or whatever, rather than think, ‘Oh, gosh, I’ve got some time to go along to that.’”*

### **What they do**

Think Future now replaces the normal timetable across the School, at all levels, for one week in February. Despite the perceived risk, this has led to an increase in attendance and *“some really nice engagement with that week”*.

The week includes the student conference, an employer networking event and targeted workshops. Students are each given a personalised timetable, appropriate to their course and stage.

Recent graduates are invited back to talk to students about their own transition into a career. *“Graduates come back. Young graduates two years down the line. They tell interesting stories, not of the great work that [their company] does – we’ll slip that in – they tell interesting stories of how they navigated their career paths.”*

It is important that they are recent graduates, similar in age and background to the students, and able to relate to them, able to *“give them information, insights that they wish they had known or wish they had taken advantage of while they were a student”*. They come from a range of companies – not just the larger ones, or those all students want to work for. This can give students a reality check and demonstrate that interesting possibilities exist in places they may not have considered.

Think Future ends with a “big bang” employer networking event, an opportunity for students to meet employers and talk about placement and employment opportunities, which students treat very professionally. *“Like a Careers Fair, there are tables, there are banners, there are giveaways... It’s very much a turn up and chat... but the students were amazingly focused... students were dressing up and clutching CVs and working the room”*.

The week also includes a programme of targeted workshops, supported by the School, Placement Office, Careers Service and Confident Futures teams. *“CV sessions, assessment centres, some placement sessions ... we had 47 students turn up to a session on how to do an elevator pitch”*.

## **Key characteristics**

### **Weaving it all together**

Think Future is not an event developed in isolation. It draws on and augments the resources and activities already available through Napier’s rich employability initiatives, and weaves these together to provide a coherent and targeted week of events. It provides an opportunity for students to reflect on their own position with regard to employment and to participate in activities relevant to their year and programme.

## Replaces timetable

Think Future is not an extra-curricular event or an addition to an already busy timetable; it replaces the timetable and in doing so addresses the issue of competing demands. This not only makes it possible for all students to attend, but it signals the prominence and importance given to employability within the School.

## Individual pathways

Although Think Future caters for the entire School, each individual student is given a personalised timetable indicating their pathway through the events, which are tailored to be specific to the different subject areas in the School and to each level of the programme.

First years are introduced to the industry and helped to start planning their CV and LinkedIn profile; second year students develop a strong CV and placement application; third years consider summer placements and applications; fourth years come back to present at the student conference and post graduate students focus on ensuring they have all they need to progress to work after their intensive course.

This is an important aspect in increasing motivation and ensuring engagement. *“What we did to secure uptake was have events that were focused for students on each subject within the School of Computing. If I’m an Information Systems student, these are the events for me. But not just that, we had events for every separate year of the programme.... Some of those events, other people were going to, but it still gave the students a sense that ‘this is my pipeline’”.*

## Benefits

### Situated experiences

Using recent graduates as external speakers gives students *“situated experience from people who have quite recently been through it. It’s people like them.”* They can relate and are inspired by them. The gulf between university and work is bridged and employment is made more relevant.

### Relevant positioning

Students each get something different out of the week, which is relevant to their current status. They are encouraged to reflect on their employability in a way that is appropriate for their programme and level, without being distracted or overwhelmed by elements that are not yet relevant to them.

### Deeper engagement

Linking the student conference to a full week of employability events and activities encourages students to think more deeply about their own response to hearing from their recent peers. *“Students could immediately use the conference as a call to action. ‘I better get sorted here. There are lots of great possibilities, but I need to position myself’”.*





# Curriculum Issues

## Prologue

When considering employability within a higher education context, there are some fundamental curricula issues: what is a Computing degree and what sort of student does it graduate? Is computing a vocational degree (like Law, or Nursing)? And, if so, who certifies graduates for entry into the profession? In the majority of Universities, the curriculum is devised by each department with input from external standard documents (for example, the QAA Benchmark, the ACM/IEEE curriculum documents) and input from employers in the form of Industrial Advisory Boards, or less formally from local networks, or through staff research contact.

Many degrees in the UK are accredited by the BCS as partial exemption to their own qualification of Chartered IT Professional (CITP). Others, with various subject concentrations, may be accredited by other bodies, for example Skillset in respect of the creative industries (usually animation, or games) or GCHQ in regard to cyber security.

Some Universities offer degrees with different structures and different relationship to employers. For example *IT Management for Business* (ITMB) are degrees specified, co-ordinated and marketed by the employers group *The Tech Partnership*. In another model *Degree Apprenticeship* programmes are co-designed between specific universities and employers, these enable students to work for a degree whilst employed (fees are met by the Government and the employers).

## A reasonable challenge for most academics: The Challenge of Curriculum Design

We want to teach the student how to be more generally useful in the field. I imagine that's a reasonable challenge for most academics. Theoretical versus practical skills – and the fact that the practical skills keep changing.

### Key issues

**Size of the curriculum** The discipline of computing has grown greatly and, with technological advances, continues to expand: space within a University degree is at a premium. This is expressed partly as a simple issue of bloat. *"We sometimes cannot teach certain topics, because we don't have expertise or it's just too demanding or we cannot fit it in our curriculum. At the moment, we have an issue – there's far too much that students have to be exposed to and there isn't enough time."* Partly this pressure of increased content is expressed as a matter of how much material should be prescribed. *"From a curriculum point of view, it's a big question; what is computer science? You can't really have every single student take every single module. If you go down the route of specialism or specialisation, you might end up with computer scientists who haven't done any courses on algorithms or data structures ... there's the tension between the flexibility for students to pick-and-mix [and] to associate core content with that degree title 'Computer Science'. It's a big challenge."* Partly the issue of curricula pressure is expressed as a matter of disciplinary identity. *"Computer Science has changed a lot in the last 15 years. Computer Science has had its traditional relationships with maths and with electronics and now it's becoming very interdisciplinary, so we've got health informatics, bioinformatics, the whole security area touches upon the user experience, even the user interface as psychology and so on. That's not quite reflected in the curriculum recommendations. All the disciplines still try to maintain almost in isolation ... That's happening, obviously, in the research area but it's not reflected, actually, in the template curricula that are being provided."*

**Accreditation** Many UK Computing degrees are accredited, most by the BCS or IET. There are a number of views associated with this. The *fact* of accreditation – of external standards/scrutiny – is generally favoured *"So, we are constantly examining our provisions to make sure that we comply with BCS. We had a visit recently, so we are very aware, very aware of the weaknesses and the things that we have to work on. And it's good by the way, it's not just box ticking. We tend to value this exercise, because it's nice feedback and it provides a moment of introspection. We go away and think, 'Can we do this better?'"*

- **Accreditation process** However the *process* of accreditation raises more concerns. *"It's sometimes quite an ordeal. I have to say, in terms of the administrative process, it is a nightmare. It really takes a lot of energy, it interrupts work, it's the monkey on somebody's back, somebody's got to lead it, somebody's got to work through it all, it's not a pleasant thing, I don't think. I don't think we're excited by it. Yes, it's useful, but it's a lot of work."* The quantity of work involved can change the perception of the process. *"It's nightmarish. The three months preceding it, everyone is so tense. It could be a positive thing and it becomes a very negative."* The outcome of accreditation is also a matter for debate. *"So, instead of just a BCS visit coming, then and looking at your courses, it would be much nicer, wouldn't it, if they came in and somebody worked with you to say, 'Look, we think this is...' rather than just this big bang event, you either get it or you don't or there are some recommendations."* The possibility for a

different sort of process, and different sort of outcome, is reflected in other forms of accreditation. *"We're in a slightly different position in that we don't offer a computer science degree. We do things like Ethical Hacking and we do Computer Games Technology, Computers Games Applications Development, things like that. So most of those aren't BCS accredited, they're accredited by GCHQ and Skillset and organisations like that ... It's interesting working with different accreditation groups because you get very different styles of feedback from them. We find Skillset really useful because they have big commercial involvement and you get lots of really helpful feedback."*

There are associated concerns that material is put into the curriculum, or material is taught in specific ways, not for academic reasons, but to satisfy accreditation requirements. *"It feels the BCS accreditation is just adding another level and set of constraints to all other problems we've got to deal with when coming up with curriculum and course design and module design, it often feels really awkward and we're sitting there, Oh, what kind of dodgy artificial construct can we now introduce to just tick off that one more thing that we've got to do there. Often, it feels more in the way than helpful, unfortunately."*

- **Accreditation currency** In a fast-moving field, curricula guidelines, whether in regard of accreditation or not, often suffer from lack of currency. *"Curricula of reference, like the BCS as well the ACM and IEEE ... by the time they converge and become stable, that's a six-year gap between different versions. By then it's woefully out of date."* Sometimes out-of-date material specified within external guideline becomes embedded. *"BCS accreditation requirements are quite rigid and sometimes a little bit behind. When I first had a look at the curriculum when I took over teaching, I thought, 'Why have we got these zombie courses?' They're just there to satisfy accreditation requirements. So ... not quite up to date."* Accreditation currency is not only an issue within Universities. *"I think employers see it as a mark of quality but not necessarily of content ... They don't necessarily dive too much into the content and see if it is matching up to the BCS accreditation. I think a lot of them feel they have moved a long way past the BCS agenda anyway. Certainly the faster moving industries. I think are right to a certain extent."*
- **Accreditation value** The value of having a degree accredited is a contested issue. *"A colleague ... got a bit annoyed when we pointed out that his module had to emphasise this bit because of the BCS, blah, blah, blah and he said, 'Who needs more whom? Is it us who needs the BCS or do they need us?'"* Associated with this is the perception that no-one (outside of the accrediting bodies) is really concerned with accredited degrees. *"Students are not interested and most employers don't ask." [Researcher] Is [accreditation] something that employers you deal with ask for? "No, they don't care ... from employers, usually you get a list of software packages, a list of programming languages, maybe certain areas like databases, ... operating systems and so on. Those kinds of things. Accreditation is never mentioned. They wouldn't say, 'Applicants should have a 2:1 in a BCS accredited...! No, they'd never say that."*

**Soft skills** There is a widely held belief that "soft skills" are greatly in demand in Computing graduates. There is less consensus on whether students lack them, and whether (indeed, how) the curriculum should provide them.

- **Demand for soft skills** Some employers are explicit in regard to the value they place on soft skills – although never as an alternative to technical competence – and this is, not uncommonly, communicated explicitly to students. *"[The company] founder when she comes to talk to our first years, she says, 'Look, technically I have to be honest, if you're coming out of [this institution] with a 1st or a 2:1 we can probably teach you anything you need to know that you don't. You will be able to learn it, we will be able to teach you. There are things there that we can't teach you and they are the soft skills.' The students don't necessarily like finding that out."* Technical

competence is often assumed from the degree. *“We have had a number of industry contacts who have come in – a range of speakers – who have said that the graduate attributes and the communication skill and the team-working skills are very important. They take for granted the fact that they’re going to graduate with a decent background in computing and a good level of degree.”* Employer demand for soft skills can be more obliquely expressed *“[I looked] over the past two years at all of the jobs that were classed, grouped under ‘IT’ in [this geographic] area. I think there were about 2,000 jobs in the past two years that I looked at. I was really surprised that after analysing the job adverts that they hardly ever specified actual technical skills. If they did it was quite vague or they weren’t clear about what they specifically need. The thing that they always talked about was ‘creativity’ and ‘project management’, ‘eagerness to learn’. The emphasis shifted from what I would have expected ... that technical skills would be predominant.”*

- **Incorporating soft skills** There is an inbuilt tension between different types of material within a curriculum. *“One of the things that I raved on about was the attention between the soft skills balance and the technical skills, and what should be emphasised in the curriculum. Where it should be placed in the curriculum. There’s always a tension about how much you do.”*

Some institutions take the position that these sort of skills should not be taught, that they’re stealing from other (more important) curriculum content. *“I agree that soft skills are very important but I disagree that they should take the place of some important modules in the computer science curriculum.”* There is also a perception that such skills should not need to be taught at this level. *“We need to find the right balance ... we keep introducing modules such as ‘study skills’, because the kind of challenges we have over the last few years is ... [which is] not acceptable at the university level ... we had to drop maths and introduce ‘study skills’. Which I can understand; it reflects the kind of students we are getting. But in terms of curriculum, I don’t think it was the right decision to take.”* Technical components of the curriculum are seen to be



demanding in their own right, and to need curricula space. *“Operating systems being highly theory-based ... they do have to learn a lot of concepts. And this is where I say I would like to have two lectures a week – just because there is so much theory that it needs to be covered.”*

At some institutions there is no barrier to incorporating soft skills with technical skills. *“The students at [the other University] had to have those soft skills taught to them just the same as they do here. We had it integrated into our curriculum. You do presentations as part of your units. It is not taking time out from other units it is embedded in the units. They don't have to be two separate things. They are not two separate things in the workplace.”* However, there is some unease about staff ability to deliver “soft” material. *“I worry about the soft skills ... being the blind leading the blind ... I remember when I was in university I had to do all these things ... I wasn't really taught to present, I was just forced to present. I wasn't really taught how to work in a team. I certainly wasn't taught by anybody who knew anything actually about real teamwork. Then we assess people and people's degrees get affected very negatively by asking them to do things that we haven't taught them how to do. This is a great worry I always have when we say, 'Let's teach more soft skills.'”*

One of the challenges of incorporating non-technical teaching is encountering institutional barriers. *“I would like ... to run a multidisciplinary workshop or something on innovation and working together with participants, bringing employers in. I wanted to do it with engineering, electrical and mechanical but we couldn't get our timetables to match up. Then there's the whole problem about their courses are accredited (ours aren't) and they have certain things to fulfil.”*

Some problems are more subtle. A curriculum may ostensibly contain a balance of material but suffer “curriculum drift” between the specification of a module and its delivery. *“What I find our students don't like doing is personal development planning. We start – we've attempted for*



*years to get them to start a personal development plan in Year 1, improve it in a Year 2 ... and then have some sort of personal development plan as part of their final year project. But they hate it. They don't like the concept of personal development planning and I find it very difficult to get them to do it. And therefore it is dropping, slowly, out of what is actually done. It is there in the course structure diagrams. It's there, but we can't get them to do it ... "*

**Toy problems** One of the problems of teaching computing is the mismatch between the students' experience of computational devices and the knowledge and skills needed to create software. *"There is this 'instant reward' culture among students that they have to – in week one – develop the app that will make millions for them. So you introduce the first algorithm to search for a record in a database and they go, 'Man, this is lame. How does that relate with my cool apps running my Android?' It doesn't. (Well, maybe a little functionality.) So there's a huge gap between what students experience in a day-to-day base in terms of the sophistication of the functionalities they experience in their day-to-day life ... and the very, very simple algorithms and very simple techniques that they have to be introduced to, to begin with. That is a real disappointment for them. I fear."*

The implications of the gap between foundational knowledge of computation and software artefacts "in the world" have repercussions for what is taught and learned. *"[There is] a bit of a disconnect between theory and practice in computer science. Theory can be often highly mathematical, not particularly applied, and often may just work on toy examples. Where in practice, it's not the theoretically beautiful concept that dominates, but some ad hoc development from industry ... why is it always that the worst technical solution is the one that dominates in the end? It is sometimes difficult to span from the nice foundational theoretical concepts to what you see in reality ... That's a problem."* One of the curricula problems that this gap engenders is the simplification of taught material. *"Often we see in teaching colleagues focus on almost toy examples, and they're over-simplified. We wanted to give students something that's representative for them, of what they can find in real life and jobs out there. That's the kind of state of art that they can work with, and that's what we want to prepare them in, that when you come up with a solution for the real world, these are the kind of challenges. It's not 100 lines of code; it's 100,000 lines of code."* This can also have an impact on the expectation of students. *"I find it incredibly frustrating trying to teach Software Engineering courses when all of my colleagues are almost like drug-pushers. They're pushing this well-defined problem model on the students for assessment so that when I try to do an assessment on Software Engineering, that tries to model that real world of ill-defined requirements, they hate it because they don't get it. 'Just tell us what you want to build.'" The risk of narrowing the curriculum in this way is that the divide between academic and industrial practice grows ever wider. *"It can operate in the way that I was taught French; it was structurally correct but it was very formal and it was very antiquated and it didn't relate to how anybody in France spoke French. And I think we're in danger of doing that at times."**

The issue of academic material being a shadow of industrial practice is not only experienced in relation to taught content. It is also a challenge in giving students an accurate perspective of what is involved in a particular professional role. *"I would like to come in on a point you made about the gap between theory and practice, which I feel is very acute for information systems. So the very best of our graduates in information systems go to work in companies like Deloitte and Cap Gemini as Business Analysts – and they work as the glue between the technologists and the business people working, mentoring dialogues, introducing solutions and making sure the implementations are carried out in such a way that the business sees immediate benefit. That's a very dynamic and a very interesting place to be in a business, as it's incredibly difficult to replicate that in a classroom through case studies and so on. It's really hard to give students a sense of what the role really means. That's tricky because it can seem very dry and very abstract. Then students can come back and say, 'Yes, I recognise what you were doing and how that helped, but at the time I didn't realise it was going to be like that, and I didn't realise what things were*

*important about the exercises we're doing.' So there's a real gap there I think between how we deliver what I do in class and how it's delivered in industry and for what I think of as quite a vocational subject. That's quite problematic."*

**University resourcing** In many institutions, the fact that computing needs more provision than standard PCs and normal seminar rooms is a problematic limitation. *"The other one that I do find a constant frustration, and it's not just myself, it's my colleagues, is our institutional resources for submission of code-based projects and how we manage it in and out ... we're looking at trialling GitHub over the summer as a way of moving outside of Turnitin and Blackboard as a way of submitting code-based projects. But that's the biggest resource gripe we have. Blackboard, really, we crash it every time we have a big submission. We end up with students who struggle with it in the process. It's not attuned to computer science ... We're looking at maintaining our own GitHub. And then we can connect that to the Blackboard process and they can submit a final version with a submit token that becomes the one we mark."*

Resourcing affects the curriculum not only in matters of delivery but also in the limits it places on what can be taught – and especially what can be taught with “industry-strength” tools. *"My personal experiences with my university is that we would deal with resourcing issues by avoiding anything that has to do with paying for software. We go for open free software, GNU licence or whatever, and it's so much so that we don't even think twice. If you say there's paid software, forget it. We don't use that. We don't have a budget for that. That's the bottom line. So we already embed in any list of requirements free or unpaid for software licence. The best stuff you have to pay for. It's as simple as that. So you can't get access to industry grade software or case studies or whatever without coughing up the dough."* Some institutions do invest in some software infrastructure. *"So we spent a lot of money of software licences, a huge amount. And particularly things like Adobe Creative Suite for the digital media students. So you can look at subject groups and think, 'Ooh, this is more expensive to teach than this is.' You're just on a continual cycle of spend with some of those products, but the students have to use them or they're not employable."* But often institutional investment of this nature is selective. *"[In Computer Science] It's Eclipse, Java, Python and the likes of that. MySQL – not Oracle. Even though the industrialists come and say, 'They have to know how to use Oracle.' No they don't. And we won't buy a licence with Oracle because it's £10,000 a year. It would be great to offer Oracle accreditation, Microsoft.net accreditation and things like that, but no, it's not going to happen. It's too expensive."*

Just as there is a gap in student perception between the apps on their phone and the things they learn in their first programming course, so there is a similar mismatch in the resourcing of computing and other disciplines. *"I think this is our own success; computing has become so pervasive and so useful for all walks of life that it's no longer our domain. The use of the "domain" there is very ironic, because I bet you everyone's email address has changed here over past five years. You used to have your department perhaps as part of your email address: it's gone. Now it's university-wide. It's indicative of how things are being devolved to a central power. And your personal web pages, they disappeared behind a firewall. I suppose it's protecting your resources against attacks and so on, I understand that perspective. But it makes the life of anyone who's trying to program with sockets and ports impossible. It's that simple. It's quite a simple issue."*

**What employers want** Most departments have a very partial view of what employers want from computing graduates. Some closely follow expressed needs of companies that take placement students. *"The problem with that is that a lot of our placement companies actually specify they want Java, junior Java software developers or something like that, they do specify things ... we're finding in the last year an awful lot of employers are coming and saying, 'We want people who can work in .NET and specifically C#.'" Other institutions take different approach to the employer-University relationship. "We're trying to educate employers about what they can expect from a*



*second year student, a third year student, and not to set expectations that they're going to be excellent in research or they're going to be – seven essential skills and six desirable skills was the one job specification that I remember very clearly for student placement, being paid £1,000 a month.” Many departments constitute an Industrial Advisory Panel. “We have an industrial advisory board. They do have an input into the curriculum, in the sense that we talk to them about our curriculum. But it's dangerous to have employers define your curriculum, because what they define is their current problems, and their current technologies. And that can be quite hard. Some don't. Some have been around long enough to see it in a different way.”*

Some departments see their job as producing skilled graduates, but recognising that they may not be immediately appealing. *“The biggest challenge is making sure that employers realise that it's their responsibility to turn graduates into employees and not ours ... We're not here to train their staff. We're not a training school and we make sure that our students have a very broad set of skills, not specific technologies that the particular company makes use of.”* Some question the way employers express their needs. *“One of the challenges is that [flexibility] is not necessarily what employers want to see when they've just hired one of [our] graduates ... It's not what they tell us they want. Which isn't necessarily what they actually want.”* However, there are few forums for productive dialogue to emerge. *“The employer voice is very important but sometimes that voice is articulated in such a way it becomes a bashing of the schools ... rather than an ally. So we always hear about employer expectations and employer narratives, about what they want, and often it's not really what they want, but that's what they say. Maybe if we can foster a more progressive relationship where employers are helping us articulate our concerns to funders and universities about the subject and build them as allies, rather than somebody who's criticising our output and saying we should do better, then I think that would be very constructive to build a more useful relationship with industry as partners to make sure the people are properly resourced in computing in universities.”*

**Educating for the long-term** Recognising the rate of change in the discipline, a commonly-expressed position is that a degree educates graduate for long-term success. *“This question is similar in [my institution] is this question of long term employability, not just teaching the skills that will get you the first job, but the skills that will allow you to relearn all the material that you will need for the next 20 or 30 years.”* Some departments challenge short-term employer expectations. *“Actually I was just having a conversation with employers ... and we got into that conversation about, ‘We want Java programmers. I want 10 people who can write me Java programs tomorrow.’ And I said ‘but surely I should be producing people who can program and you then allow them to become Java programmers and then in five years’ time, when Java's gone the way that C has now gone, they can be something else. Otherwise what do those people do who I've just turned out to be Java programmers?’”*

**Educating for a range of roles** As there is little role differentiation in the computing industry (unlike, for example, medicine, where education for nurses is different to that for surgeons or paramedics) a computing degree has to cater for all (or most) jobs. *“It's getting harder and harder to fit in all the stuff that employers expect a graduate to have in their skillset. Anything from team ability, team skills to communication skills – the soft skills – down to what language can you programme fluently? To things like security and system design, information management, it's becoming very, very hard to create a round profile of a computer scientist or an informatics person. Because we're now working in so many walks of life.”* Sometimes the fact of the breadth of role expectation for computing graduates is not appreciated by employers. *“We tried to get some industry input by having industrialists coming to speak to our students and that is awful at times. Because someone comes from the oil and gas industry and says, ‘We expect all the graduates to know all this,’ and I'm going like, ‘No, no, no, no. Right, we have a problem here. Please don't do this again.’ But that comes with expectations of the employers and they expect graduates to be able to*

*produce from day one, which is not realistic. We're not training their graduates; we're training people for all walks, for all things that relate to computing."* Sometimes the demands may be irreconcilable. *"We're trying to do the degree apprenticeships in IT at the minute, and when you talk to employers about that, you've got some employers that are almost the big back end office people, and they want quite traditional computing in the courses. Then you have all these small start-ups and they want much more agile type of computing. When you look at that range of roles, you're absolutely right; trying to get a graduate that can somehow do all of those things is quite a challenge."*

**Confidence** is seen to be a key component for employability. Some speculate that it is a particular challenge for computing students. *"Yes. I suspect that computing attracts a much larger proportion, of that group, who haven't necessarily got the confidence and those other skills that are required, for employability. That's the nature of it, but the potential is there with pretty much all of them."* Whilst "confidence" it is not subject matter that is directly taught, it is something that many institutions recognise as important and address through curricular (or extra curricula) interventions. These take two general approaches:

**1 Authentic mastery** Institutions work to give students experience of success. Sometimes this takes the form of coaching. *"But also talking up the people who think that they're unemployable, who don't realise that they've got some of the skills that they have got, those softer skills. And there's some work going to bring those further into the curriculum, but realistically it's about that one-to-one help."* Sometimes it take the form of practice in ways of presenting themselves. *"We are getting students who may not be able to write properly or speak properly or present themselves properly in an interview and so on. We need to give them some training outside the curriculum to prepare them or to better prepare them for the workplace and also to tell them more about what they should expect once they are there."* Sometimes these sorts of interventions are very specifically targeted. *"There's also a section on confidence-building. We found, the last couple of years, an awful lot of companies are using competency-based tests ... the STAR-type approach. A lot of students were ill-prepared for that, so a big focus on that."* Some departments don't provide these additional resources within-house, but negotiate externally. *"One thing that [the company] came and said to us, 'Your students lack confidence'. When I asked them ... a simple question like, 'What's your area or specialism?' A student's typical answer was, 'I'm not sure. I don't think I know'. They're not very confident. ... I thought, 'Well, can you help us?' They said, 'Yes. Well, let's go into partnership'. Now what they have done is they come on campus and they do a training session for free."*

Rather than explicit intervention, some departments engineer situations that engage students in confident behaviours. *"[The students said] ... 'we come down to morning tea and the Head of School is there, Professors are there, senior staff are there, post docs are there, people who are visiting are all there, we're all together, there's no walls between us, there's no separation'. So actually by third year, by fourth year, by the time they are actually going out the door, they're actually very used to arguing ... and that's something that gives them the confidence to go and pitch themselves at a much higher level to employers ... that really affects the employability for us."* In some departments confidence emerges from student culture *"Also, because it's a very social department we have a very, very lively social environment. They tend to become really quite self-confident, able to think about new ideas and to come up with their own ideas. For example, we have 15 different societies just in this department."*

Many departments notice that engagement with industry is a source of confidence. *"You know, computing students go in very reluctantly to work in a printing department ... because they think they're just going to be loading printers with paper all day. Then, coming out afterwards, totally enthused and saying, 'I want to work in the printing industry. I didn't realise there were these things*

*happening.' So that level of experience, again, is a great thing. What comes out of that is confidence. Again, as I say, the year after they do their placement, they're the ones taking charge in project groups. They're the ones enthusing and encouraging other students to get with it and so on because they have this level of confidence. When we have employer visits, you know, they're asking, 'Can I go and meet them at reception and bring them to the room?' They can walk in and chat away to them. Things they could never, ever do before. We hear a lot of employers saying, 'If your students actually look us in the eye and smile, we're onto a winner,' kind of thing."*

**2 Social reference** The other source of confidence departments recognise is calibration of students against peers in other institutions. *"Confidence is one that we have picked up on recently. We are noticing an attitude: it is the, 'We are only from [this University], we are not worth it' attitude. Particularly we had some students a couple of years ago who went to GCHQ and said 'They were all from [a Russell Group University] and they were bound to get the job because they were from [the Russell Group University] and we are only from [this University]!' That was the attitude we started to see quite a lot. It puts them off applying. It puts them off trying and stretching themselves at times. We have noticed that a bit."* Comparison with others is a common problem. *"One of the big things is confidence. What we have noticed is our students are scared of going out for jobs where they don't think they're going to get it ... our students are very worried about going out to a job where they perceive that there will be [an elite University] student applying for it. They think they're not worthy. They think they're not going to be able to get it, so they don't do it. Giving our students the understanding that we have the same accreditation status, ... the same quality of degrees as other institutions, is really hard work. Getting them to understand that confidence – that they can go out and compete against any other graduate – and surely, when they do, they compete very well."* In other departments, where students do not look outside, calibration becomes a different issue. *"What I always say to the students is, 'Don't undersell yourself. You can go for what you think is the best thing and you can get it,' because they are really that good. It's difficult for students, I think, even to be aware of that because they don't necessarily see themselves with other students from other departments. If you've got one whole department where everyone is really quite confident, and they're really smart, and there's lots of things happening all the time, it's difficult to think that you stand out in any way."*

**Institutional bias** There is a perception that employers are biased towards graduates from certain institutions. *"You can build on confidence and giving them that edge, so that when they go out, they stand out. But ultimately, if you're getting nice middle-class boys come in, and nice middle-class boys go out, and they've got good table manners, they go and get a job. It's that sort of thing."*

*"I went to a presentation last year and a computer games company said they only take students from UCL or Cambridge. Whereas, we probably all do computer games related courses, Cambridge, I would imagine, doesn't."*

*"We've got quotes from employers that say things like, 'Well, I just go to UCL and get some students. We just do that every year, and that's what we do.'"*

## Clusters:

**A cluster is a collection of practices that appear in several institutions in different ways. The claim here is not that local settings are similar, but that the same (employability) concerns shape responses that are similar, yet distinctive in context.**

### Employer-led curriculum

In addressing key issues of *what employers want, educating for a range of roles and developing confidence*, some universities are partnering with employers to deliver specialised curriculum. Because of the nature of these examples, we present them as short identified summaries of practice.

One issue for universities is deciding what to include in the core curriculum, in particular how to provide what some employers are asking for in terms of specific skills. One solution is to offer such skills to interested students as an extra curricular activity, with significant employer involvement ensuring relevance and currency.

#### The Agile Accelerator – Aston University

Aston offer the Agile Accelerator as an extra-curricular option. It provides additional training in skills related to agile development and is taught by an ex-lecturer who is now working in the industry. *“He does a lot of agile team development in companies. So he comes in and runs similar sessions to the ones he runs in companies for us.”* The Accelerator is outside the main curriculum and is linked to Aston’s student software company, which works with both SMEs and larger organisations that need agile development skills. This gives it a certain level of exclusivity. *“It’s a bit of, ‘Well, you’re the elite group’, and there’s a bit of cachet attached to it but it’s something additional to the curriculum and that, I think, makes it quite attractive.”*

Another issue is that traditional Computer Science courses may not prepare students for the wide range of roles they may end up filling, including small business start up. Many students will have limited understanding of business, how it works, what are its priorities and, ultimately, how to commercialise technological developments. Filling this gap in their business contextual knowledge gives students more confidence in interviews with large organisations, as well as preparing them to create their own start up if that is their choice. Partnering with employers to offer an authentic framework for and experience of business innovation complements the technical curriculum of the Department.

#### Business Innovation for Digital Technologies – University of York

Business Innovation for Digital Technologies is a new extra-curricula course designed and run by Dr Dick Whittington, Founder and Chief Strategy Officer of Mood International, and Visiting Professor at the University of York. It is currently offered twice a year, with each session targeting a specific cohort of students:

- Undergraduates, initially from Computer Science, although from 2016 the course will be extended also to students from Electronics and Theatre Film and Television (TFTV). This session is offered in the summer term, at the end of the academic session.
- Research students and research staff from Computer Science, Electronics and TFTV. This session is offered prior to the start of the autumn term.

The course's objectives are to introduce students to business innovation and teach them how to take a technology idea to market. It also aims to encourage students to think about their own ambitions and future possibilities beyond working for a large employer and to enhance their employability by giving them a better understanding of how businesses work.

The course runs as an intensive fortnight. In the first week, the programme is a mix of lectures on the processes of business innovation, talks from guest speakers, all of whom have experience of setting up technology companies, and practical scenarios to work on in teams. In the second week, students work on a team project where they identify a technology idea and develop a business model for it, culminating in a Dragon's Den style presentation to industry experts with a cash prize for the winning team.

The first iteration of the course ran successfully in June. Students participating developed a better understanding of how start-ups work and reported feeling better prepared for pursuing their own business ideas in the technology area. *"I know what to actually do to form a startup. What qualities are needed. How to develop a business plan."* *"I now understand the planning steps needed to make it work and the existing legal and financial structures. The visiting speakers motivated me and made me believe it is possible."*

Another model is to embed partnership with employers within the entire curriculum.

#### **National Software Academy – Cardiff University**

Cardiff University is partnering with the Welsh Government and the Alacrity foundation (a start-up incubator) to offer a BSc in Applied Software Engineering, where teaching involves both academics and industrial partners. The National Software Academy ran a successful pilot this year and starts the full BSc in September. *"It's very focused around teamwork, group work, start-up type atmosphere, getting students to learn not just from lecturers but also getting instructors in from industry."*

### **Industry-focused projects**

One way in which Departments address the key issue of "toy problems" is through incorporating focused, often large-scale projects into the curriculum. Many of these have an industry client who sets the scope of the project. Sometimes this involvement is limited to the company setting the topic. *"We've introduced recently something called live projects. We're getting companies in and they give a live brief for our students. So our students are split into groups, they get professional development, and they tackle a live project. That might be developing a database, a webpage. So not enormous projects but something that's useful to the company and that gives the students experience of working with a client."* Sometimes the company can be more closely involved, visiting more than once, or sending personnel to assess progress. *"All our students do an integrated project the first year, second year, and third year. The company came in and supplied the spec. They also brought in some of their engineers at certain points of the project in order to speak to students and give students some advice about how to use tools and how to present the analysis and the design of their project."*

Some of these projects are large-scale, giving students the opportunity to bring together and apply their learning from other modules. *"So this project covers knowledge across the different modules and assessments and also integrated. So in that way, the students can see the links between the different modules, why we study what we study and also they get the skills in team working, leadership skills. Something that they will keep when they go in the second year and start applying for placements."*

Such projects are seen as a way of giving students authentic experience that they can discuss at interview, whether for a placement or a job. *“Ideally the projects they do in the second year and their final year project, I expect are the things that they would talk a lot about at the interviews. So doing a good job here, and this is where the relevance or the up to date-ness of the approaches and the methodologies we use I think is highly important. If they can use some words on their CV which employers recognise as being relevant and current, you'd think that would be very helpful.”*

As well as being large-scale and industry-based, some go further by trying to simulate something of the ‘messiness’ of real world projects. In some departments this is simulated by the way the project is run. *“We have a module called ‘Two Projects!’ It's in the second year, so it's the year before they go out onto their placement. They work in a team and they get set big computational tasks and they have to act as a team in a company, solving a software engineering problem. It applies to all of our students, from the solid – what I call – proper, hard-core computer scientists, all the way across the soft computing management and IT&B degrees. They're all mixed together in teams and the lecturer who runs this, plays tricks on them through the year. He does things like ignore them. If they send a questionnaire to try and determine the requirements, he just doesn't fill it in because that's what would happen in real life.”* In other departments “real” problems of project work are included in the way the project is structured. *“We do a second-year group project as well. We recently changed it. It used to be a purely design project and students would spend two semesters working on designing a project and then they'd present the final design and specification for the client. That would be that. We then changed it to be half design and half implementation, where they work on a project. 50% of the time they're doing design and then the second semester they're doing implementation, but there's a twist, which is that they don't implement their design, they implement somebody else's design. They have to create a design that is then able to be taken on by another team, which is interesting.”*



# Placements

## Prologue

For most computing departments, engagement with employability means the organisation and operation of a placement programme, whereby students suspend their studies and spend a period working full-time with an employer. The most common form of placement is the one-year “sandwich”, taken between the penultimate and final year of study.

In computing essentially 100% of placement opportunities are paid, and as most Universities charge a small proportion of fees for the placement year, students on placement can expect to graduate with less debt. Placement programmes are also popular with institutions as the employment prospects of students on degrees with a “year in industry” are far better than for students on other courses, even those offered from the same department.

There are, however, considerable overheads in organising and provisioning placements, in engaging and supporting students through the process, and in maintaining links with employers year-on-year. While placement is a very common form of employability provision, practice across the sector is diverse.



## The one who is left behind: The Challenge of Reaching Tipping Point

And we have reached what we call this Tipping Point. So most students expect to do it and their friendship groups [do]; they don't want to be the one who is left behind having to graduate that year. They want to join their group. So it's an extra incentive for them.

### Key issues

**Institutional stance** A year-long industrial placement is still considered to be a cornerstone of enhancing computing graduate employability, the best way for students to gain essential work experience. *"It's important because our essential approach to employability, which has been there for ever, I reckon around 40 years maybe, is to say that every student going through our computing course must do a one-year placement. Way back, 40 years ago, that was all that was talked about in relation to employability. 'Just you go out there, take a year out, find out what's happening in the real world...'. Since then it's all become bigger and bigger and bigger. But it's still built around this one-year placement essentially."*

Placement is seen as important almost universally across the sector, not only in the Departments that place a majority of their students, but also where numbers going out on placement are lower. Wherever a placement scheme is in place, a universal marker for success is how many students take up the opportunity, and reaching the Tipping Point, where more students go on placement than do not, is aspirational. *"Placement is important. We've got a year-long placement programme. We've got 44 students out this year. We've not been reached Tipping Point yet. We'd love to reach Tipping Point."*

Where Tipping Point is achieved, placement is part of the fabric of the Department. *"You should cut anybody in half here, and it should say 'Placement' written through them, because that's what it is. That's what it's really about."* In some universities, institutional priorities support the Departmental commitment to placement. *"Every programme in the university – I think the latest notice says, '99% of programmes have the option of doing a placement year in the year before their final year.'"*

On the other hand, take up of placement can be negatively impacted by Departmental and Institutional decisions. Removing credit from the placement, so that it no longer has an effect on degree classification, is viewed by many as such a disadvantageous decision. *"My gut feeling, very strongly, is that this was one of the things that resulted in a decline in the number of students who have taken placements."* There is a perception that the choice to remove credit devalues the placement in the eyes of the student. *"I think that has had an effect, a negative effect, on the number of students who've taken placement, because now, apart from, brackets "Sandwich," on their certificate, they don't actually see any other immediate benefit from it."*

**Resourcing** Resourcing placement activity is not a trivial issue, particularly as student numbers grow. *"As ... the numbers [who] want to do placement years and other experiences go up, all of these activities are quite resource intensive."* Support provided for placements varies significantly between institutions, from multiple, dedicated staff in a local placement team to a fractional part of a single academic's workload. Focusing placement activity with an individual is seen as a vulnerability by some. *"Suppose, God forbid, John is struck by lightning tomorrow and can never*

*work again. I am being facetious but we have got to find those projects from somewhere.” For some, providing support is a distributed responsibility across the institution and beyond. “Shared responsibilities, so it’s the department, the careers office, the placement team and, I guess, the student as well. It’s around all of those and, I guess, the employers as well, it’s a shared responsibility for making this work.”*

Having the right individuals in dedicated support roles is critical but again, a potential vulnerability. *“We have a dedicated computing person [in the] career service and she’s been actually wonderful. And she’s about to leave us and it’s an absolute disaster. So we’re going to have to start again.”* Sometimes this happens below the radar, due to the initiative of individuals, which can also leave a Department exposed. *“We had one administrator who was particularly pro-active, who then left. And nobody realised how pro-active they’d been and it all, kind of, collapsed a bit.”*

A commitment to resourcing dedicated, individual support is common to all Departments where the Tipping Point has been achieved. It demonstrably has a positive impact on the numbers of students taking up placements. *“... [in this particular school] it was part of somebody’s role. They went on maternity leave. So one day a week I went over to that department ... purely to work with their students on placements. Their numbers tripled for the two years that I was there. When I left, they went back down again. So, to us, it really is about that one-to-one, individual help [and] guidance, career guidance.”*

The significance of appropriate resourcing was not missed by those who do not have it. *“Where people were getting real engagement was where there was resource. I am talking here about resource in terms of faculty member’s time to be actively promoting the activities. Or if they didn’t have lecturers doing that work they had perhaps an administrator or a member of the school a significant part of whose job was to promote the employability agenda amongst the students.”*

**Provisioning** Reaching Tipping Point for some institutions means finding several hundred suitable opportunities each year: this can be difficult for a variety of reasons. For some, particularly smaller institutions, the issue is one of profile and visibility – they have students wanting placements but employers are less aware of what they can offer and they don’t have the capability to develop effective connections. *“We have got students that want to do placements. It is very difficult for us to resource that ourselves. ... What would particularly help in organising placements is just raising awareness [of our institution].”*

The time involved in developing relationships with potential employers with placement opportunities is significant, and can be challenging. *“We had a day there and we talked a lot. And the end result was, well, they might be able to get us two or three placements... that’s not scalable. Right? If you’ve got 120 students, we can’t do 60 days a year running around after possible placement places.”* This is particularly the case where finding placements is done by an individual academic alongside their normal workload. *“It took me the equivalent of a module’s worth of effort making sure I had 15 or 16, a menu of 15 or 16 companies. I did that through networking, contacts, chambers of commerce, chasing up emails, phoning people. People would recommend if they had a personal contact. That was to recruit the placement provider – it was a lot of effort. It was essentially cold calling and networking. You had to be proactive and do that.”*

Some departments have dedicated staff doing business liaison, who may work with placement staff to develop business contacts. *“We do have a department business lead, who does similar work to myself; in that he’s regularly speaking to external companies. There are times when myself and him will go out, to talk to a particular employer, because he’s looking to sell the CPD involvement, in projects or time costed projects and things like that, whereas, I’m looking from the employability point of view.”*

Other contacts are managed organically by the individuals who have personal connections with the companies. *“People, for good reasons, are quite protective over those leads as well, because they’ve developed them; they work well for them. If those companies get too many requests, from different directions, then clearly they might... They won’t be able to cope with that so, in many ways, I leave those individuals to maintain that relationship, with the contact.”*

Location can be critical to the availability of placement opportunities. *“Well, the first thing that we’ve been looking into and growing is our industrial placements. We feel that’s a very important component. We’re very lucky in [this region] because we have a lot of small and medium-sized enterprises, who are quite willing to work with us.”*

Institutions are also looking for appropriate placements, with sufficient technical challenge for their students. *“We are very much focused; there’s got to be sufficient computing content. And the ones where they’re just on a helpdesk... not really quite what we’re after.”* On the other hand some companies, particularly smaller ones, may have unrealistic expectations of the skills students may have. *“They’re looking for a particular role to fill; a developer role, a network engineer role, a whatever, and they’ll come in with very specific requirements; quite often too specific.”*

Unlike many other disciplines, computing placements are universally paid, with very occasional exceptions being made for charities or similar organisations. *“They’re all paid. I wouldn’t advertise an opportunity to them that wasn’t paid, unless it was for a voluntary organisation.”* This can also make it harder to find placements, particularly with less established companies. *“We have had employers who say, ‘Well, we can’t pay’. ... Because they’re entrepreneurs and they’ve just started their business and they are trying to find their feet.”* Such unpaid opportunities are almost always filtered out. *“I’m simply not passing those on to students actually. I think, if you’re working in the bloody city, [you] can afford to pay people to do it.”*

Timing can be important with some Departments encouraging students and employers to develop a relationship as early as possible in the student’s university career. This can be supported through visits and informal contact. *“We organise visits to companies ... from year one. It gives students the opportunity to see companies, work and see the kinds of jobs that are out there. [They] get to talk to the people in the companies and find out what’s important for them when they hire, and what kinds of jobs and placement opportunities [they] provide.”* In other departments more formal arrangements are being brokered that allow an employer to sponsor a student from very early in their university career, right through to graduation. *“A recent initiative that’s helping is a growing use of scholarships. That is, essentially, funding – not very much funding – from employers to take on students at the end of year one and guarantee them a placement in year three and possibly a job at the end of all of that if it works out.”*

Where Departments have sufficient placements for all their students, they are usually offering a wide range of opportunities and have developed sustainable relationships with employers. *“We have no problem finding jobs. Whether they’re SME, local companies, or placement with the big multinationals. We also use alumni to grow placements in Silicon Valley and we do an exchange with ... the University of Hong Kong. So there is never really a problem finding the jobs.”*

**Virtuous Cycle** Once a relationship is established it is often sustained by the qualities of the students themselves. *“The employers tend to come back and say, ‘Yes, yes, we want some more placement students from you.’”* Many employers work repeatedly with a few institutions, where they have established a successful relationship. *“We’ve got some employers who are happy, and because we make it simple and, effectively, quite cheap for them to recruit, they’re happy just to keep coming back to us, purely to us. It’s not just local companies either; we’ve got companies who are quite far afield, who keep coming back to us, as well, which is interesting.”* In other cases, the cycle is initiated by exposure to students. *“Quite often a student will go and work for a company*

*that I've never heard of before and then the company will come and approach me and say, 'We've just had this student. They were really great. We would actually like to employ some more of your students.' I think it's a very healthy process in the sense that one thing always leads to another."*

In many cases the commitment from employers goes beyond the straightforward desire to get the job done. *"Lots of our employers are recurrent employers, and believe in placement. They've either done it themselves, or they've had placement students for years. So they're entirely bought into it being a development opportunity, as well as them getting something in terms of work."*

Alumni can also help in generating placements. Departments that maintain a relationship with graduates after university can reap the benefits of additional placement opportunities, once these alumni are in hiring positions. *"It's keeping in touch with people. We've got an example where one placement student over the course of three years [has] generated thirteen subsequent placements."*

**Motivating applications** For some institutions the issue is less about availability of placements and more about motivating students to apply. *"I could probably triple the number of students I have on placement, if I can encourage more students to apply."* These Departments acknowledge that while placement is *"still enormously significant for us... it's become much less significant for students"*. Although many institutions work hard to demonstrate the value of placement to their students, often students still see it as *"a waste of a year"*, saying they don't want to take a year-long placement because *"it's going to make their degree another year longer."*

Another perception – or more likely misconception – among some students is that the placement is an unnecessary distraction from focusing on getting a good degree. *"I had this conversation where a student said to me, 'Well, I'm not going to do a placement anymore, because I'm going to get a first, and therefore I'll get a job regardless.'"*

The time and effort involved for students in making applications can be another disincentive, which can be exacerbated by unrealistic expectations from employers. *"We had one student who did twelve interviews, two assessment centres, goodness how many psychometric [maths] tests to get a placement. And they just can't cope with that alongside their normal sort of student work."*

**Overcoming student reluctance** Sometimes students simply do not want to go on placement. This is rarely about ability but can be motivated by a range of personal and pragmatic considerations.

- **Being with friends** Until Tipping Point is reached the norm is not to do placement so students tend to want to stay with their peer group. *"One of the major reasons that students don't do it is they actually want to graduate with their friends."*
- **Timeliness** Sometimes the timing is problematic – often students need to find accommodation for the following year many months in advance and this influences where or if they will go on placement. *"If a student has committed him or herself to a rental arrangement, it's almost certain that they are then not going to start to look for a placement, unless it just happens to be one that they can still reach from that house."*
- **Family and caring responsibilities** Others need to live at home and therefore will not leave the local area. *"We advise in that, 'Your best chance [of getting a placement] is to be as open as possible.' A number of students will say, 'I want to stay in the [local] area, for family.'"*
- **Work** Some students have well-established part-time jobs, which *"they see ... as being more important for when they come back, in order to steer themselves through the [final] year"*. They are therefore unwilling to relinquish this advantage in order to take up a one-year placement.

- **Local area** Once they have settled at University, students are often reluctant to re-cast their life to include travel or relocation. *“Many of the students would tell me straight to my face that if it meant travelling to Manchester, if it meant travelling to Birmingham, ‘I am not interested.’”* This can be the case even where the distances are relatively small. *“I will tell you now, many of our existing ones won’t want to be commuting substantial distances. [One company] has an IT section ... it is about three or four miles outside [our local] conurbation, which is not a big city. The students didn’t want to go there because of the commute.”* Even when the prospect of commuting does not dissuade students, the actuality can sometimes be problematic. *“Three days in [the placement tutor] said, ‘They’ve told me they’re going to quit, because it’s too hard to get there.’ [The place] they were working is 45 minutes each way on the bus. And I kind of said, ‘Do they not understand that a 45-minute commute is pretty low, around London?’ And so, we were very harsh with them, and they stayed. And of course, a month in, you’re used to getting up, and you’re used to getting on the bus, and you know, it’s fine.”*
- **Financial considerations** The fact that students are building up debts for tuition fees has created a perception among some students that they will be financially better off finishing their degree as soon as possible, rather than doing a placement, even if it is well paid. This is in spite of most universities charging a substantially reduced fee for placement years or, in some cases, no fee at all. *“Students see it as another year when they’re not earning. Of course they are earning. We don’t have a non-paid placement, they’re all paid in Computer Science and Information Systems. But when they come in, they’re thinking of it, ‘How can I get out as quickly as possible, to then start paying down my debt?’... It’s a minimal charge [for the placement year] ... and my recollection is that the average [placement] salary is £16,000-£17,000 a year.”*

**Preparedness** For some students, placement is simply too daunting a prospect. They are settled in the university context and unwilling to change. *“It’s very much around their context, I think, and the sense that they are happy at university and they’ve found their feet, they’re at the end of second year, things are good for them. Why would they want to disrupt it?”* Others may lack confidence in their work and not feel ready for the opportunities available or for making their work available for scrutiny. *“I’m not ready for it yet. I’m not confident. And my portfolios are not ready to show people.”*

However for some students, the issue is lack of engagement at any level. *“The students who don’t get placed? It’s usually either because they haven’t engaged with the placement office. Maybe they’re not engaging with many people at all. And that’s a problem we do have.”*

**Calibrating student expectation** Some students are unrealistic about what they can expect from going on placement. In many institutions getting a placement is a competitive process, where success cannot be guaranteed. *“We can’t guarantee students to go on placements. I know some institutions do, and so they find students placements within the university. We don’t do that, so it is a competitive process. Those students have to be selected by the company, so some, as happens in real life, don’t ... get a placement.”* This is exacerbated when students have narrow expectation and are only interested in working for certain high profile companies. *“A lot of students, when they come in to do a placement, they want to work with the big companies; they talk about IBM, AstraZenica. I think we’ve placed one student this year at AstraZenica ... it’s not where we’re placing students. Our focus is on trying to change the perception of students to work in SMEs, because that’s where we’re getting most of our students placed.”* Part of the work of placement coordinators is calibration of expectation. *“It’s the guys ... who want to work for, ‘Yes, Google or Facebook please.’ And it’s like, ‘Okay. Maybe we need to get plan B, or get some skills that Google would actually want, and getting a strategy for doing that.”*

**Balancing reputational risk and the needs of students** Placement students go out into companies as representatives of the university therefore may place the reputation of the institution at risk if not successful. *“The weaker students don’t get to do them because there’s a perceived reputational risk.”* Some institutions manage this by limiting the students who are allowed to go on placement. *“We have 65% of our eligible students going out on placement. That’s not quite the same as 65% of all of our students. We do restrict students and it is that, ‘How do they represent the institution? How do they portray us with the employers that we’ve built up reputations with?’”* Some work to select students to send on placement. *“We keep an eye on the students going through the different modules and then we try to hijack those, hand pick them.”* Others require students to have attained a minimum level before they can apply. *“It’s not automatic in my university. They have to have a minimum performance level.”* This protects the university but can leave some students out in the cold. *“In terms of undergraduate placements ... it’s the stronger half, probably, of a class who apply for the placements. So what happens with the weaker ones?”*

The weaker students can be ones who benefit most from placement opportunities. *“We do have students who go on placement who are academically weak. They may struggle, whatever. But [they] always come back stronger as a result of it.”* Individual support in selecting the right placements for weaker students is important. *“It’s the students who are trying and working hard, but are only getting 2:2 level performance. So they’re going to find it more difficult, certainly the blue chips are not going to look at them and maybe they’re not so good at interacting with other people and the other skills they need. Those are the ones where, actually, we can do the most, probably and the question then is, ‘What is the right thing to do with that sort of particular slice of students to help them get where they want to be?’”*

Many institutions recognise issues with weaker students. *“[There’s a problem of] how we get that bottom whatever – 10%, 15%, 20% – of people to engage, to take advantage of the opportunities that are around them, and to realise that, you know, they have a real responsibility for it.”* In some departments special internal initiatives are used to give these students more opportunity. *“You know, those that are at the top end are always going to get jobs anyway, and we need to focus on students at the lower end. We now have a unit for our least technical course, where students have to organise actual project management events.”* Such initiatives do not succeed everywhere. *“But the students who, not to put it in a pejorative sense, but the tail of the student body, we haven’t seen more engagement, we haven’t seen better engagement, despite our best efforts.”*

Employers do sometimes take weaker students, perhaps out of an altruistic recognition that placement is a development opportunity for the student or perhaps simply because the student has enthusiasm. *“So there’s something, I don’t know whether some employers actually see that as – not a duty, quite, but as an opportunity for development in someone. So they’re not just always taking the strongest students. You know, inside the minds of employers is quite a difficult place to be. But it seems to me that sometimes weaker students get placements ... academically weaker, but enthusiastic.”*

## Cluster: Practices across the placement lifecycle

**A cluster is a collection of practices that appear in several institutions in different ways. The claim here is not that local settings are the same, but that the same (employability) concerns shape responses that are similar, yet distinctive in context.**

As placements are so important in the sector, they are a substantial focus where practice varies between institutions. We have grouped these practices into a series of clusters across the placement lifecycle, from **preparation** to **application** then in regard to **monitoring** students while away from the University, helping to smooth their **return**, and in how placements are **assessed**.

### Preparation for placement

**Awareness** Preparation for placement starts with awareness. If students are not aware of the opportunity or benefit, they cannot access it. *“We have employability built into the curriculum and it’s part of one of the core modules in their second year. So ideally it’s preparation for them going out on the placement itself. But students just seem to want to get the degree and get out the other end and then get a job.”*

Many institutions use students returning from placement to share experience with students who are yet to embark on it. *“We have students who are on placement coming back and talking about their placements.”* Some departments use alumni in this way. *“It’s quite important, as well, that we get former students to come in and talk about what they’re currently doing or what they’ve been doing over the past few years since they’ve graduated. So that helps a lot in trying to motivate students to apply for placements and think about graduate employment opportunities.”*

**Confidence to apply** Early preparation is important to get students into a position to make applications, otherwise they may miss our opportunities. *“The person spec says, ‘We need ten things.’ The student goes, ‘I’ve only got three of them, I’m not applying.’ If you actually speak to the company, they say ‘You know, we’ll have a chat with the person that’s got three of them,’ but the students don’t have the confidence to put that together. So we need to do something to bridge that gap.”* Other students may be dissuaded by poor social reference. (See Confidence, p39) *“What we have noticed is our students are scared of going out for jobs where they don’t think they’re going to get it. Our students are very worried about going out to a job where they perceive that there will be a [Russell Group] student applying for it. They think they’re not worthy. They think they’re not going to be able to get it, so they don’t do it.”*

**Understanding the territory** Several institutions work to ensure that students are primed to know the employment options well before they are looking for placements. *“We run a number of networking events, trying to get the students finding out more about the kind of roles that are available to them, kind of industry, meeting industry experts and things like that. The students get a chance to meet somebody who’s working in the software development industry and talk to them and get ideas.”* In some departments, this extends to students presenting themselves as professionals. *“The digital media students will set up their own online portfolio. This isn’t a university platform, this is a published website, just as professionals in the industry will have to display their work. So right from the beginning we try to get students to think about that, to prepare to become professionals.”*

**CVs** Considerable emphasis is placed on students having appropriate documentary preparation, which commonly focusses around CVs. Some institutions ask people other than academic staff to vet them. Sometimes employers come onto campus. *“[At Industry Weekend] their CVs are criticised by people that may be listened to more than they do to their lecturers. They’re going to get some real feedback, and hopefully that’ll improve their CVs and then get them an industrial year placement.”* Sometimes students and employers meet at residential events. *“We have a second year*

trip away. We take them away and they have mock interviews, they prepare CVs, we get real employers in to give them a grilling. Some of them come away in tears, but they hopefully learn something. Some of them come away with jobs as well – industrial year jobs – from that. So we push that.” As it is such a common focus, employer involvement in CVs can become too much for some institutions. *“I think they’ve now banned having CV sessions, because they had so many CV sessions from so many different companies, nobody was turning up.”*

Some departments incorporate placement preparation into the curriculum. *“At Level 2 in the taught programme, there is a credit-rated, non-assessed module, that all our students do, which is a pre-placement module. It’s not assessed, but everybody has to do it. It’s on their timetable, ... where we explain the value of placement. We explain to them about preparation for work, so we do things ranging from CVs, application letters, the context of the industry.”* Some departments additionally emphasise the value of CVs by assessing them. *“In the first year, the students do a module, Communication and Information Skills, and one of the exercises on that is to write a CV which gets assessed.”* (See Compulsion, p23) but others are ambivalent in that regard. *“We used do to marking of CVs until last year, when we decided to actually drop it. For example, we had a student who got a low mark on his CV, but he got a really good job off the back of it.”*

**Soft skills (interviews etc)** As well as being well-presented on paper, students also need practice in personal presentation. *“There’s another challenge in actually allowing them the opportunity to articulate their skills to an employer, and that’s not such an easy thing. So we do activities with our careers centre.”* As well as generic, central support, some departments additionally provide subject-specific preparation. *“I’ve started up in the last couple of years, a technical interview. So the Careers Service do a great job, but it’s very important that they get technical interviews, as well. So we do those in the department.”* Such interview preparation is not to develop generic skills, but to alert students to the type of things that will be asked. *“Because I know from friends who have been out of academia and getting jobs recently, that use of coding interviews is just huge now. And automated online coding practice tests. And I don’t think we’ve ever pointed students at these. Or told them about them.”*

As with CVs, some institutions broker interview opportunities with employers. *“One of the other things we’ve done is that we run a speed-interviewing practice session with employers and students each year. So we get about 30 employers in, 100+ students, and we have 15-minute sessions and they do 10-minute interviews, 5-minute feedback. And it works really well and they cycle round and they get three or four interviews in a night. It’s meant to be a practice. The first time we ever did it, one of the employers came up to me at the end, ‘I want to employ the student I just interviewed.’”* (See Wider Disciplinary Engagement, p12).

**Rehearsing the process** Some institutions engineer situations where students have “dry runs” of making an application. *“In this module the students have to pitch for a project. They have to actually go to a kind of an application process, fill out application forms, write CVs and have interviews. Each student gets an interview from two academics like they’re applying for a job.”* Sometimes the rehearsal opportunities are more fine-grained. *“We have an assessment centre manager on campus, somebody able to give them an experience of an assessment centre. We have banks of technical tests, we’re able to give them a sense of that as well.”*

**Making sure they have material to work with** Departments that emphasise employability often make sure that students are “naturally” in a position to make a good impression. Sometimes this is relatively general support. *“Encouraging students, from a very early stage, just to get involved in stuff; to volunteer, to take part in events. To become actively involved in communities; the sort of thing that will fill the CV with interesting content.”* Sometimes this support is more targeted. *“In the placement interviews, they have to evidence something with an example from their experience. So provide that experience right from year one.”*



## Applying for placement

**Supporting applications** The support given to students in applying for a placement varies widely. At one end, there is nothing. *"We expect students to find their own placements. Certainly find their own employment afterwards, but also their own placements."* In other institutions, placement provision is coordinated centrally. *"So the usual mechanism is we have a central placements office, the central-placement team in the university. So they come and give a talk at the start of the second year, week zero, to the students to say, placements coming up. And they arrange a whole lot of workshops."* As well as the student-facing aspect of this support, when placements are organised centrally so are the relationships with employers.

When placement support is located in the department it is often constituted as part of an academic's job. *"In my own department it's somebody's duty within the department to do that. So, it's a few hours a week."* In some departments this can be quite a loose arrangement. *"I look after all the placements and employability for the placements and undergraduates. So quite a lot. Those last two roles are more, in a way, voluntary."* In some departments, support is literally invisible. *"We had one administrator who was particularly pro-active, who then left. And nobody realised how pro-active they'd been and it all, kind of, collapsed a bit. We send the emails around, generally, of, 'Here's a job.' And remind them that there's a website where they can look for jobs and things. But I think this administrator was targeting individuals saying, 'Here's a placement that would really suit you.' And, you know, 'Come and show me your CV and let's get your application into this employer or something.' So, chasing the students up and being quite pro-active on that front. So although the students had to get their own job, there was quite a lot of extra support going on."* At the other extreme, a few departments employ dedicated personnel. *"In 2009, after I'd been doing this work for a couple of years, the department actually realised that it was a full-time job. They changed my job and made this my full role, to act as an interface between the companies and the students and the academics."* Sometimes departments employ more than one person to the role. *"All we do (there are two of us) is help those students find placements. We work on a one-to-one basis with them as many times as they want."* In between there are a variety of arrangements. *"[We] bring in some external staff who assist the students in actually securing placements; it's somebody in the faculty who does that across several departments."*

**Brokering and distributing information** Several institutions have mechanisms for organising and distributing information to students. *"There are companies that come to us and say, 'Please can we have some more of your students applying for our jobs? Because they were good last year and we want some more good ones this year.' So, what we do is collect up all these sorts of jobs, stick them on a forum, and the secretary who does all this then emails the students every week to say, 'These jobs are coming up; the closing dates are coming up.' Every week. 'The closing dates are coming up; these are the ones you should apply for this weekend.' The clever thing we've done this year is switch from sending that email on Monday to sending it on Friday."* The presentation and timing of emails is important. *"One thing we found is the whole university careers and employability service has a recruitment site that employers can go on to and register jobs, so it does attract a lot of local companies. But what the employability people were finding is that students were getting just general emails all the time, and they were ignoring it. Whereas when the girl involved phoned me up and said, 'I've got this really good job, and no-one's applying.' I would then send the students out an email and, you know what, they all apply for it."*

**Monitoring applications** Departments need to be sensitive to the student lifecycle, to make sure that applications are made in a timely fashion. *"Once students get busier, on their course, and deadlines appear and things like that, it's easier to put finding a placement to one side."* Knowing these problematic spots, some departments make targeted interventions. *"For some students all they require is, probably, a little bit of motivation. It's just unless somebody's actually putting it in front of them they're not going to think about it. So even an occasional [reminder] encouraging them to think about it could have a big impact for some students."* In several departments these

interventions are not one-shot, not only geared to stimulate the first attempt. *“But what you find is that around January time, December to January, people may have done their first couple of placement applications, may have been unsuccessful, and rather than continuing to engage in that, learn from it and improve, they drop out, and go back into concentrating on their academic study. So that’s where we try to re-engage them. We’re successful with some, and we’re less successful with others. But what we try to do is core reminders about opportunities; statistics and data around, ‘By this time, only this many people have found placements.’ So it’s kind of making them feel as though it’s a normal part of the process.”*

**Automation** Some departments are working to automate the monitoring of applications. *“I was looking at that process and trying to quantify it, and trying to look at what appropriate automated triggers would be. So for example, if you applied and you were unsuccessful, setting a trigger point of two weeks that would automatically mail them with tips on how to improve their CV. So it doesn’t necessarily need the big resource of more people to check things with them, or to interview them, but can be trying to use some simple persuasive technology, persuasive design techniques, to keep them engaged.”* Several institutions have online systems (either externally provided, or home-grown) that manage and monitor the entire placement process. *“So effectively, for any job, whether it’s a full-year placement or shorter term work experience, it all goes through the same system. Employers register with it, and they can post the type of job that they’re interested in, all the usual details associated with that. And then the students can apply as appropriate. Well, it’s monitoring what’s going on, so you can actually see the number of applications, you can see who has applied.”* Sometimes information from automatic monitoring can be disappointing. *“We have on our Intranet a part of our sort of virtual learning Intranet we have a dedicated section that is for careers and job opportunities. We regularly send stuff, often by recruitment agencies, sometimes by companies, career opportunities. All sorts of stuff goes onto that Intranet service. We know because we monitor it, it gets almost no footfall from the students. Virtually none.”*

Some departments integrate online systems with face-to-face interventions to ensure students are engaging with placement application. *“So, we have these external recruiters who provide lists of placements and so on that get sent out to students. But in order for students to receive that they have to have met with their personal tutor and got their CV up and running and got the covering letter and stuff. And they have to meet with their personal tutor towards the end of the first semester before Christmas. So, it’s almost like a signing on session at the job centre where they have to say, you know, ‘These are the placements I’m applying for. This is my CV. This is my covering letter. This is what I’ve been doing.’ And if they aren’t engaging with that then it’s then that we start to say, ‘Okay, you need to be doing more if you do really want a placement.’ And then following that, once they’ve had that, they get the one-on-one advice from the consultants to help them further, if they still haven’t found a placement after we get back after Christmas.”*

**Failure and resilience** It is universally acknowledged that not every student is successful at getting a placement, and Departments have ways of supporting them in that. *“The students who don’t get placed, it’s usually either because they haven’t engaged with the placement office. Maybe they’re not engaging with many people at all. And that’s a problem we do have. Or they haven’t survived the first rejection. And we work very hard [at getting] them through it.”* Some departments help students to look on the first failure as useful experience. *“If they’re applying for placements in their second year and they’re not successful – it does happen – by the time they get to the third year, they’ve actually been through that process. They stand a much higher chance in their final year, rather than just coming into applying for jobs, new, in their final year.”* Other departments help students to look at opportunities they may not have otherwise considered. *“Picking them up after they’ve had that first failed interview where they’ve had a rejection from Facebook or Microsoft, or whoever it might be who’s their aspirational job. And actually saying, ‘But you can get these same skills from an SME’, or ‘You can get these same skills somewhere else, doing something else, and then work towards that as a graduate role.”* At best, failure provides motivation and direction for future applications *“I had*

*one this morning. A student came in who had done a really, really prestigious internship with a really prestigious company and then said, 'No. Having done that, I'm not sure this is what I want to do. What should I think about in terms of getting [a different] internship next year?'"*

**The enormity and reality** Every Department recognises the physical and mental burden that application places on students. *"The employers these days put the students through horrendous hurdles. You know, we had one student who did twelve interviews, two assessment centres, goodness how many psychometric [maths] tests to get a placement. And they just can't cope with that alongside their normal sort of student work."* Application procedures are often prolonged and make considerable demands. *"We're just very aware that the students do very well in industry, but they find the recruitment episode quite difficult sometimes. It's a bit of a ritual that they have to go through and we want to tell them as much about it and give them as much experience and equip them for it. Some of these, if you look at the graduate application routes for Hewlett Packard and Morgan Stanley, it's quite hard, just even these online forms, technical tests, assessment centres, three interviews ... I wouldn't like to go through it, put it that way. It's quite daunting what some employers do."* Many would like to see a reform in application processes. *"I think it would be helpful is if employers found a way of selecting the graduates they wanted in a somewhat less labour-intensive way. You know, it's just been an arms race. Almost appears to be making it more and more difficult to succeed."*

## Monitoring placement

Once out on placement, a university still has responsibilities to the student. *"Once the student is on some sort of placement, as soon as it becomes a credit bearing part of their programme, the university has a code of practice. We then have a duty of care to the students whilst they are involved in that programme"*. This necessitates maintaining contact, which is usually done through a series of visits. *"There are two visits, and then there's an expectation around contact in between. But there's two visits, unless they're overseas, there are two physical visits from the Placement Tutor."* In addition to the visits, there may also be informal contact. *"They have three visits from a tutor and they also have a relationship with the module administrator. The module administrator isn't just somebody who looks after the spreadsheets. There's a lot of email interaction between the administrator and the student in the run-up to placement, and often then there's almost a kind of rapport that's maintained while they're on placement. An administrator checks in with the students as well, and checks that they're okay."* Although the expectation is usually of multiple visits, the reality can be different, especially where distances are involved. *"I think they are supposed to visit twice a year but I think most people actually go once a year and do the rest by email or Skype or whatever. It depends where they are. And if they're abroad we don't visit them in person either."*

All universities do visits, but who does the visits varies. In the vast majority of cases, academics are responsible, so that the visit can cover technical aspects of the placement. *"We run a process whereby we try to do two visits, to students, on placement and that's from an academic; preferably someone who's related to their course area so will know the approximate skills that are being applied; just because it makes it easier to talk to the supervisor, in that case."*

How monitoring is organised is very different between institutions. In some, one or two individuals do all the visits, sometimes without remission from other duties. *"So, placement visits – it's down to one or two of us to do almost all of them. And it's not really in our workload."* In others, it is a specific workload responsibility. *"It'll be part of the workload. So for example, you may get two or three as part of your workload, rather than everybody doing all of it. So there will probably be 15, 20 maybe, people will do placement visits. And they will change from year to year."* In some departments, every academic visits a few students each and it is seen as a valuable opportunity to connect with employers, as well as supporting the student. *"At the moment, you're talking about three or four placement students per academic member of staff. And I think, at that level, the*

*benefits of seeing the students in the work –connecting with what's happening in industry – outweigh the drawbacks of the amount of academic time. Because obviously every visit costs a day.” This can be particularly important for those responsible for curriculum. “We like course leaders, programme leaders to be involved in visits so that they’re getting a sense of the students’ performance in the workplace and also tying in with employers so that the benefit of that is captured for programmes.” The placement visit becomes an opportunity to get external assessment of and input into what the Department is doing. “So for staff the placements are important, but the placement visit is an opportunity to find out what employers think about what we’re offering and our graduate skill set and what they think we should be offering.” In some cases, academics are given detailed guidance on what needs to be covered in a placement visit. “We ask supervisors to complete a form, which gives them guidance, in terms of what they should say. One of the things we incorporate within that, again, is another check on health and safety and student welfare. Making sure the student has everything they need, and suitable accommodation; not having problems getting into work etc., so the sort of duty of care type requirements. We ask them to talk to the students about what it is they’re learning, and the support they’re getting, whilst they’re there, from the supervisors. ‘Do you have a supervisor? Are they available? Are you able to meet with them regularly? Who do you talk to when you’re stuck? Do you have enough work? Do you have too much?’”*

In a handful of institutions the model of visits and support is quite different. Here a single or team of dedicated placement staff visit all students. *“Our Placement Coordinator goes out and visits them, because we want to make sure that they’re not just making the tea or something like that, which is why we don’t offer placements abroad, just because it’s more difficult for us, because we just have him to go out and check that what they’re doing is real. He visits all the students, at least once, if not twice.”* In others, it is a Faculty placement team that is responsible. *“The contact, once the employer says that they want placement students, is with the Faculty placement team, and they also maintain contact with our students, whilst they’re on placement. They also manage the health and safety aspects of all of that, as well.”* The student’s relationship to the placement coordinator is qualitatively different to the relationship they have with an academic who is responsible for their assessment. *“It is a chance to actually have a conversation with somebody that is not their boss, not their mum, that sort of critical friend thing that we try to be a little bit. Playing devil’s advocate too, ‘Why have you learned this?’ Or, ‘Why do you say that?’ Some of those questions are quite good for them.”*

Placement visits very often include meeting with the student’s work manager. This can be as an additional check on the student’s performance. *“We’ll also meet with the supervisor as well, on a one to one, to say, ‘Is this person performing? Are there any issues? Is there anything else you’d like us to deal with?’ [We] leave our details with the supervisor as well, as a contact, because problems do arise.”*

## Returning after placement

When a student finishes their placement, there is another transition back into university. Compared to the preparation given for going out on placement, few places provide specific support for students to return to study. *“When they come back, we don’t do enough. We’ve become more and more aware that there’s another transition that occurs and we need to think about it, because the students have been working in different contexts, often thriving, enjoying themselves. Not always looking forward to coming back to university, because they realise they’ve got an awful lot of work to do, but also they’ve enjoyed some of their new experiences and new freedoms. I think it’s a culture shock.”* There is a pragmatic emphasis on sorting out their module and final year project selection but little else. *“We sort out their final-year projects. We send all that out to them while they’re on placement. But there’s not a huge amount of debriefing.”*

One way of reintegrating students is to encourage them to share their experiences of placement with other students in an ambassadorial role. *“This year we’re having a return to university induction and they’re going to come and meet the students starting second year and I hope they’re not going to scare them off, because the students decide to go on placement at the end of second year. But we also think that will help ground them back into university again.”* In some Departments, this can be selective, with a few students asked to promote placements to the next intake. *“At the initial briefing they do usually get one or two of the previous year’s placement students to come along and say how wonderful it was.”* In others, all students contribute through specially organised events and activities. *“We use them to try and promote the placement process, to our second and first years. We run an Employability Fair event where students present posters based on their experience on placement.”*

Sometimes there is an overlap between placement students and the finishing student can act as a mentor to the new student coming in. *“But there’s a nice cycle for a lot of employers, where the new student gets to shadow the finishing student and learn. I think that’s really important. I just think that this is a big transition. They go through each year and then they go off, they go back to university and they graduate. They carry that experience with them.”*

Monitoring of students’ employment status in their final year is also rarely done in a systematic way, and instead tends to rely on individual communication between students and their tutors. *“We get the data a year after they’ve graduated, but, until that point, we don’t really know where we are. Course leaders, quite often have got a fairly good idea, of what’s going on, on their course, and if you teach the students, on their final, which I do, you’ve got a fairly good idea of who’s got jobs and who hasn’t. It would be nice to have more data there, and then we can target, if we need to, so it would be very useful.”*

## Assessing the placement

Assessing the placement year is an important part of the process. Some placements are credit-bearing parts of the degree. *“They get 60 credits, so that’s half a year’s credit. It’s graded just as a normal module would be.”* In these cases, the placement influences the student’s final degree classification. *“It’s not just assessed pass/fail; it’s been given a grade and is now part of the final degree class.”*

Placement marks tend to be higher than other marks. There is a perception therefore that grading placements will enhance degree classifications. *“It should make a difference because, typically, placement marks are higher than the other marks.”* But for some this difference is not obvious. *“The last couple of years, we’ve moved to a placement now is credit-bearing, but actually counts towards to the final degree class. I can’t say I’ve noticed it making a huge difference.”* Some institutions have taken measures to ensure that credit-rating of placement does not disadvantage the student in any way. *“It is credit-rated. Meaning it counts towards the classification of the degree. But the regulations allow us to offer the student, at the end of their degree, when they classify their degree without placement, if it provides a better class outcome.”*

Other universities choose not to grade their placement, or a separate award is given. *“Our placement is not a credit-bearing part of the degree, but it’s a diploma, an additional diploma they get when they go there, so it has to fit an academic shape, which is do a year and do some reports.”*

Most marking of the placement is done by academics. Employers generally do not assess but they are consulted. *“The mark is given entirely by the academic but they will read the employer’s final report as part of that.”* If a student’s performance in placement is poor, then the placement mark may be reduced, but not significantly. *“When I used to do placement visits, there was one student –*

*the employer was saying, 'Well, we've had problems with their timekeeping, and it's a bit better now than it used to be' type stuff. Well, that's a lack of professionalism and therefore should be, I think, reflected in their mark to a degree – but not to an overwhelming degree. It's only part of the picture."* Employers actually marking the placement is rare and is seen as problematic, although their input is valued.

Where an element of the assessment does require input from the employer, the contribution is usually small and not graded. *"The way the assessment works is it's a short report every month and has to be signed off by the employer and then the supervisor looks it through. It's more or less a pass/fail and they get, I think, 10% of the assessment is based on that."*

The format of the assessment varies but most placements are substantively assessed on the student's reflection on their learning through the placement. They may be required to discuss their role in the organisation. *"So the one ... is typically, how is the place organised? what's my role in it? how do I fit into the structure? what is my purpose, the objectives of my role?"* The assessment may also include reflection on how their placement links to other modules they have studied. *"The most important thing is to reflect on what they were doing and how it's been influenced by the other modules they've studied at university, how it has opened their eyes to the way business works and so on."* There is usually a requirement for regular documentation, as well as final deliverables. *"We also require them to complete a certain amount of documentation, which is really about reflecting on the experience, the learning experience, in terms of the skills they're developing, whilst they're on there. In order for them to pass, we require a certain amount of documentation is completed, whilst on placement. They have to do a final presentation, to the visiting tutor and to the work supervisor as well, which, again, is reflecting on their role, in the organisation."*

One university has chosen a particular structure for the reflection, to mirror how employers are structuring interview questions, so that their placement assessment helps them in preparing for job interviews. *"The STAR L Framework, is something used by employers for behavioural interviews and it's a way of asking a question to get a certain result. It's to get students to talk about a situation where they've made a difference or had something challenging. How did you do it? What they really want is students to come up with an answer structured around situation – what was the situation? T – what was the task? Action – what did I do? Result – what happened? But most importantly, learning – what did I take from it? STAR L. What we wanted was students to be able to develop a set of collateral they could take forward to interviews and if you've got a great learning log, that's fine. That documents experience. But we thought, well what if instead of that, you actually highlighted a number of critical incidents and wrote them up in terms of the STAR L format? So we now get them to do that as the assessment. They choose incidents of experiences and document them in the STAR L. They do a series of these ... we hope they're developing some collateral and evidence that they can very quickly use in competency-based interviews, behavioural interviews."*

In most cases, the focus on reflective assessment means that it is possible to have a difficult placement, but still pass the placement module. *"We're marking the extent to which they have been able to frame and meet personal and professional development opportunities, and reflect on them. So a disastrous placement where everything went wrong for you can still be a very positive placement, if you've got something out of it, and understand what you've got from it."*

However, this is not always the case for strongly industry-focused degrees such as the ITMB. *"At the end we assessed that employer feedback but if that feedback wasn't satisfactory it didn't matter how good your reflective diary was, how good your presentation was, how brilliant the report you have written, you failed."*

## Showcase

### Dedicated placement support: University of Kent

This Showcase highlights one Department's approach to supporting the whole placement lifecycle and how this has enabled them to meet the challenge of reaching Tipping Point.

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## Overview of the practice

### Context

The University of Kent sends 70% of their Computing undergraduates on placement and have one of the highest rates of graduate employment in the sector. The expectation from students from UCAS days onwards is that they will spend a year in industry as part of their course. The strong placement programme is seen as an important contributing factor to the high employment.

*"Students come back more motivated; get better degrees; they know what they want; they perhaps have test driven a career; and really does act as a launch pad for them. So it's a very, very powerful tool for us in the School of Computing."*

Underpinning this is a dedicated, in-School, Placement Office, with two Placement Co-ordinators, Siân Robson and Katie Van Sanden. Unless otherwise indicated, the quoted words used in this Showcase are those of Siân.

The Placement Coordinators' sole role is to get students into placements. They do not have any other responsibilities. This enables them to give individual support to students throughout the placement lifecycle. They are certain that this is key to their success, as Katie explains: *"So that one-to-one is something that we think is very powerful. And we were able to do a sort-of controlled experiment because in [another School in the University], they didn't have a placement officer. In fact, across the campus, I think we're the only dedicated placement office. Other places, they either have an academic – it's part of an academic's role- or it's a faculty-wide placement officer. But [in this particular School] it was part of somebody's role. They went on maternity leave. So one day a week I went over to that department ... purely to work with their students on placements. Their numbers tripled for the two years that I was there. When I left, they went back down again. So, to us, it really is about that one-to-one, individual help [and] guidance, career guidance."*

## What they do

The Placement team provides support in a number of different ways. Before students even arrive, the team contributes to UCAS Open Days to encourage students to register for the *Year in Industry* programme. *“Most students if they haven’t applied for the Year in industry option quite often change, to the point that almost 100% of the people that attend UCAS days end up with that registration. That is the very first contact we have.”* They provide input into the curriculum at all levels, with most emphasis on Stage 2 where they have a dedicated, timetabled slot for placement preparation. Crucially, they provide individual, personalized support to students, in all aspects and stages of their placement. They work closely with existing employers who offer placements to Kent students, as well as cultivating new placement opportunities through their alumni network and new employer contacts.

Their year begins with the UCAS open days, where they talk through the *Year in Industry* and give examples of the kinds of placements on offer and the support available. At stage one, they provide a couple of sessions for students. *“Just about general employability and encouraging them to make sure they make the most of their summer in terms of getting some work experience, building a portfolio or whatever it is.”* Stage 2 is where they have most contact with the students, through a weekly, timetabled session for all those on the *Year in Industry* programme, from the start of the second year. They begin by getting placement students back to talk about their experiences. *“We obviously pick good ones but also we pick a range ... Rather than just showing people that have done these amazing things and have done presentations abroad and stuff. There are a lot of people that that just scares. After that, they bring in employers. These sessions can be recruitment opportunities, but also provide students with a clearer idea of what a placement opportunity entails. “The ones that work best are where people bring previous students ... The students relate very well to that rather than just somebody from HR turning up and spouting off. It is like your mum telling you something.”*

In parallel to the timetabled sessions, Siân and Katie offer bookable one-to-one sessions as well as operating an open door policy. Students can get individual support with applications, CV writing and interviews, as well as help understanding particular job opportunities. *“We try to make sure that everybody comes through the door in that time. We don’t necessarily succeed but we try and encourage everybody through.”* This support can also be very personal – picking them up when they have a rejection, helping them choose between competing offers and managing their expectations. *“For some of them it is about managing their expectations down. For some of them it is about managing their expectations up.”*

Before students leave on placement they have a compulsory pre-placement briefing with the Placement team, which explains the deliverables for the placement as well as personal development issues such as *“behaviour in the workplace, comfort zones and objectives”*. They then visit all the students twice during their placement.

In March, all the students (except those on international placements) come back to campus for the day, where the Placement team gives them more guidance on their deliverables and they choose their final year modules. On that day the School also organises the annual Poster Fair for final year projects. The event is attended by second year, placement year and final year students, providing an opportunity to make connections between students.

The work of the Placement Office is very effective: 70% of students at Kent have a *Year in Industry*. Those who don’t go generally haven’t engaged with the placement process or have unrealistic requirements. *“What we find is that the ones that don’t get a job because there are some, but they generally don’t get a job for one of a couple of reasons. Either they are so lazy that they have just not bothered applying for anything, or they only want to work for Google in Whitstable”*.



## Key characteristics

### Knowing every student

A critical factor in the success of the Kent Placement team is that they try to get to know every student personally. *“So to us this is a bit of a secret weapon. For us it’s all about getting to know that student. They all have very, very different needs. It could be anything from learning how to shake hands with somebody, right up to other end of the spectrum where they just need help with professional networking or something like that.”*

This personal knowledge allows them to match up students with employers and opportunities that would suit them, whether because the work is what they are looking for, or the location fits their needs or, in some cases, it matches their outside interests. *“There is a [local company] that is a web development company but they do everything for the automotive trade. [Some students] love the motor racing or whatever. We will just say, “Look out for this company when it comes out.” Quite a few of them will then follow these companies.”*

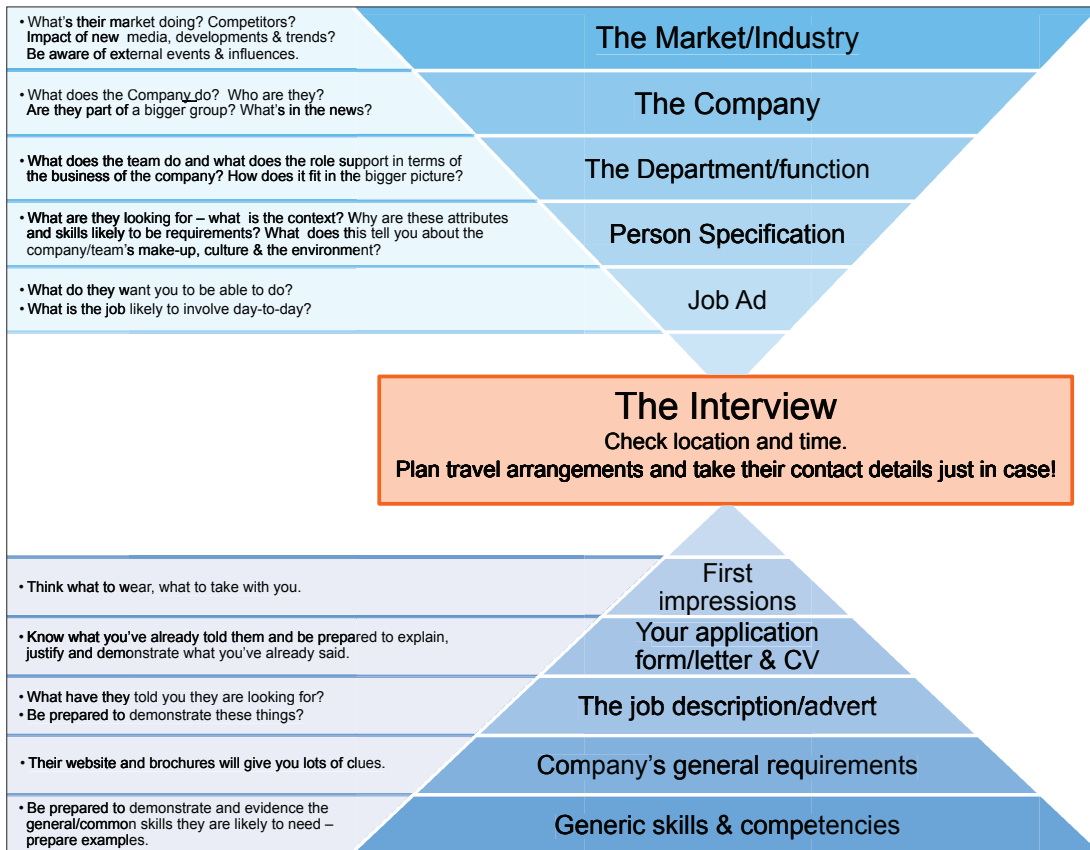
It also allows them to give appropriate support to students, knowing when they need building up and when they need a reality check, being able to adapt to their different needs. *“Everybody starts from somewhere different. For some of these guys it is just about getting a job. It is not about working for Morgan Stanley in Canary Wharf and elevating your career. It is just about getting out of your bedroom and talking...”*

### One-to-one support and scaffolding

The support that the team provides is individually tailored both to the particular student and the opportunity they are applying for, and it is available to the students whenever they need it through the year. *“We work on a one-to-one with them as many times as they want. It’s a kind of service that they would pay a lot of money for out in the real world – and they often don’t actually appreciate this until they are in the real world!” (Katie)*

They have developed tools to scaffold this support. These include a pro-forma to help students prepare their CVs. *“We try not to give them example CVs because then they literally cut and paste it and everybody’s is exactly the same. We put together some CV templates, just some blank headings to help them.”* Once the student has at least drafted a CV, they will give individual feedback. *“The idea is that they come to us with something. We always say to them, ‘We won’t write your CV for you. What we will help you do is give it structure and polish it once you have got it.”*

They also have a visual guide to how to prepare for an interview. *“We found ourselves talking them through how to prepare for an interview, every day, several times a day. So we thought we’d just create something that we can put out there on Moodle, and they swear by it now. We do find that the students who ‘get’ this, who understand how you can properly prepare for an interview, are more likely to get their interviews converted to offers. It’s quite a dramatic increase in success rate.”* Much of their work is supporting students through the interview process, often only after the students have tried to do it on their own. *“Quite often they may not come for their very first interview. Sometimes they don’t come and see us because they think, ‘Oh I’ll nail this.’ But then when they have either a bad time or they get a rejection then they come and let us help them going forward.”*



### A slot in the timetable

Placement preparation is fully integrated into the curriculum, with a compulsory slot in the timetable, throughout Stage 2. *"I think one of the key things for us is that we have a timetabled slot for all students registered for the year in industry so the vast majority of them."*

Although attendance is not 100%, and *"waned over the course of the year"*, there is *"still a core so it is still worth employers coming"*. This makes it possible to have a full programme of employer presentations and maintain good employer relationships. Having the timetabled slot contributes to this. *"We do have a problem with attendance for anything except these timetabled sessions."*

### Visiting everyone

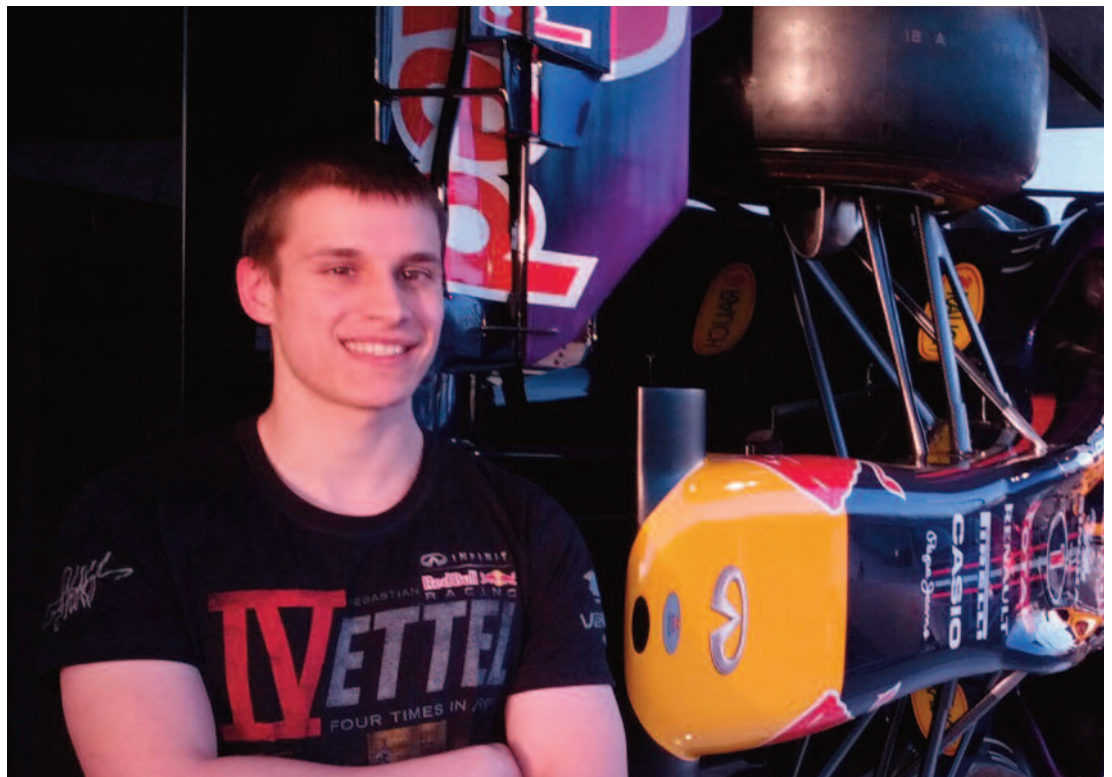
A notable feature of the Kent *Year in Industry* is that placement visits are not shared across academic staff but are all done by the Placement Coordinators. Each student is visited twice in the year. The first visit takes place in the Autumn, when the student has been in post for 2 or 3 months. Some of these visits are done remotely via Skype, particularly if the employer has a long-standing relationship with the School and the student is perceived to be very capable. *"The first visit is all about, 'How are you settling in? Do you know what is going on? Have you met people? What are your objectives for being here?'"*

The second visit is always done in person, even for international placements. *"We usually allow two hours for that visit. The idea is that it is a parent's evening again. 'How are you doing? How has it gone?' But also really getting them to reflect then on their year. Some of it is talking to them about, 'Are you on track for your deliverables? Have you been keeping a logbook? How is your report going?' But it is to really get them to sit back and think how far they have come."*

Having the Placement team undertake the visits means that they are different in nature to academic visits, with a focus on personal development rather than technical work. *"Katie did some cover at [another school] for a while. Their visits were all done by academics. Katie sat in with a few of them. She said it was really interesting because the academics would do the whole, 'Hi how are you?' conversation for five minutes. Then they would want to talk about what they were building. Talk about the coding or the engineering because they were genuinely interested in it. The students were happy to talk about that. But it was much less personal than I think our visits are. We focus on the students' personal development, are they pushing their boundaries, are they setting objectives, are they getting the most out of it?"*

### Brokering connections

One of the strengths of the personalised approach is that it allows the team to broker connections for students to find out more about a particular job role or company, both with academic colleagues and with other students. The one-day event in March provides a perfect opportunity to do this. *"For Katie and I, it is one of the highlights of the year. You've got the final year students exhibiting their posters, many of which we obviously know. You've got the current placement year students who are returning for the day. You've got all the stage two students who are also there attending just to see the posters. It is like a massive wedding reception for us. It is putting distant cousins together. 'This is the person that was doing your job last year' – because we have got three generations of students there."*



They also broker more social connections. *“This year for example – with their permissions – we gave them a list of everybody that was in London, so that they can sort out a few social evenings. There are a couple of guys who we knew were natural leaders amongst them at the more social end of the spectrum. We targeted them and said, ‘Why don’t you just arrange the first Monday or the first Wednesday of every month you will be in this particular pub? Then everybody can go along.’”*

### Discipline-specific support

The placement support provided is not generic. It is not support that could necessarily be offered by a centralized careers service. It is specifically geared towards Computing students. They can provide domain-specific information about what particular roles involve and point students to people who can give them more insight. *“What we are able to do and that is why it is quite nice having a dedicated Computer Science office rather than a Faculty office is we can say, ‘Well why don’t you talk to Fred here in the common room and I will put the two of you together. He can explain to you what he actually did when he worked for Accenture’ or whoever it might be.”*

Computing students have a particular skill set and knowledge and having a dedicated placement office means that tools, templates and even conversations, can be adapted to be appropriate to this student group. *“We have got templates for covering letters and things like that, just some tools for them to help. Everything that we have got is kind of Computer Science specific.”* They can adapt the language they use so that it makes sense to the students. *“One of the ways we have been describing it to them is by analogy to software; ‘There is a student version 1.0 that arrived and there is a version 2.0 that is leaving. What has happened in that release? What’s happened in-between?’ For some of them it is finding that kind of language. If they were Drama students you could say, ‘Write a reflective report about your experiences.’ They would take that and just write it.*



*But for Computer Science students, it doesn't always work. You know they haven't written a reflective thing since they were in Year Eight when they were able to give up what they call all the 'mamby-pamby' stuff".*

## Benefits

### Tipping Point

Having a strong, dedicated Placement Office has enabled Kent to achieve Tipping Point, where there is *"an expectation that they will do it from the outset"*. Although there may be other factors contributing to this high success rate, such as geographic location in the South East, there is no doubt that the support students receive enables them to present themselves favourably to employers.

### Employer relationship

Having a dedicated Placement Office gives a good impression to employers, and a clear point of contact. Employers are impressed that most visits are done in person. *"Second visits, all of them are in person wherever they are in the world. I think that makes them warm to Kent. Some of that is where we get repeat business from as well."* This in turn means that placement opportunities are always available.

### Alumni engagement

When students have a good placement experience, they want to talk about it – and when they are promoted into hiring positions, they want to make the opportunity available to others. *"They become quite evangelical about doing a placement year. We definitely see that. 'It was the year that shaped my career. It changed my life.' This kind of stuff. Therefore they want to see others benefit in the same way."* This ultimately leads to further placement opportunities. *"We've got an example where one placement student over the course of three years [has] generated thirteen subsequent placements."*

## Equivalent of a sandwich: The Challenge of Finding Alternatives to Placement

We do all sorts of summer placements and short placements, but we haven't added them up to make an equivalent of a sandwich.

### Key issues

**Getting work experience** When it is impractical for a student to do a placement year, they risk graduating with no industrial experience at all. Given that placement is associated with better academic performance and increased confidence and professionalism, this is problematic. These students may be dismissed as failing to take up the opportunities available but this is missing the point. *"We've failed to really recognise that, for a number of reasons, students either don't want to or are unable to do a placement. We have a tendency to berate the current generation [of] students for not taking up this opportunity. And this means that about 50% or 60% of our students probably graduate without getting any work experience at all."* Providing alternative ways to offer work experience is critical. *"I think experience is great, and very important to help you understand, and to be able to work in industry and so on. But I'm not sure that the nine-month placement is the only mechanism we should be using. In fact, I'm sure it isn't, I should say."*

Many institutions no longer have an expectation that the majority of their students will do a full year industrial placement and so offer summer placements instead. *"Something around 80 students a year, ... about 25% to 35% ... doing a year-long placement. The rest are doing summer placements."* Such shorter summer placements are very successful for some universities, with some students having an internship in every summer of their degree. *"The number of our students who went on placements over the summer was probably about 400 or 500, so it's quite big numbers. That is all years going."* Other institutions are exploring even shorter activities with companies within term-time. *"We have a two-year intensive programme, which means no time to have long placements during summer time ... This has really led us to having very small internships. When I say 'very small', our students would have spent four, five weeks [for] half a day a week during term time going to a company ... And [that has] led to them getting jobs at the end of their study period."*

In other institutions, students do not leave the University, but undertake 'live projects' for an industry client within the curriculum to provide something approximating to work experience. *"In the team project module they have an actual real customer who says, 'Here's a problem, go and fix it.' It's not exactly like a placement but it's giving a real life situation where they can say, 'I did this on my team project'. This is good for an interview."* A few institutions acknowledge that some students do not want to work for anyone but themselves, and therefore give recognition to enterprise and entrepreneurial activity. *"I've got a situation where some of the best students on a games degree decided that they didn't actually want to go and do a placement, they'd rather set up their own company. So, they went across the road, hired themselves a small room and in the first few months have already turned over £350,000 and probably, by the end of the year, the game's gone beyond beta, will roughly gross £1m out of it. I can't really say, 'No,' to that."*

**Valuing alternatives** Such alternatives are often viewed as second best to the full placement, even where there is evidence of them benefiting the student. *"They'll go out, they'll get a summer placement, they'll get experience of working with the company; they'll come back, they'll be head and shoulders above the other students, and they'll get that grade higher than they would have got"*

*if they hadn't done a placement. Okay, it's only three months rather than a full year, but I suppose it's better than not having anything.*" Trying to offer alternatives to placement can meet with internal resistance, particularly where a traditional placement has been the expectation. *"There is still this view that the year-long placement is the gold standard, so anything that allows the student to get off the hook, so to speak, or is viewed as it, is a difficult sell."* However, there is an acceptance that things will need to change if students are to have an industrial experience at all. *"[Our Department is] going to have to bite the bullet eventually, because you're never going to get 100% of people to be on placement, but getting them to realise that is taking a while."*

Shorter alternatives to placement can be viewed with suspicion in some universities. The traditional sandwich placement is usually assessed and attracts credit. In some cases it is ungraded but a pass is required to be awarded a named sandwich degree. At other institutions the sandwich year is graded and contributes to the student's final classification. Introducing alternatives to the year-long placement raises questions as to whether, and how, to provide credit for these activities. Some institutions offer shorter placements as experience, without attempting to give them credit as alternatives to placement. *"We do all sorts of summer placements and short placements, but we haven't added them up to make an equivalent of a sandwich."* In other institutions, there is a desire to offer credit, but resistance, at least in some quarters, because of concerns about how this would impact on the full placement year. *"So that enables us to run typically 10-week internships over the summer. Some paid, some unpaid. That gives them direct practical experience. And that's a really good opportunity for those people who aren't on the full professional-placement year. And we're working with our placement's office to try and formalise that as a placement. Not a full 120-credit one, but a shorter one. They're proving somewhat reluctant to do that because they feel that those are the gold standard and mustn't devalue the gold standard. Bah, blah, blah."* Where shorter alternative activities are given credit, this is still not without difficulties. Some report concerns from legal departments about the public liability issues of students undertaking short, consultancy-style projects. This can be a source of conflict with and frustration for academics. *"[Students could] do consultancy work for businesses. They get the skills and they get paid for it, and they get academic credit. [But] I've been fighting with our legal people for two years about ... Liability. Liability. It's the fear of risk that sometimes prevents you from making changes."*

**Getting employers on board** Although shorter placements may be more acceptable to some students, finding employers willing to offer these sort of opportunities can be an issue. Some institutions report having tried and failed to interest employers in shorter summer placements. *"I think employers could give some experience to students if they did summer placements, but we've explored that with employers and they're not that flexible."* In particular, some have found that the larger, blue-chip companies are only often only interested in year-long placements. *"But because ours weren't year-long placements all of the leading blue chip recruiters ... they are not interested in our silly six week placement."* Others have been more successful placing students with larger companies for summer placements as well as smaller local companies. *"It'll be companies like Goldman Sachs and JP Morgan, a lot of the banks, a lot of local companies."*

Some institutions found smaller companies, in particular, prefer shorter placement and found them easier to resource. *"But there's actually a lot of companies that want smaller, three month placements. SMEs typically aren't interested in year-long placements. They don't tend to have the capacity for that type of commitment to students, but a summer, three months full-time, works with them very well."*

## Cluster: Placement alternatives

In addressing the challenge of *finding alternatives to placements* and, in particular the key issues of, *ensuring students get some work experience* and *getting employers on board*, many institutions are exploring different routes to providing some authentic industrial experience. *"I think everything that we do comes off placement, to tell you the truth. We just see direct exposure to industry as the defining employability characteristic. Everything that we've done has been about approximating that for those students who don't go on placements."* But there is a growing acceptance that there are other ways of addressing the same needs. *"I think we need to recognise that there are different ways of getting that professional experience"*.

These can include shorter placements, internships or industrial projects. *"The one year placement tends to work for the bigger employers. But there's actually a lot of companies that want smaller, three month placements."* Often shorter placements take place in vacation. *"The internship team will work with students at the end of their second year before their third year working on sort of summer placements."* Shorter placement opportunities range from summer placements of 8-12 weeks, through to short internships of a few days a week during term time. *"This has led us to having very small internships with them. When I say very small, our students would have spent four, five weeks half a day a week during their term time going to a company, doing some work experience. And those things have led to them getting jobs at the end of their study period."* They can also be in the form of shorter 'live' projects that may lead to students getting offers of longer placements. *"So when they've done live projects, where does that lead to? Well, potentially it can lead to placements, because they've already engaged with employers. Many of the employers that are involved in live projects are companies that are doing placements with us, so they've automatically got a link in to placements."*

Although short placements and summer internships are a response to students not being able to commit to a longer period, some institutions still experience difficulties getting students to engage. *"They have unmet demand for students to do IT-industrial related, industrial experience, minimum 12 weeks. They can do this in the summer time, between their second and third year. These are often going unfilled. When I say unfilled, I don't mean applied for and failed to get, I mean couldn't be bothered applying for it."*

Just like year-long placements, most internships and short placements are paid or receive some form of credit. For many institutions this is an important principle. *"We're very into credit or pay. We're passionately and politically against work for nothing. Placement is work and work is paid, unless there's course credit. We take a very dim view otherwise."* In part, this is an issue of equity. *"These aren't opportunities for wealthy students or people with supportive parents because of course many of our students need to work in the summertime. Basically the team won't entertain a placement with an employer unless they are prepared to fund it to minimum wage levels at least."* In part, payment is considered motivational. *"I do try and encourage the employers who come directly externally [with an industrial project] to put up a bit of money; just, I don't know, £1,000, to say, 'This is a bursary. If you want us to pick out a student and everything else to make sure it's really good and you want to encourage students to apply for it, then a bit of money just helps.' I think it's a not unreasonable thing to ask for. It gives them a bit of commitment to it."* In some circumstances, academic credit is the currency of reward. *"Part-time through term time works very well. So one of the things I've done is develop an existing module that was an internal module called 'Programming Project', where students work part time on a research project or for a member of staff and got course credit for their work. We've turned that round, called it 'Professional Practice' and made it an external facing module."*



In some cases, internships will be sponsored by the university to support an existing collaboration with industry. *"If we've got local companies we've worked with in the past, for instance, from where I got this project that hasn't been taken up by anyone, then maybe we can offer an internship to do that work with the company."* In other cases departments run companies that students can work in as interns, for specified periods. *"We have a student software company that develops software both in-house and for external clients. So that enables us to run typically 10-week internships over the summer. Some paid, some unpaid. That gives them direct practical experience. And that's a really good opportunity for those people who aren't on the full professional-placement year."* Other versions of student companies are not permanent, but recruit as demand dictates. *"So, we- it does commercial briefs. Commercial contracts with different companies and to build all sorts of different bits of software. We employ a relatively small number of students at any one time to work on those projects. The students are recruited project to project, really. So, we'd have a different team working on each brief. The average project is about 10 to 12 weeks."* Often, this sort of work is connected to the local economy. *"We have an enterprise projects team which is extracurricular. It takes commercial briefs from local companies or charities and builds things like websites and apps, and students are employed to work in that team."*

Being extra-curricular and involving external clients means that these opportunities are only available to the strongest or most motivated students. Sometimes this is a policy of deliberate selection. *"So we take a little care to only pick the students that are really motivated, because it's going to eat up quite a lot of their time."* Sometimes these conditions are part of the criteria. *"If your academic record is sufficiently advanced, if you are a student in good standing shall we say then you will be eligible for one of these 12 week placements."*

An alternative to commercial contracts is arranging for students to work for charities. Here the work is frequently unpaid but the student can receive some recognition for volunteering or, in some cases, course credit. *"They try to encourage students to get experience at being an IT consultant or a computing consultant or whatever, but in a volunteering kind of way. So they do things for charities. But that's a good way for a student to experience being a consultant."* The community benefit is seen as part of the attraction of this sort of work. *"So we get them setting up a website for a local charity. The charity wins and the students get something on their CVs. I know lots of universities do that."* Sometimes this sort work is brokered at a University level. *"We have a one-stop-shop for third sector opportunities. If you want to volunteer in order to get some experience on your CV, you can go there and get an opportunity in a third sector organisation. So as soon as that opened, we went down and said, 'Well, we can use these opportunities not just for experience, but students can get course credit if they do a professional practice.'" The employability benefit to the students is seen in the same light as working in for-profit companies. *"When they actually do their team work projects we get them to do that for a local charity – go and develop some software for some local charitable organization. And that we find actually helps because ... obviously when you go for an interview, you're nearly always asked – well – have you done any team work, have you worked with a group? And they'll be able to turn round and say 'yes and we did it for XYZ charity.'"**

Several universities have institutional volunteering awards that give students recognition for their contributions as well as the opportunity to gain more general experience in team working, mentoring and other softer skills. *“Of course we have [University] Volunteering on campus; we’ll encourage volunteering, mentoring, the buddy schemes, all those kind of things, to build up their CV, to build up their experiences.”* These schemes typically involve non-disciplinary work outside of computing-related activity. *“Part of the Distinctive [University] Curriculum is students get an opportunity to show that they are actively engaged during their undergraduate program in terms of being a good citizen, volunteering, doing work experience, things like that. It is about being a distinctive graduate, being a value added graduate.”* Others have taken this a step further to develop awards specifically focused on improving their employability through developing such skills. *“We started an employability award at Level 1, which is purely for Level 1 students, so new students. It puts them in multi-disciplinary groups of five or six, and gets them to work on a project. When we ran it last year, it was two hours a week for a term. It was part them settling into university, part them making new friends, and part them trying to do something. So they would go away, they research it, we give them a bit of a stimulus, and then they present at the end. So it’s presentation skills, teamwork, a bit of research, a bit of data analysis.”*

## Showcase

### Short placement modules: University of the West of Scotland

This Showcase highlights one approach to offering authentic work experience within the curriculum with a particular focus on building confidence and professionalism.

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## Overview of the practice

### Context

The School of Engineering and Computing at the University of the West of Scotland (UWS) has a strong focus on vocational courses. One of the challenges they have is developing and maintaining an appropriate work ethic and professionalism in students. Tom Caira, Senior Lecturer at UWS, attributes this to the freedom University education affords. *“One of the biggest issues is work ethic. It’s quite a strange situation that these students – they’re very regimented the whole way through their life and the whole way through school. They’re very regimented once they get into the workplace and they have these four or five years where they can just explode and do what they like. They don’t think anyone cares if they come to lectures or not”*. Their response to this issue is to offer regular short placement modules, to give students some experience of what work is like.

### What they do

Placement modules are offered in second, third and fourth year. These are not compulsory, since it is not possible to guarantee sufficient places, but students are encouraged to take them. Students on the modules spend some time out working for employers. These placements are relatively short – typically 2 days a week for 8 weeks – and are unpaid. The aim is that the students *“go out and the experience what life is like in an office environment”*. They then do a detailed reflection on their experience. *“They reflect back to the placement, the problems they had and how they dealt with it. They reflect forward to, ‘How has this shaped my thinking for the type of career that I want?’”*

## Key characteristics

### Professional experience

The main focus of these short placements is to give students experience of work in a professional context. The technical context is less important than the development opportunities for the student themselves. *"I'm not that fussed if they improve their software engineering skills or anything else. It's all about the other aspects ... what they've done and how confident they are, how they can communicate and work ethic."*

### Assessment driven

The placement modules are assessed on a reflective response to their work experience. *"When we put them out on placement, part of what they have to do – because it's a module and they're assessed on it – is to actually reflect, in quite a lot of detail, about what they've done, what they've learned and how that's made a difference."* This assessment also influences their participation while out on placement. *"They have to interact, they have to engage and, again, part of their assessment is to talk about who they've met, what the whole organisation does – so they have to get out there."*

## Benefits

### Improves work ethic

Taking the placement module changes students' attitudes and improves their work ethic. They come back with a more professional attitude to their work. *"You can actually go in, next year, to that class and pick out the students who have been out on one of these placements because they 'get it'. They get the need to knuckle down, to work hard, to turn up on time and to listen and so on."*

### Builds confidence

Even these short experiences in the workplace build confidence in the students, both with their peer group and external contacts. *"They're the ones taking charge in project groups. They're the ones enthusing and encouraging other students to get with it and so on because they have this level of confidence. When we have employer visits, they're asking, 'Can I go and meet them at reception and bring them to the room?' They can walk in and chat away to them. Things they could never, ever do before."*

### Demonstrates value of work experience

The changes in students who have done the work placement modules is noticed not only by staff and employers but by their peers. This entuses other students to want to do a Placement module. *"The students who don't do placements and don't think about employability are actually losing out. We're finding that students are coming, saying, 'Well, I didn't do the placement in second year, but I was talking to so and so. Can I sign up for the one in third year?'"*

### Improves employability

Students who take a short placement module are more likely to be selected for graduate internships and jobs. *"We know from talking to employers that it has helped. They've said to me that they can actually equate the ones that they interview and want to take on, with the students who have actually been on these placements. So when we look back, we can see that this is actually working."*

## Showcase

### Multiplicity of opportunities: London South Bank University

This Showcase highlights one Department's response to the challenge of providing alternative authentic work-based experience, by offering students a wide range of opportunities to suit different needs.

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## Overview of the practice

### Context

London South Bank University (LSBU) is a modern, civic university with a focus on enterprise and entrepreneurship. Dr Safia Barikzai is a Senior Lecturer in the Division of Computer Science and Informatics, School of Engineering and Student Enterprise Champion, working closely with the University's Entrepreneurship and Innovation Institute to provide work experience opportunities for her students.

Although a full year placement is available for all courses in the School of Engineering, take up of the Sandwich placement **Year in Industry** is very low in the Division of Computer Science and Informatics – typically less than 10%. There are many reasons for this. Some students lack confidence in their own abilities and knowledge. *“They may be first generation into university, their backgrounds vary, English is not their first language.”* Some have care-giving and family responsibilities. *“Perhaps mum or dad or somebody in their community doesn't understand or speak English, so they work as their interpreters. They are caregivers or have responsibility for younger siblings.”* Often they simply leave it too late to apply or prioritise course deadlines over placement applications. For some the cultural pressure is to prioritise study and getting a good degree, with work experience valued less. For others the pressure is on parents. *“We need to inform and educate parents as much as the students. In the past, we have reassured parents when they were not as keen on their child undertaking a placement. I even met with an anxious mum to answer her internship-related questions.”* Some students feel they can't give up their part-time work as it provides them with a stable income even though the placement is a fully-paid opportunity

However students who engage in work experience, be it through the **Year in Industry** or other short-term opportunities, come back and perform better in their course. *“Within the coursework, subsequently, in other modules, they are better informed and they know from both angles because*

*they've actually done it."* So students are encouraged to gain work experience at all levels and through a multiplicity of opportunities. *"We encourage our students, our first years, second years, third years, to take different routes into work experience."*

There is also a culture of celebrating the achievements of these students: for example, the Student Employability Service, organise events to celebrate volunteering where students can come and network with other volunteers, staff and local organisations as well as their contribution being recognised. The Entrepreneurship and Innovation Institute hold a day of celebrations in recognition of its entrepreneurial and ambitious students and graduates at the Clarence Centre for Enterprise and Innovation. Students also receive **Certificates in Enterprise** for their involvement in other enterprise activities and events.

### What they do

Students are encouraged to seek work experience appropriate to their level. First year students are encouraged to gain work experience through **volunteering**. An example of a volunteer partnership is with a local social enterprise that refurbishes donated computers to be reused in disadvantaged communities. Student volunteering includes *"helpdesk support, troubleshooting, hardware/software installations, as well as refurbishment of old computers"*; all relevant to their studies. Second years are encouraged to find **summer internships** of between six and twelve weeks. Shorter ones may be unpaid and effectively be volunteering. LSBU works with local small businesses and startups, including those within their own business incubator unit, to source short-term internships for their students. Computing students typically work with these businesses applying their analytical, design and software development skills. The university itself also offers paid summer internships, within the ICT service for Computing students, working on all aspects of ICT support.

The year-long placement is available to all students between the second and third year. Students either find their own placement or are helped to find a placement by the School or the dedicated student employment service. As an alternative to the **Year in Industry**, the School is looking to validate a **Year in Enterprise**, essentially a sandwich year for the entrepreneur. Students who have a valid business idea will apply initially to join a summer internship within the Entrepreneurship and Innovation Institute to progress their project. From there, if they are successful, they may be selected to continue through a Year in Enterprise.

In the final year, students are encouraged to find an **industry-based project**, with a real client, with whom they can scope the project. *"I don't like the idea of giving the students a case study and saying, 'Go and build a system based on this scenario'. What is better is to give students the opportunity to have a meaningful conversation with a client. Then come back to the classroom and then do the design, user stories, requirements analysis etc. That is more engaging than a fictitious scenario."*

Upon graduation, some students struggle to find suitable graduate level employment. Those students can apply for a 6-12 week **graduate internship** which is supported by the University and offer students the opportunity to work with LSBU's enterprise community or within the University to give recent graduates much needed work experience. Computing Graduates have had the opportunity to work on government-funded Innovation Vouchers, which enable SMEs to access university expertise. The Graduates work on specialized projects, with an SME, and additionally receive academic supervision during the project delivery.

The School actively seeks partnerships with organizations that can provide professional experience for their students in other ways as well. One of these is offering **technically-focused part-time work** through a partnership with a social enterprise, who employ students to provide technical

support to individuals in their homes. The School advertises the available positions and organizes assessment centres and interviews on campus. Those recruited receive training from the company and are then able to take on work to fit in with their study. *"They decide their location. They decide their working hours. They decide how many hours, which days. It's very, very flexible, so they can work around their studies. If it's exam period, they say, 'No', and they're quite flexible."*

Another is involvement in a **cultural exchange** with a global bank whereby students visit the Bank's Software Development branch in China for an eight week period over the summer. The 'Speak for Success' is not a technical programme instead it is designed to facilitate language learning and culture exchange. The students have the opportunity to develop their leadership and facilitation skills. *"It's all to do with our students getting leadership and facilitation skills, developing their soft skills, and for the employees of the bank to be able to speak English clearly and confidently without feeling self-conscious."* The programme is fully funded and is very successful in building student confidence and work ethic. *"It's a really unique experience for our students and it helps their confidence enormously. A Computing student who went last year came back changed. His work ethic improved, and the way he approached things and the way he organised himself. He's now graduated with a first class honours degree and secured a graduate internship in the US."* The programme has been so successful that this year an additional seven Computing students took part, from across all levels of the degree programme. The students demonstrated their leadership skills by successfully organising a cultural event, in collaboration with their Chinese counterparts, to a large audience of mostly Chinese speakers – delivered both in Mandarin and English.

## Key characteristics

### Flexible and responsive

While the School is working on increasing engagement with their sandwich placement option, they recognise that this will not be an option for many of their students. Instead they make available a wide range of alternative options that will give students some experience of a professional work environment, and help build their confidence and/or technical skills. These options are flexible and responsive to the needs of their students – some are extra-curricular, some within the curriculum, some are summer placements, some replace the part-time work that students invariably need to have.

### Partnership

The options available to South Bank students are made possible through partnerships. One significant partnership is with their internal Entrepreneurship and Innovation Institute, through which many of the internships and projects are facilitated. It is also this partnership that will enable them to give students the option of following an enterprise placement rather than an industry one in the near future. But partnerships come from other contacts, including students. One such partnership was brokered by a student. *"One of our first-year student was a volunteer with a social enterprise and he introduced the volunteering opportunity to us saying, "I work for this organisation. I think that we should recruit more students for them". He's been successfully recruiting students now."* Partners also help by training our students and have delivered training sessions for students on campus to help them be more successful in submitting job applications and boost their interview skills.

## Culturally sensitive

LSBU have a diverse student community with a wide range of cultural backgrounds, which can make it particularly challenging for some students to take part in work experience opportunities. It may be that extra-curricular activities clash with a student's personal or family commitments or that some of the on-campus events are in the evenings which can sometimes be problematic for our students. The School therefore goes to significant effort to work with different communities to reassure parents and ensure all students have opportunity to take part in something. *"We've got to address the cultural issues, address the expectations, look at what is stopping them, and actually find out rather than for them not to tell us. It's for us to reach out."* Simple things like providing information packs in multiple languages so that parents can also read them – something to consider for the future. The School also works with partners to ensure that cultural requirements are respected. *"It's making sure that parents and family groups are aware that we do care about that, and we don't ignore their needs and say, 'Well, that's not relevant.' It's saying to the students, 'Look, we'll find a way' and we did, for example we insisted that our Chinese partners provide students with support while they were there, so their food requirements were met, so they had their own facilities. The students were appointed a 'buddy' who was able to offer cultural and language support to our students."* LSBU provided families with an academic point of contact – this helped parents/families enormously.

## Benefits

### More students can gain work experience

Students are encouraged to do something to gain work experience from the very start of their studies. *"For my first year students I would say to them, 'You're in day one, year one of your degree. Picture yourself in three years' time. Where would you be?' Start aspiring to that role or start looking at what it's like."* Those who can't do a full year placement, are encouraged to do shorter internships. Those who can't do these are encouraged to do volunteering or industry-based project work. The result is that most students have had some professional experience by the time they graduate.

### Increase student confidence

The School recognises that some of its students lack confidence but participating in these activities has really helped to address this. Both the School and partners have noted a change in students who have taken part. *"They develop their skills. Then when they come back, the change in the confidence level is very noticeable."* In some cases this shorter work experience, has given students the confidence to apply for the full **Year in Industry**. *"Our partners have given our students the confidence and skills set required to secure one-year placements. One of our very good students, who was working with one of our external partners, has now started a placement year with a leading company, so I'm very pleased about that. We are moving in the right direction."*

### Build local relationships

Exploring a range of possibilities for student work experience has helped the School build stronger relationships with local businesses and charities. By being able to offer low cost, low risk engagement initially, they are able to build trust, which often leads to further engagement and stronger partnerships. This local engagement is central to the University's mission. *"We want to be an enterprising civic university, so our emphasis is very much supporting our local community"* as well as providing further opportunities for their students.



## Showcase

### Summer internships: University of Southampton

This Showcase highlights how one university has addressed the challenge of finding an alternative to the full year placement, with particular focus on the twin issues of ensuring students graduate with strong work experience and on building relationships with employers.

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## Overview of the practice

### Context

Electronics and Computer Science (ECS) at the University of Southampton is one of the top departments in the UK for graduate employment in Computer Science. They have strong industrial connections, facilitated by their full-time Senior Fellow for Partnerships and Business Development, Joyce Lewis. Joyce is responsible for supporting students in gaining work experience and graduate positions, but her role is much wider than this, also liaising with companies on research opportunities and commercial exploitation of ideas.

Many students in ECS at Southampton are doing a four-year MEng degree and this makes it more challenging to run a traditional one-year placement. *"A lot of [our students] are doing a combined Masters degree and so to add an industrial year onto that makes it a five-year process."* ECS therefore emphasise summer placements as a great way to gain industrial experience and, in fact, have only recently introduced a full Year in Industry, which is also particularly valuable for international students. *"We started that off particularly for international students because it means that they can have a year in industry and get paid for it as part of their degree."* While the expansion of this programme will also attract UK and EU students, the majority of students – 80-90% – will instead do up to three summer placements over the course of their degree.

### What they do

Summer placements at Southampton are encouraged and facilitated but are not compulsory or assessed. Joyce's role is to facilitate the flow of information about opportunities between companies and students. *"My role helps ensure that our students know about the opportunities that are available to them and that companies have an efficient way to get their opportunities in front of the students. I aim to ensure that the students have as wide a knowledge as possible about their opportunities, but also to ensure a really high quality of opportunities for them too."* She also advises students as they think through their career path, making sure that they consider internships that will



help them achieve their goals. This includes helping them to adjust when the experience they have had proves not to be for them. *"I'm always available to talk to them. Like yesterday there were two students who came in to talk to me who had done internships and then had thought, 'Actually this isn't necessarily what I'm looking for. What other options are there?' [They] just wanted to talk through that in terms of the companies that we work with and the opportunities they can provide."*

ECS organizes three company talks a week over the autumn, for companies to tell students about opportunities on offer. *"Between now and Christmas, every Monday, Tuesday and Thursday evening in the department we have a company talk. .... Very often they'll be given by a graduate of [our department] who comes back and gives a talk for their company.... I advertise this to all students in the department. They will tell them about the company, the training opportunities, what kind of prospects they might have, and the kind of challenges they deal with every day."*

Students are then responsible for applying for the opportunities they want, although they can get a CV checked or attend workshops to help them with this process. There is also wider support available from the University's career service.

Summer placements are all paid but are not assessed and there is no formal monitoring of students while they are with the company, although they can contact Joyce if they have any issues. However there is a high level of informal contact with the companies involved. *"I'm in contact with these companies on a regular basis because there are various points in the year where they would be coming here or I might be visiting them. With the ones that we have the closest connections with, I'm probably in contact with them at least once a month."* This provides opportunity for feedback on how the internships have gone. *"The reports are always very, very good."*

Many students will undertake three summer internships over the course of their degree, giving them a wide range of work experience, giving them a great range of experience on which to base their final choice of graduate employer. *"It's not uncommon for students to do three internships with different companies. This probably gives them as much experience as doing a year out."*

## Collaboration and Partnership Opportunities

### ECS - Electronics and Computer Science

The largest and most distinguished School of its kind in the UK, ECS has a global reputation for its education, research and enterprise, and our students are much in demand by employers for the knowledge and expertise gained in their degree programmes. Our research environment is dynamic and multidisciplinary, and we engage actively with business and industry to ensure the industrial relevance and take-up of our activities. We welcome partnership approaches and strategic collaborations across our education and research programmes. Some potential engagements are described below; please contact us for further information.

#### ECS Careers Hub - careers and employability

| Engagement   | Description  | Timeframe   |
|--|--|---|
| <b>Careers Hub Laureate Programme</b>                    | Careers Hub Laureate companies provide sponsorship and support of at least £5000 per annum to ECS students and/or student activities   | Laureate companies can be inducted at any point in the year.                |
| <b>Company Affiliates Programme</b>                      | Company Affiliates support ECS students by offering graduate roles and internships. Your company logo and a short description is displayed on our Careers Hub website: <a href="http://www.ecs.soton.ac.uk/careers/companies">http://www.ecs.soton.ac.uk/careers/companies</a> | Companies can become Affiliates at any point in the year.                   |
| <b>Attendance at ECS Careers Fair</b>                    | The ECS Engineering and Technology Careers Fair is the highlight of our annual careers programme, attended by all our students, keen to engage with around 80 leading companies.   | The 2015 Fair takes place on Tuesday 10 February. Early booking is advised. |
| <b>Advertising graduate roles and internships</b>        | Roles are advertised through our Careers Hub website and by email and social media such as Twitter and Facebook.   | Optimum times are between mid-October and end-June.                         |
| <b>Company events / presentations / drop-in sessions</b> | Presentations can be arranged in ECS buildings during term-time. ECS societies also organize career talks. Drop-in sessions and other events can also be arranged.   | Optimum times: mid-October to mid-May.                                      |
| <b>Mentoring students</b>                                | ECS provides a number of mentoring programmes supporting our students in their academic work, project work, and enterprise activities.   | Mentoring is ongoing throughout the year.                                   |

#### Sponsoring our students - academic and project work

| Sponsorship                           | Description   | Timeframe   |
|---------------------------------------|---|---|
| <b>Scholarships/ bursaries/prizes</b> | Annual bursaries and scholarships provide high-profile support to our leading students, sometimes involving summer work placements. We are happy to help administer these.      | Throughout the year, but preferably co-ordinated with academic calendar.                              |
| <b>Group Design Project</b>           | Our flagship project: Four/five students undertake a 10-week intensive project in the final year of the MEng degree, producing a system or device and a report of 25,000 words. | Outline project proposal by end-May for project to run between October and December.                  |
| <b>Individual Research Projects</b>   | Third-year undergraduate and MSc students undertake an individual research project over two semesters. The MSc project can be undertaken on-site with an industrial partner.    | Proposals to be received by end March for the third-year project and end October for the MSc project. |
| <b>Course Modules</b>                 | Many undergraduate course modules are project-based and particularly suitable for sponsorship prizes and company involvement.   | Discussions and proposals to be received in the summer before the academic year begins.               |
| <b>Providing lab equipment</b>        | Students benefit from the opportunity to use specialized state-of-the-art software or hardware in their labs and course modules.  | Ongoing throughout the year.  |

## Enhancing the student experience

| Engagement                 | Description  | Timeframe  |
|----------------------------|--|--|
| <b>Student societies</b>   | Fourteen student societies cover a wide range of interests across ECS. Opportunities exist for sponsorship, engagement through joint activities and events, and the provision of specialized equipment.  | Throughout the year, but society activities happen largely during term-time.   |
| <b>DevECS</b>              | Our student development activity undertakes a range of software, Web and app development for external clients, providing paid employment for student developers and project managers.  | Throughout the year.   |
| <b>Student Robotics</b>    | This annual robotics challenge involves sixth-form schools and colleges in the UK and beyond. Sponsorship opportunities exist for events and equipment.  | Challenge begins in September and culminates in April.                         |
| <b>Outreach activities</b> | The ECS outreach team aims to communicate the excitement of STEM subjects and careers, and improve diversity. The team also supports and collaborates with our student outreach societies. Sponsorship opportunities exist to support our activities.                    | Throughout the year.   |
| <b>Student development</b> | Activities include mentoring, leadership training, enterprise advice, careers and employability advice. Collaboration, support, and sponsorship for all these activities are welcome.  | Throughout the year.   |
| <b>Events</b>              | A wide range of events take place in our labs throughout the academic year, including coding challenges, enterprise/start-up events, design and build, and student conferences. Opportunities exist for event plans, sponsorship, and provision of speakers and mentors. | Throughout the year, with planning cycles of a minimum of six weeks preferred. |

## Research partnerships and consultancy

We have strong links with business and industry, driven by our commitment to ensure that our research finds applications in real-world technology. Our academics have direct experience of working with a wide range of organizations and our portfolio of clients is diverse and continually expanding. We can provide short- or long-term solutions and programmes through a mixture of formal mechanisms, joint research, consultancy, tailored programmes, shared facilities, and strategic collaborations. With over 500 researchers in ECS, our capabilities are wide-ranging. Illustrative opportunities are described below, but others are likely to emerge in partnership discussions. We look forward to continuing the conversation.

| Engagement                             | Description   | Timeframe   |
|--|---|---|
| <b>PhD collaboration and funding</b>   | Opportunities for sponsorship of PhD students exist in our Centres for Doctoral Training and across all research groups in ECS. This often includes internship periods in your business during the course of the PhD research.  | PhDs can begin at any time of the year, but cohort-training (as in the CDTs) begins in October each year. |
| <b>Industrial CASE Studentship</b>     | Administered by the EPSRC, Industrial CASE provides funding for PhD studentships where businesses take the lead in arranging projects with an academic partner of their choice. <a href="http://www.epsrc.ac.uk/skills/students/coll/icase/Pages/case.aspx">http://www.epsrc.ac.uk/skills/students/coll/icase/Pages/case.aspx</a>   | Application process runs from April through October.  |
| <b>Knowledge Transfer Partnerships</b> | Europe's leading programme helping businesses to improve their competitiveness and productivity through the better use of knowledge, technology and skill within the UK Knowledge Base. These are medium-term projects core to the strategic development of a business, involving researcher secondments and joint supervision. <a href="http://www.epsrc.ac.uk/innovation/business/schemes/Pages/knowledgetransferpartnerships.aspx">http://www.epsrc.ac.uk/innovation/business/schemes/Pages/knowledgetransferpartnerships.aspx</a> |   |
| <b>Industrial secondments</b>          | ECS Research Assistants can be placed in your company for a period of up to a year to support the commercialization of research outputs.  |   |
| <b>Consultancy and facilities</b>      | ECS can provide focused expertise to address specific problems posed by the company. Our specialized facilities include Europe's leading research cleanroom complex, and the Tony Davies High Voltage Laboratory. Access to these facilities is available for specific research needs.  |   |
| <b>Applied Research</b>                | Our applied research centre, IT Innovation, is advancing a wide range of information technologies and their deployment in industry and commerce: <a href="http://www.it-innovation.soton.ac.uk/">http://www.it-innovation.soton.ac.uk/</a>  |   |

For further information contact Joyce Lewis, Senior Fellow, Partnerships and Business Development ([j.k.lewis@ecs.soton.ac.uk](mailto:j.k.lewis@ecs.soton.ac.uk); 023 8059 5453); John Darlington, Business Development Manager ([jd@ecs.soton.ac.uk](mailto:jd@ecs.soton.ac.uk); 023 8059 9045); Dr Reuben Wilcock (Principal Enterprise Fellow; [rw@ecs.soton.ac.uk](mailto:rw@ecs.soton.ac.uk); 023 8059 9321).

## Key characteristics

### Relationships with employers

A key factor of the success of the ECS summer internship programme is the strong relationships the department has with employers. Most of these companies initiate contact with ECS, either because of its position as a top department, or through the virtuous cycle of alumni seeking to employ students. *“When students graduate and go out to companies they tend to want to bring their company back. We have an annual career fair and every year there are three or four new companies who’ve come because they had employed one of our students and then the students have said, ‘Oh, you ought to go to the careers fair to employ some more!’”*

But the ongoing relationship is built through regular contact and a flexible approach to facilitating what companies need. This includes facilitating access to other staff and developing collaboration opportunities. *“The relationship is not just about employing our students. Sometimes a company will come back and say, ‘Well, actually we’re really happy that we have a good relationship with you about graduate employability, but we actually want to get involved in your research as well?’ Or, ‘We want a PhD student rather than an undergraduate’ or, ‘We’ve got a particular piece of work. Is there someone in your department who can advise us on it?’”* Joyce is proactive in encouraging wider collaboration, providing companies with an information sheet on the opportunities available.

### Student initiative

While ECS facilitates information exchange about summer placement opportunities, it is up to the student to take the initiative to secure their internships. The department nurtures this enterprising approach in its students. *“In terms of this department, we’ve always been very entrepreneurial and enterprising and we’re a leading research department. The students come in very, very driven to do really good high levels of technical work. Also, because it’s a very social department we have a very lively social environment. They tend to become really quite self-confident, able to think about new ideas and to come up with their own approaches and ways forward”*

It is also this attitude that makes them attractive to employers. *“That’s one of the reasons why the companies like them so much, because they don’t just have fantastic technical skills, but they have good social and problem-solving skills, which are really in demand as well.”*

## Benefits

### Variety of experience

Students undertaking summer placements gain a significant variety of work experience, particularly where they have placements in different companies. This helps them build confidence. *“Once they get out into a different environment they can actually see that they can really hold their own. That’s absolutely brilliant as well. That’s why it’s one of the reasons it’s good for them to get out and go to other places in the summertime.”*

It can also help them to make decisions about their future employment. Some will undertake short placements and decide that this work is not for them. *“[They come back and say] ‘I thought I wanted to do this. I don’t want to do this at all. What other options are there?’”* Others will use it as a platform to get a permanent job offer. *“It’s very much looking towards their career, getting good experience that they can put on their CV, possibly getting a job offer at the end of it. That quite often happens, that they will come back having done their internship before their final year, they’ll actually come back with a job offer.”*

Having a range of possibilities and being able to experience several different workplace environments and cultures helps students to be more discriminating about the options open to them and to benefit from the knowledge, experience and skills that they are acquiring. *“They’ve got time to get other experiences. I think it’s trying to ensure the students are well informed and discriminating about what they can do with their skills and helping them find the best way to do that.”*

### **New opportunities for collaboration**

The collaborations between ECS and industrial partners is always evolving. *“I’ve always felt that in this area you can’t just stand still. You’ve got to keep on thinking of new ideas and new ways of being in touch with people and giving them new opportunities to come in and work with you.”* The latest initiative, *Future Worlds* (<http://www.futureworlds.com>), provides a platform to bring together companies, innovators, alumni, academics and students in exploring enterprising ways of working together. *“[It] is really bringing together all of these activities and directing it towards enterprise and new ideas – bringing in the companies and the alumni who’ve gone out there and been fantastically successful, and aiming to inspire everyone, especially our students, as to what the opportunities and possibilities are out there.”* This may be getting students to work with companies who have ideas to develop, or getting companies to support and even invest in student ideas. *“We want to create a real excitement around the possibility that the students have got these fantastic skills and that we can support them to go and do new things – including providing mentoring and partnering with companies and alumni who’ll come back and work with us and create new opportunities here.”*





# The Employers' View

**With placements, there are years where you do feel like you're looking for the needle in the haystack.**

To complement the research undertaken with Universities we conducted a small study on employer experiences with internship/placements, passing through the looking glass of employability to see the issues from the other side. These employer voices are likely to be of interest to Universities, and they may be of wider interest to employers in the same "sharing-practice" paradigm as the rest of this report.

We were keen to sample from a range of employers, from large corporates to SMEs, from institutions with computing at the core of their business, to those who need IT to support their primary functions. Our aim was to examine how placements and recruitment work within companies at different scales and with different missions. We selected seven companies and conducted semi-structured interviews around a common protocol. Each interview lasted about an hour and was professionally transcribed.

We talked with two SMEs: Ideaworks [IW], a custom electronic design and installation company with a total staff of about 130 and a computing team of about 10 and Kinetic Solutions [KS], a company supplying accommodation, conference and hospitality management software employing about 90 people. We talked with staff in two UK corporate companies: the Practice Manager of New Entrants Programmes at Group Business Services of Network Rail [NR] and a Head of Function at Lloyds Banking Group [LBG] with responsibility for IT Trainees (Graduates and Apprentices). We talked with staff in two computing-focussed companies, the Infrastructure Technology Outsourcing (ITO) UK&I Workforce Strategy and Development Manager at Hewlett-Packard [HP] and the IBM UK Schools & Universities Attraction Manager [IBM]. We also interviewed the Chief Executive Officer of ectalent [ECT], a company specialising in providing one-year undergraduate student placements in high-technology companies in the United States.



## Relationships

In all cases our respondents had close relationships with a small number of Universities.

*I'd say on a regular basis [I deal with] three [Universities] ... I'm a bitter, worn person in terms of the experiences I've had at different universities (laughter). But three are probably the regular ones now ... we've built decent relationships. I think that really works well. [KS]*

*I've got relationships I've built over the years with several universities and I work with their career services managers or the tutors. Some of the tutors are on the science courses specifically. Having said that, in some cases, the Universities approach me directly [NR]*

*In fact we don't actually go looking anymore, the University comes knocking on our door every year. We're always taking interns every year. I don't have to think about it now, it's great ... [IW]*

*We've built very close relationships with five Universities [HP]*

*The universities we're already in contact with, and work with a lot, we're very happy with. But we're always happy to work with a wider set of Universities if and when they reach out. [IBM].*

*We recruit students from around twenty universities worldwide ... Nearly all the placements that we do, let's say 98% or something, are from those universities that we know. When I say 'know' I mean we have some kind of relationship with them. I have certainly visited there and/or met certain members of staff ... [ECT]*

Noticeably, in four cases the employer was either an alumnus of the University that they were closely working with, or they used alumni relationships as a recruiting strategy.

*We've deliberately not sought relationships with individual institutions across the UK ... instead we have left that to the individuals that we've recruited (or other LBG employees) to go back to their alma mater and spread the word. [LBG]*

*We look at alumni. We look at rankings/tables, we look at how well universities do in computer science and business, we look at gender diversity because, I think like a lot of companies do, we try and ensure we are in front of female applicants as well as male applicants. We then have a representative within IBM who looks after that university from a recruitment point of view. For example, for Kent, we have an IBMer who's an alumna from Kent ... Although [she] will be the named Recruitment contact for the University she won't necessarily go to every event herself. She has a really big team of other alumni who've said, "I'd love to go back whilst I'm on my placement" or, "Now I've graduated..." [Representatives] are not necessarily alumni, but the majority of the time they tend to be. [IBM]*

This gives another dimension to the use that Universities see in their alumni with respect to employment (see Employability Challenge, p11, Brunel and Kent Showcases p25 and p60).

These employers also talk of trying to form relationships with Universities and the problems and failures they have encountered. One way in which they present these issues is a direct parallel to Universities' feeling of institutional bias (see Institutional Bias, p4) where they perceive that employers only talk to 'top tier' institutions. Employers experience similar indifference.

*So in the early days I did actually try and talk to people like Manchester, Warwick and Imperial. I suppose, you know, you've got to realise when you've got absolutely no chance at all of creating any impression. You know, the average Imperial student can just wander off into The City ... so you kind of think, 'This is just a fruitless exercise.' So you quickly learn that you've got to hit the relevant scale. [KS]*

*Internally there was a bit of discussion around, you know, where do we target? We're not going to target the top ten universities because, you know, these individuals are much sought after and tend to be targeting themselves at Executive level roles. With the IT Trainee recruitment/attraction we have undertaken we are focused on developing Trainees into the middle and senior management roles [LBG]*

*Yes. One [top-tier University] wasn't as accommodating as the others. We found that their feeling was that we were lucky to be able to be going to talk to their students. And we found that quite challenging. Because they just weren't that keen to have us there – amazing really, because the opportunities we've got at HP are phenomenal – perhaps they just thought that we made printers and laptops. But to be honest because we've got so many other people that are really happy to engage with us, we spent one morning there and then decided that we would leave it at that for now. It's quite time consuming and I do like to take Senior Managers in to do the presentations – and that one was a little bit embarrassing. [HP]*

*If you take a crass example everybody would love to deal with a top-tier university like MIT and everybody tries to deal with MIT. But MIT being top of the bunch in the United States is very confident of their value and they are not particularly motivated to go the extra mile to make it easy for people to deal with them ... Working with MIT would be ten times harder than working with a university which isn't MIT. [ECT]*

As well as feeling institutional bias, employers also directly experience the impact of student expectation of the sort of company they want to work for and the sort of work they want to do. (See Calibration, p50).

*... the inevitable perception that students have that, you know, big against small. Everyone wants to work for Google, Apple, Microsoft. What value could a small company or a company they haven't even heard of ... what could that actually do for them? I think that is a hard battle to win. [KS]*

*This is where I think there is a little bit of disparity between organisations and financial services like the banks and other, sort of, social media, web-type organisations. Universities and individuals want to do a lot on social media, on mobile, on gaming, whereas we then need to take those individuals who have – possibly – done all these sexy things at University and then say, 'But I want you to work on a 25-year-old legacy application.' So there is a bit of selling there. We're finding that quite a number of the academics are focused on the 'Digital World' and careers for their students in that area. We appreciate that is an area where organisations are crying out for new recruits and for them to be almost job-ready on day one. Whereas we need them to be job-ready more in terms of the life skills and then give them that additional technology: often we're giving them older technologies. I don't think we've [employers and educational establishments] cracked that yet. [LBG]*

A second problem that employers discuss in regard to forming relationships with Universities is in lack of personal contact, or lack of interest in or care with, that contact.

*I was trying to strike up a relationship with [that University] which I know is one of the peers, if you like, of [this other University that I have a close relationship with]. Finally after, you know, dozens of emails, I finally got through to somebody and they said, 'Oh yes, we can do a session.' I went all the way from here to [their town], which is a good 150 miles, for a half hour session and there were six students in the room. Three of those weren't computing students ... it was just like, 'Oh that was a quiet week, that's a shame. Next week it's IBM so it'll be busy.' [KS]*

*I am also an alumnus of [another University]. Over the years I have made repeated attempts to interest in [that other University] in doing placements and let's just say I've failed miserably. Just because I am an alumnus doesn't necessarily make it work. [ECT]*

The closer the contact is to the discipline, it seems, the more it is productive, and the more it is appreciated.

*What I've found over the years, which may not correlate elsewhere, I feel when you're closer to the department I think there's a bit more engagement. I think careers services have such a contrast of needs and expectations and different pushes and pulls on their time that it's very hard to jump up and say, 'Hello?! We're a company that's interested in X, Y and Z!'. It is quite frustrating. [KS]*

*Some career services seem to go through the motions; they know what they should be doing to support their students, but sometimes struggle to achieve it ... I've managed to build a relationship with a mix of staff at each of the universities. What I've done is become the lynchpin between the faculty and the career service. The University departments don't seem to be collaborating enough. [NR]*

There are some things that Universities do, as a fairly standard offering, that are not seen to be useful in promoting a successful relationship.

*I must admit now, if I try to engage with the university and they only suggest two different types of graduate fair and a website to put your ad on then I think I would be a bit more cautious about what we'd do with them. [KS]*

*We do not do campus recruiting, we don't show up with a booth, hand out goodies and advertise. The mechanism that we use is to build a close working relationship with the faculty. [ECT]*

The quality of the University-employer relationship also depends on the qualities of the individuals involved, as well as their organisational position and focus. Good people make good things happen, whichever side of the fence they sit on.

*[The relationships were built] by me targeting universities. The first year I was doing this particular role ... I looked at the previous two years, where we were getting the grads from, which Unis they were coming from. I took the top four and approached them and asked if I could come and speak, and present. It went from there. Then one particular deputy director from a career service at one particular University drove actually all the way from [A] to [B] where I was for a regional meeting. She targeted me and said, 'Will you come and speak at [my University]?' For the last three years I've spent a week [there] doing lots of different skills workshops. We see probably 150 to 200 students over the whole day ... the last three years we've had a graduate from [that University]. [NR]*

*I gave a talk there [a top-tier university]. When I started talking to the staff and I found that they were all very enthusiastic about working with us even though they are a top school, so they are not arrogant, which is refreshing. A lot of that spirit flows down from the personality of the Dean of Engineering himself ... When you find somebody like that it is wonderful to work with them because they make problems go away in the interests of having good things work out for the students. [ECT]*

The effort spent in building close relationships can also save employers' time and effort, although it is clear that the quality of the relationship can't be predicted in advance and success can only be evaluated in retrospect, in how many students are recruited and the quality of those students, in how well they fit the needs of the employer and how well they perform in their role.

*I try to stick with [one University] ... because so many times we've discussed recruitment openly. They have a sense of what I'm looking for. It helps me very much. It's a big win. [IW]*

*I will also speak to the Unis and say, 'This year I'm looking for – this is where our shortage is.' I'll get them to perhaps target different students that they've got relationships with, speaking to career services about them. They will invite them and say, 'Network Rail are coming, you ought to go along and have a listen.' [NR]*

*So yes, I think it is quite hard to pin down what absolutely makes that right institution. I think once you've worked with them a while, I think it is the testament to the relationship and, brutally, the students that come through. I think [that University] is one of the ones that I feel there is probably the most consistent standard of product – if that's the right word – whereas [this other University] probably strikes me as one where you really almost can't predict. It really does feel like you're almost putting your hand into the bag and just drawing out a random ... But they have a very slick placement process. [KS]*

## Selection

Selection (for employers) is the obverse of application (for students). All these employers take selection on technical capability for granted: they all expect it, and they all test for it.

*Well I use their CV to gauge what course they've done and then I go and look at the University to try and find the curriculum to see if I can gauge how much science there was. I tend to find the ones that had just done 'computing' tend to be very hands-on and less theory, we tend to be more theory-led, because we're doing the research. [IW]*

*Then for whatever the role is, whatever the competency. Some form of technical competence across those areas. [KS]*

*... people would have to get through a number of online assessments and an online interview and a Skype interview before they would get brought to an assessment day ... we go through a fairly standard assessment day where we'll do a competency-based interview, we'll do some logic tests, we'll look at their academic record followed by a group exercises to assess how they interact with others. We have an acceptance that candidates will have the necessary 'learning capability' so focus on the wider capabilities we believe are required to function and develop in large scale organisation like our own. Because, you know, large-scale delivery is about team working rather than individual working. [LBG]*

*"Once we've connected with the students, we go through a rigorous assessment process. It's an online application, situational judgement online testing, followed by numerical and verbal reasoning. We sometimes conduct video interviewing as well so we can see their communication capabilities [in addition to their paper qualifications]. Then once they've got through all of that, they're invited to a final assessment centre day where typically we would put them into a group activity, ask them to do a presentation style activity as the case may be and then a face to face competency based interview. From that a decision is made." [NR]*

Employers use many different kinds of evidence to help them reach their decision, which they find of varying value.

*It's trying to counter this whole mentality that, more and more, every University has, which is almost like a filtering of CVs, making sure that people are at the right level and everything else. It makes it very, very hard from an employer's point of view because you are literally seeing the placement officer's work rather than the person's work. [KS]*

Once the 'simple' hurdle of technical ability and technical suitability for the position has been passed, then other qualities become important in assessment. These often relate to "soft skills" such as communication and team working (see Soft Skills, p33) or less tangible personal qualities, such as resilience, attitude and confidence.

*First and foremost it's a Java proficiency, but that's where the computer science stops really. In terms of the rest of the things I'm looking for are ... their attitude, their ability to focus ... my main focus is to gauge 'How would you fit into the team?' Being able to fit in the team and disassociate yourself from the code that you're writing. Which is probably my main bugbear. We try to see if they've got an ego in the interview, because that won't suit us: everybody discusses everyone else's code. There should be no way that you should be taking it personally. [IW]*

*So we find some people who are hugely bright at coding but not necessarily have all the life skills that are required. Sometimes that's not an issue, but we need to have a little bit more of certainty around where and how they will fit in to our organisation ... the ones who are slightly quiet, you make allowances for that ... But the ones that are rude, you would tend not to make allowances for because it does, sort of, ring some alarm bells around how they would react in stressful working situations. A big part of the assessment day is to allow them to interact with a range of LBG personnel as well as watching how they interact with their peers – it's amazing how much we pick up from simply observing and having chats over coffee or lunch. [LBG]*

*... they do a presentation where they stand up in front of maybe ten of the rest of the group and a couple of managers. They're given the subject matter about four or five days in advance. Generally, we don't ask them to present on something they already know. We pick a topical subject that's in the news at the time so that we can see their ability to go away and research a subject ... (Laughter) ... we used to let them do it themselves and they all picked their dissertation, which they knew off the back of their hands ... From that, we're looking at their verbal presentation skills, their ability to research, and their ability to collate data onto a PowerPoint deck and present it. That's quite an interesting piece of the process and potentially one of the bits that they find the hardest, I think. [HP]*

*... [we] invite them to the offices ... So we expose them to a whole range of people in a range of ways as well. So some of its very formal discussions, some of its technical. But equally lunchtimes, you know, we try and make it as varied as possible ... One belief I definitely have is that if somebody's here for a day, it's very hard for them to not trip up if they have a failing, if you like. It's going to come out in some shape or form. [KS]*

## What they do in their placement year

In every case, for these employers, placement students are treated as 'normal' employees, and put into a 'real' job.

*They will typically spend a year in the same role. They don't rotate across different areas which the graduate programme offers. Towards the end of their year they may want to go and shadow some of the roles that they've worked with over the year and if they're interested in that space particularly. They are getting used to the world of work, getting into a routine, building and developing a work ethic and building their network of contacts. [NR]*

*They're taken through exactly the same on-boarding as anybody else. So the same induction, same objectives. They're set PDPs, they're set what we call talent review process. Yes, they're instantly into the job. There's no, kind of, little special projects or anything like that. [KS]*

*The first four weeks we take them through a four week set of Android tasks, the same tasks we've done for everybody ... They've got plenty of time, there's no time frame on that, they can work through it, most of them tend to blast through it because they're very capable ... then we get them on their first full project. [IW]*

For most of the employers we talked with, the work students do in their placement year is an evolved process. Some have aligned placement programmes with graduate programmes, others have tried out different models over time.

*We used to try to do three months of this, three months of that, three months of the other ... they weren't finding the depth of something. You know, they're just getting used to it and then they're moving on ... I think we were trying to do something that gave everyone a fantastic overview of the whole area. But it was just skimming. [KS]*

## How they are evaluated

Just as placement students undergo the same recruitment procedures as standard graduate hires, and just as they are assigned the same work, so they are evaluated in the same ways.

*Over their year the placements will have monthly three-way check-in meetings with myself and their assignment manager. They have to complete a check-in form which then forms the basis of our discussion. They are treated like every other employee in the organisation which means they have a half year performance review and an end of year performance review. I also conduct a peer review. Usually at half year review we know who is on track for a conditional offer to return on our graduate programme and who might be struggling. It's not very often that I have to have the conversation around performance issues. Every individual is fully supported which makes a difference. Clear expectations are set at the beginning of their year with us, so they know what they need to do. [NR]*

*Then we'll do a 1, 3, 6 and 12 month review with them ... I've talked to the seniors at this point about how they're working with them, how they got on with their project and stuff like that ... very rarely do we have to stop what we're doing because we've got a major problem with them. Maybe because they're doing everything slowly, but they're usually fine ... if they're still doing [problematic things] ... then it gets more serious. My words get less fluffy, so they start to realise I've been polite up to now, but it's getting a little bit serious. [IW]*

*For most roles, when the graduate, [placement] student or apprentice comes into IBM as well as having a task manager for their day to day activities they also have what we call an early professional manager – EPM. That person's day job is to look after the people coming in, the new students, grads and school leavers ... All the feedback they get ... all comes through their EPM ... Every three months they'll get a formal sit down with their EPM. What the EPM would do is they would reach out to a number of us, so perhaps the task manager and maybe a few other people who the students work with, for some 360 degree feedback. So it's very inclusive. The EPM will deliver it to the student but they would've collaborated with various other people. [IBM]*

## Employers benefit from placements

Not all employers favour the one-year relationship.

*We're focused on apprentices this year so we won't be bringing any graduates in – although we are piloting a degree apprenticeship. It's been a difficult and deliberate decision ... we are strongly of the view that to become a subject matter expert on our applications is a three to five year journey for someone starting straight from University. We will have them productive within a few months, under some supervision, and they will also understand a lot about how our systems function, become knowledgeable in terms of the solution, and be able to act on their own across the whole solution. You know, they can quickly become proficient in a small part of the solutions but ... if we are growing subject matter experts then it's probably a three year journey that we felt we were on. [LBG]*

However, there is no doubt that these employers highly value taking placement students into their company, and not just for the students' benefit. There is bottom-line commercial value.

*Our entire ability to build a successful business is based upon our being able to maximise the client satisfaction by providing them with outstanding students who can work for a long-enough time. We prefer one-year placements because this not only gives the students more time to learn things, but it gives them a meaningful opportunity to make an impactful contribution to the company's business. [ECT]*

*I suppose the cynical side of it, you could almost argue that a placement is a year's interview, isn't it? [KS]*

*Although we now focus on apprenticeships, some of our best people that are still in our organisation joined us in the early '90s from sandwich year students ... that gave organisations a year to get to know the individuals and the individuals a year to get to know the organisations. [LBG]*

*This year we've got 100% returning placements so I've got 6 returning this year and bringing in 10 grads. I've got 4 new faces and 6 are returns ... I'm saving 50% on recruitment costs. [NR]*

Although some employers remain reluctant to take on the opportunities placements offer.

*I suppose that is a frustration ... because, obviously, I know a fair amount of business owners. When I talk to the business people ... about student placements, I'd still say for the medium sized business, seven, eight out of ten are very dismissive, almost to the point of not interested. [KS]*

## Summary

It would not be possible to draw generalised conclusions from this data. Nevertheless, we believe this section of the report indicates the benefits that employers see in giving work experience to undergraduates. It is also suggestive of things Universities can do to promote placements and to build employer relationships, or strengthen existing ones.





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