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Taking action with skills

Skills development and hiring practices in higher education and early careers. A review and call for collaboration.

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A REPORT THAT REVIEWS EARLY CAREERS SKILLS HIRING AND HIGHER EDUCATION DEVELOPMENT AND PROPOSES FURTHER SECTOR COLLABORATION TO SUPPORT STUDENT SKILLS DISCOVERY AND DEVELOPMENT.

Contents

Acknowledgments

Why another skills paper?

Three accelerating forces are changing the shape of students' careers and the work they will do. The need for collaboration on skills identification and development across our sector, for the benefit of the students we support and hire, has never been greater.

1. A fundamental shift in the skills most important to early-in-career success is underway. From software development to legal work to content creation to business development to financial reporting, the development of generative AI is reducing the complexity of technical skill and knowledge required in many entry level roles. The relative importance of behavioural skills, a learning mindset, and the capacity to adapt and innovate is increasing.
2. A long-term decline in birth rates means that fewer young people will enter the workforce in the coming years, so employers need to adopt new strategies to hire, train, re-train and retain talent.
3. Many employers now recognise the importance of a skills-based approach to hiring and development. They are adopting approaches across the organisation that focus on performance-in-role and level the playing field for all employees.

In the UK, unlike in markets such as the USA, many employers of students already take a skills-based hiring approach because they rarely recruit by subject discipline[1].

Skills-based organisations arguably go further by:
a) Designing assessment and selection strategies to take full account of skills and potential in the recruitment process
b) Building internal skills assessment and upskilling strategies to increase employees' flexibility.

McKinsey's 2022 paper, "Taking a skills-based approach to building the future workforce", argued that skills-based job postings resulted in a substantial increase in applications from a broader set of workers, and that hiring for skills is five times more predictive of job performance than hiring for education and more than two times more predictive than hiring for work experience.

For the last three decades, employers, educators and governments have produced white-papers, reformed education systems, created qualifications, redesigned learning and development systems – all to solve the UK's "skills problem". Multiple skills reports from think-tanks, educators, consultancy firms and sector bodies have developed a multitude of skills frameworks, each with differing approaches and terms to describe the skills they contain.

So why produce another skills document? Employers and educators are starting to place skills at the very core of how they prepare and transition students through education and into work.

We argue that whilst educators and employers need their own approaches, energy could be focused to support student outcomes if there was a level of consensus in the sector.

[1] Only 19% of employers specify a specific subject degree(s) as a minimum entry requirements for graduates. ISE 2023 Recruitment Survey.

Rather than expend undue energy on new frameworks and theories, an understanding of foundation skills combined with sufficient sector consensus would help us align our efforts to ensure young people develop their skills. Cross-sector consensus on foundation skills will also aid the development of additional disciplinary skills requirements across multiple environments.

> '[Learning and Work Institute] analysis suggests a potential shortfall of 2.5 million highly skilled people in the workforce and surpluses of 3.1 million people with intermediate skills and low skills. This puts at risk around £120 billion of economic output.'[2]

We believe that common understanding of skills including terminology and concepts will reduce confusion and best serve the interests of students. We hope that this report can act as a stimulus to build consensus on the skills students must develop for life-long learning, skills that will enable them to adapt and flourish through careers that will change more and last longer than ever before in human history.

This report aims to develop a contemporary understanding of skills within the student careers, advice, guidance and graduate recruitment market, and concludes with five recommendations that will increase the skills capability of the students we work with.

> "Those that came before you did not have to think so consciously about actively navigating their lives through so many distinct changes, or indeed developing their capacity for transition." - **Lynda Gratton, 'The 100-Year Life: Living and Working in an Age of Longevity'.**

So what do we mean by skills?

As this report is concerned with skills, we will firstly make an attempt to define skills. Many, many definitions exist of different types of skills – soft, hard, behavioural, cognitive, digital, technical, transversal, transferable, employability, physical, foundation, to name just a few. This is confusing enough for practitioners, let for the alone bewildered students. (See appendix for an explanation of comparable skills terms.)

> **Hard and soft skills' origin story**
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> The terms hard and soft skills can be traced back to research undertaken by the psychologist Paul G. Whitmore for the US Army in the late 1960s. Whitmore used the phrase 'hard skills' to refer to skills used when working with machines. He defined 'soft skills' as those "job-related skills involving actions affecting primarily people and paper, e.g., inspecting troops, supervising office personnel, conducting studies, preparing maintenance reports, preparing efficiency reports, designing bridge structures". The terms are still used 60 years later.

[2]https://learningandwork.org.uk/wp-content/uploads/2020/02/LGA-2019_SkillsGaps_FINAL.pdf

We have classified skills into three core categories: behavioural, cognitive and technical:

Behavioural (or human skills)

The skills that underpin natural behaviours and motivations. These are the skills likely to be consistent requirements across multiple employers and jobs/roles. Behavioural skills have sometimes been labelled as 'soft skills' which can limit their relevance to only relationship skills, and wrongly undervalues their importance.

Comparable terms: *aspects of personality, personal attributes, behavioural competencies*

Examples: *curiosity, decision making, empathy, listening, persuasion, resilience*

Cognitive skills

The skills of mental capacity that encompass numerical ability, verbal ability, and logical thinking – typically developed through education but also based on innate capacity. These skills are likely to have a baseline ability for different roles in organisations, e.g. a banking role will typically require a greater level of numerical skill than a copywriting role requiring strong language skills.

Comparable terms: *general intelligence, mental agility*

Examples: *numerical, verbal, critical, logical*

Technical skills

The skills required to perform a specific task, typically learned or acquired. These are the specialised skills that are more likely to differentiate job families or skills clusters. Technical skill requirements for a job can vary significantly from sector to sector – a surgeon needs a very different set of technical skills to an accountant.

Comparable terms: *knowledge, experience*

Examples: *coding in Java, advanced excel, speaking a foreign language*

Historically, recruitment and development approaches have tended to focus on technical skills and cognitive skills. We believe there are a set of behavioral skills for students to develop that support the transition from education to all forms of employment; support both lifelong learning and a lifelong career; and provide a platform on which to build a broad range of technical and occupation specific skills.

Employability – a definition

'The skills and abilities that allow you to be employed: there will no longer be jobs for life, but employability for life'[3].

The term 'employability' has become widely used in the education sector to describe the process by which students develop their career related skills, for our purposes, the behavioural, cognitive and technical skills relevant to gaining and performing well in employment. The term 'employability skills' often acts as a catch-all to describe the full range of skills that students require to transition into work. These skills are also sometimes called transferable or transversal skills.

[3]Cambridge Dictionary https://dictionary.cambridge.org/dictionary/english/employability

Defining the skills challenge

Skills gaps have created headlines for so long there is a danger we're now ignoring both the scope and scale of the issue. Skills mismatches and shortages are a reality and impact individuals, employers and our overall prosperity. Here are four recent reports that identify the scale of the UK's skills challenge – much of it related to productivity:

a) The 2023 CBI Annual Employment Trends survey found that 71% of employers faced labour shortages.

b) The most recent Government Employer Skills Survey found that skills shortages accounted for over a third (36%) of all vacancies in 2022. Nearly three fifths of these shortages were in middle and high-skilled roles.

c) The Industrial Strategy Council's report, 'UK Skills Mismatch in 2030', found that shortages in workplace skills such as leadership, communication, negotiation, and critical thinking are likely to worsen in the next five years.

d) The OECD's 2022 report on the UK's economic outlook found that, 'skill shortages weigh on productivity… [there is an] ever-growing need for workers to update their skills, but participation in continuing education and training is low'.

> **+**
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> **Employment outcomes for all students are not equal**
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> The latest data on employment outcomes for graduates published by HESA[4] shows that graduates of Black, Asian, Mixed or Other ethnic backgrounds were more likely to be unemployed than White graduates, and that Female graduates and those with Disabilities earn less than their White, Male counterparts.

Some sector challenges are based on a shortage of technical skills (e.g. the shortage of trained doctors and nurses), and some are driven by a shortage of people available to work (where the economy is near full employment).

The UK's poor productivity stems, in part, from the skills challenge. We argue that by developing behavioural, as well as cognitive and technical skills, the ability of people to re-skill and retrain as careers develop and work evolves will create a more productive economy.

When looking at students of course, most are new entrants to the labour market who've had limited opportunity to develop their skills. The ISE's[5] data on skills highlights were the skills of student hires do and don't meet employer expectations. When employers were asked for their perspective on specific workplace skills and attributes or their recent graduate hires:

• 35% thought their levels of **self-awareness** were less than expected
• 30% that their levels of **resilience** were less than expected
• 24% that their levels of **time management** were less than expected
• 23% thought their levels of **self motivation / taking responsibility** were less than expected

As modern economies and work increase in sophistication, employers will require more highly skilled workers. It follows that behavioural, cognitive, and technical skills will become more valuable as more

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[4]https://www.hesa.ac.uk/news/31-05-2023/sb266-higher-education-graduate-outcomes-statistics/activities
[5]ISE Development Survey 2024 https://ise.org.uk/page/ise-development-survey-24

automatable skills are performed by tech, predominantly by AI. The students who develop a strong set of foundation skills should be best placed to navigate future career landscapes and have more productive careers.

Student demand for skills

As undergraduate numbers have grown (UK student numbers have doubled since the 1990s) and the cost of study and living has rapidly increased, universities face greater pressure to deliver good employment outcomes for their students. That employment outcomes are reported in university league tables has further focussed the minds of university leaders. (Graduate Outcomes measures how many students are in graduate level work or further study 18 months after graduation.)

What you study is what not always what you do

Because a graduate in the UK does not necessarily need a law degree to be a lawyer or an accountancy degree to be an accountant – what you study is not necessarily what you do. Technical skills are not always equated with degree discipline. Behavioural skills make the difference in who does, or doesn't, get the job.

To support their students in securing graduate level employment, most universities now build skills into the student experience – either optionally (employability awards are a good example), or as a course requirement embedded into the curriculum. Some have taken an institution-wide approach and defined a set of skills for all their students to develop through their studies. Others surface the skills students gain through their academic study routes and build them into a skills framework.

Employers have also invested to understand the core skills that define success for new hires – which they assess and develop in students through recruitment and development practices. Employers deploy selection tools, assessment methods, and design learning content based on research into the skills needs of the organisation. Students are hired based on these identified skill needs.

So students need the skills that the labour market seeks, and that employers recruit to – the behavioural and cognitive skills that enable students to activate their potential.

The skills-based employer

In industrial economies up until the 1980s, large, hierarchical organisations with formal career structures dominated – graduates entering such organisations would often have a lifelong career path to follow from trainee to retirement. Organisations operated 'grow' talent strategies.

As globalised, market-led economies forced employers to build flexible employment frameworks, they often adopted a 'buy' talent strategy, expanding or contracting their workforce in response to economic cycles. Covid has also transformed working practices: where many of us work, how we interact with colleagues, how we use technology, how we learn and develop. Unpredictable globalised economies and rapid technology advances mean that employers now find they can't always buy-in talent when required and many are developing 'build' talent strategies.

Many employers are already innovating to solve their labour supply issues (skills-based hiring, career change programmes, ex-military hiring). Many HR strategists predict that 'early talent' programmes will evolve into broader talent growth and retention strategies where employers hire for potential and develop capability. Grow strategies will increasingly replace buy strategies. Deloitte call this 'a skills-based model over one based on jobs'[6].

+ **Skills-based organisations operate on four base principles**

> Liberating work from the confines of the job by reorganising work as a portfolio of fluid structures, including and beyond the job

> Using skills, rather than jobs, to make decisions about work and the workforce: from who performs what work, to performance management to rewards to hiring

> Reconceiving workers from being employees in jobs to being a "workforce of one": individuals who work on- or off-balance sheet, each with a unique ability to make contributions and a portfolio of skills and capabilities that match the work

> Building a "skills hub," an engine of skills data, technology, governance, and more, to power these decisions

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Future careers will require individuals to develop a set of behavioural and cognitive foundation skills that they can deploy in a variety of roles whilst also learning technical, knowledge based skills as their careers evolve.

That we have developed a greater understanding of skills is good. That increasing numbers of employers and universities work together to help students develop their skills, either in the curriculum or through extra-curricular activities, is also good. But the world of work is now changing faster than ever before and the skills agenda needs to keep up.

How do students rate their own skill levels?

Cibyl asked over 10,000 students and recent graduates how confident they were at certain skills, they ranked their top three as:

- Problem-solving skills
- Teamwork skills
- Communication skills

The researchers were also able to map changes in perception across student year groups and beyond graduation. As students transitioned through education, their confidence grew most in data science and communication skills. This suggests that students are most likely to increase these skills as a result of their studies.

Let's not forget that studying is work – in pursuit of academic success students will develop skills that employers seek, e.g. critical thinking, analytical skills, presentation skills.

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[6]The skills-based organization: A new operating model for work and the workforce, Deloitte https://www2.deloitte.com/us/en/insights/topics/talent/organizational-skill-based-hiring.html

We correlated the Cibyl findings to ISE data on the skills employers say graduates possess most – the same three skills come out on top. This suggests a positive alignment between employer and student perceptions on the skills students posses.

But the employers' data also signals that not all students are prepared for the challenges created by a more fluid working environment. Graduates underperformed against employers expectations on self-awareness (35% reported lower skills than expected) and resilience (30% lower). Self-awareness skills help individuals self-direct their development and resilience helps them deal with challenges and change.

Our call to support young people's skill development

To work through the practical and academic arguments about the nature of skills many employers, universities and providers have developed bespoke skills frameworks.

- Some frameworks are created by mining data from thousands of job postings, some through job role analysis, some through a survey of stakeholders, some through a meta-analysis or desk research on other skills frameworks.
- Skills frameworks can be complex or simple and skills lists long or short – the EU's ESCO framework contains 24 transversal skills; Lightcast funnel down from thousands of job postings to five essential behavioural skills.

But the result of all this good work is a degree of confusion and a dispersal of effort that could be better focused on students. Similar skills are often described differently: a scan of various frameworks finds teamwork skills described as collaboration skills, or working with others, or building relationships, or social skills.

Boundaries also blur between sectors and technical and non-technical skills. Does an accountancy firm require different behavioural skills to a bank or law firm and to what degree? Are the core behavioural skills required of a medic different to those of an engineer or marketeer? At what point does the foundation skill to analyse data become the technical skill required by an actuary? Does the university of X develop a different set of skills to the university of Y? Is there a degree course that doesn't develop communication skills, teamwork skills, and analytic skills?

Arguments will no doubt persist on differences between skills, between attributes and personality traits, between a skill an individual can develop versus an innate characteristic that an individual is 'born with'. But we believe that through collaboration, we can create a consensus on the behavioural skills that students need to develop through education and into the early stages of their careers.

Through collaboration, we can create an understanding of practice between employers and careers teams that creates an optimum environment for students to develop relevant skills both inside and outside the curriculum. Through collaborative effort, we can create a movement across careers, student recruitment, and development that boosts the skills levels of all students from all backgrounds.

As Adam Grant says in his latest book, 'Hidden Potential':

"We underestimate the range of skills that we can learn and how good we can become."

Skills for the future

Skills needs evolve as work practices change. Thirty years ago, few people needed to use a keyboard and work arrived in the post. Four years ago the pandemic accelerated the use of remote working across many industries which has shifted the skills required to collaborate. Post-Covid, we collaborate virtually using Teams or Zoom rather than in an open-plan office.

Behavioral skills have been a focus for global emerging talent recruiters for several years. A meta-analysis conducted by Cappfinity on over 60 global early career recruiters, across 15 sectors and representing an applicant pool of over 2 million, shows the rise of skills such as Collaboration, Drive, Adaptability and Problem Solver over a 5 year period.

The World Economic Forum reports that employers predict 44% of their workers' skills will be disrupted in the next five years, up from 35% in 2016[7]. Employer's skill requirements are changing:

"Since February 2020, the average Teams user saw a 252% increase in their weekly meeting time and the number of weekly meetings has increased 153%.[8]"

Skills on the rise (top eight, net increase percentage in brackets)

- Creative thinking (73.2%)
- Analytical thinking (71.6%)
- Technological literacy (67.7%)
- Curiosity and lifelong learning (66.8%)
- Resilience, flexibility and agility (65.8%)
- Systems thinking (59.9%)
- AI and big data (59.5%)
- Motivation and self-awareness (58.9%)

Only two skills on the list could be classed as technical skills: technological literacy, AI and big data. It's the need for behavioural skills, cognitive skills and adaptability, that are most on the rise.

Kingston University in partnership with YouGov conducts an annual Future Skills survey[9]. The top ten future skills business leaders want from graduates are:

1. Problem solving / process skills
2. Communication skills
3. Digital skills
4. Critical thinking
5. Analytical skills
6. Adaptability
7. Initiative
8. Resilience
9. Building relationships
10. Creativity

What both datasets show is that thinking, analytical, adaptability and technology based skills are the focus of employers. And the pace of change within jobs is speeding up. LinkedIn reports that 'skillsets for existing jobs have changed by approximately 25% since 2015, and this number is expected to rise to 65% by 2030'[6] as nascent industries continue to grow.

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[7]Future of Jobs, The World Economic Forum, 2023
[8]2022 Work Trend Index Annual Report, Great Expectations: Making Hybrid Work Work, Microsoft
[9]https://cdn.kingston.ac.uk/documents/user-upload/kingston-university-83c0c7036df-kingstonreportv20digital-final-.pdf
[10]Skills First, LinkedIn, https://linkedin.github.io/skills-first-report

> ✚ "Previous waves of automation technology mostly affected physical work activities, but generative AI is likely to have the biggest impact on knowledge work—especially activities involving decision making and collaboration. Professionals in fields such as education, law, technology, and the arts are likely to see parts of their jobs automated sooner than previously expected. This is because of generative AI's ability to predict patterns in natural language and use it dynamically."[11]

Predictions are difficult to make in a changing environment. What does AI mean for early-in career roles? Will the trainee lawyer spend less time drafting contracts and more time assessing AI produced text? Will the architect of the future plug building parameters into AI driven CAD software to generate new designs? Will the skills required to use ChatGPT become as vital as Word and Excel skills?

The foundation skills on which to build a productive and successful working life

We may struggle to predict all future skill needs, but we can collaborate on a set of foundation skills, relevant across different jobs and sectors, that will equip current and future workers with the skills to flourish. We believe such a concept would enable students, educators and employers to describe and develop core skills and better match individuals to careers and roles.

- Foundation skills that support an entire career of lifelong learning, support the transition from education to all forms of employment, and support a lifelong career encompassing changing personal ambitions as well as labour market shocks
- Foundation skills that all students can develop to provide a base on which to evolve their working lives, particularly those from less advantaged and underrepresented groups
- Foundation skills that support student success by aligning the support offered by employers, educators, not-for-profit and government organisations, that help students understand and articulate their skills, that build their confidence and sense of agency

Through foundation skills:

- Students can develop an understanding of their existing skills, increase their motivation to develop further skills, and match their skills to the job market
- Educators are better able to support students through skills-based careers advice, curriculum design and employability interventions
- Employers can develop skills-based attraction and selection methods that improve their ability to hire successfully for potential, and take a skills-based approach to onboarding and ongoing development

In the long-term, a foundation skills approach aids the development of further skills as roles change and as individual career goals change. The foundation skills approach supports a broader skills structure that links to job skill requirements, development frameworks and performance indicators specific to job groups.

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[11]https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/the-economic-potential-of-generative-ai-the-next-productivity-frontier

'Skills-for-Skills' – a foundation on which to build other skills

The foundation skills approach is a behavioral skills framework based on five core principles:

1. Defining the foundation skills that support other skills to be built on and accelerated.
2. Encouraging the use of foundation skills but not prescribing how the skills should be used. (This acknowledges that individuals with different personality types and neuro divergence will activate the skills in different ways to deliver successful outcomes.)
3. The foundation skills are 'pure' and help potential to be activated – e.g. there is no single way to lead - as such 'Leadership' is not included as a skill in its own right as it requires a mix of foundation skills.
4. Are inclusive regardless of background.
5. Cover diverse work applications and are applicable to full-time roles, internships, placements, apprenticeships and other part-time or gig work across all sectors and organisation sizes.

We believe that a data-driven framework, that is designed to distil the complex into the simple and has support from industry and academia, is achievable. Skills-for-Skills could in turn benefit global society, the competitiveness of economies and the diversity of labour markets.

We note that National Association of Colleges and Employers (NACE) in USA has developed a simple 8 skills 'Career Readiness' framework, developed through desk-based research, which has a sufficient level of consensus amongst universities and employers to help challenge sector efforts around the student. Skills-for-Skills could be the basis of a similar concept.

The Skills Builder Partnership in the UK has taken a collaborative approach to develop a framework that is used by many schools and colleges.

'Skills-for-Skills' – a set of eight foundation skills

The Skills-for-Skills approach developed by GTI and Cappfinity uses a qualitative and quantitative analysis of existing skills frameworks, academic papers and resources, plus an analysis of over 100 hours of qualitative interviews with global heads of talent. Skills-for-Skills are the validated skills that are likely to be consistent requirements across multiple employers and roles. The eight Skills-for-Skills are:

SELF-AWARENESS *Enjoys understanding own behaviour, emotions, and responses to different situations*

COLLABORATION *Is energised by the opportunity to collaborate and support colleagues*

ANALYSIS *Can methodically analyse and interpret problems, numbers, and complex information*

PERSONAL RESPONSIBILITY *Assumes full responsibility for delivering on promises*

CURIOSITY *Is naturally inquisitive, constantly seeking new information*

CLARITY *Is able to effectively explain complex issues clearly to others in a way that is easy to understand*

DRIVE *Is self-motivated and pushes themselves to achieve their goals*

RESILIENCE *Is determined and has a positive attitude to overcoming obstacles*

Mass data – building beyond foundation skills

Technology has enabled the collation and analysis of millions of data points on employers' skills requirements. The O*NET system in the US contains details on 1,016 occupations. Group GTI's targetconnect platform had over 550,000 jobs posted for students in 2023.

Whilst a set of foundation skills can help people prepare for all careers, skills for different jobs also need to be understood. The EU's ESCO, US government's O*NET, and Lightcast are examples of large scale attempts to understand and define skills. All three use API technology to enable other organisations to plug into the data.

- The EU's ESCO framework is designed to deliver a common language on occupations and skills and provides descriptions of 3,008 occupations and 13,890 linked skills.
- The O*NET database contains standardised and occupation-specific descriptors across the entire US economy and is continually updated through input from employers and employees.
- The Lightcast Open Skills Library is a globally crowd-sourced library of over 32,000 skills collected from hundreds of millions of job postings, CVs, and online profiles.

Large-scale skills frameworks help organisations and individuals understand and navigate the jobs market.

Bespoke or off-the shelf – creating your own skills framework

The Skills-for-Skills approach is a high level life-long-learning concept that can underpin and map to educator and employer strengths, competency and skills frameworks. Existing or work-in-progress educator and employer strengths, competencies and skills frameworks can 'map' to it. Skills-for-Skills does not replace local skills frameworks which remain important and valid: educators and employers are not homogenous and differentiate based on a range of factors including markets served, and organisational culture and values.

So how should an organisation develop their skills framework? We have identified three common approaches:

1. Build a skills framework from scratch
2. Use an off-the-shelf skills framework
3. Develop a skills framework by building on existing research

Self diagnosis – what is your approach to skills?

- We have a framework that is agreed, loved, and used by most stakeholders who find it useful
- We have a framework but it is not used consistently by stakeholders and not universally loved or useful
- We have nothing

As we have seen, the world is not short of skills frameworks, so why should an organisation invest the time and resources to create a bespoke framework, particularly when resources and budgets are stretched? We see two strong arguments for at least an element of self-development:

1. The very process of building the framework, the engagement of stakeholders, the investigatory and analytical work required to develop appropriate content, will help ensure that the end product is adopted across the organisation.
2. Many organisations can identify a unique combination of skills that can be formed in multiple ways specific to their individual circumstances – so skills development solutions need to be multidimensional. There may not be a single solution for everyone.

> **+ Extracting employability from the curriculum**
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> Kate Daubney's innovative work on identifying the "innate employability value in a programme, subject or discipline"[12], demonstrates how existing curriculum content can be mapped to skills already developed through the curriculum.

The approach that provides the benefits of a bespoke solution without the investment required to start from scratch is to develop your skills framework by building on an existing, proven framework: to use a foundation skills framework alongside field-specific skills frameworks which link employer, to educator, to curriculum.

Benefits of the tailored approach

Using a set of foundation skills with a tailored element is a flexible approach to skills that:

*   Utilises existing proven research into skills but allows for localised differentiation
*   Is an efficient use of scarce resources and avoids unnecessary duplication of effort
*   Is future focused and enables curriculums, student support services, and employer development strategies to adjust as labour market demands change.

Figure one, on the next page, outlines a five-stage process to develop and build a skills framework that utilises existing research, surfaces skills already developed within the curriculum, and develops a unique institution-wide approach. The model incorporates existing in-curriculum work, the development of career specific modules, and allows for the continued evolution of the framework.

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[12]https://www.emerald.com/insight/content/doi/10.1108/HESWBL-07-2020-0165/full/html

Figure 1: Framework design and implementation

STAGE	CORE ACTIVITY	STAKEHOLDERS	ACTIVITY
Stage 1	Institutional buy-in	Project leaders work with institution leaders	Build the strategic case and secure sponsorship for institution wide approach to core skills development
Stage 2	Foundation skills	Project team working with sponsors	Identify skills frameworks (Skills for Skills, targetconnect, existing institutional frameworks)
		Project team working across the institution	Test foundation skills with stakeholders
		Project team working with sponsors	Define foundation skills to be built on across the organisation
Stage 3	Surfacing Foundation skills at department and course level	Project team working at department level	Map course curriculum to foundation skills framework
		Project team working across the institution	Identify existing and new skills development interventions across the student experience, academic and non-academic, that will develop identified skills in students
Stage 4	Institutional roll-out	Project team working across the institution	Embed skills framework across departments, implement within the curriculum
Stage 5+	Adoption and evolution	Project team working at department level	Layer occupational and technical skills insights on foundation skills and create feedback loops to ensure skills frameworks don't become static and dated

University skills frameworks – a patchwork of practice

To understand how universities are approaching student skills development, we asked a number of institutions[13] to describe their approach to skills frameworks.

- Over half (57%), 19% said they have some form of institution-wide skills framework in place, and another 19% have plans to develop one. Only 14% have a fully agreed and rolled-out institution-wide framework.
- Only one respondent said all academic departments fully engage with the skills debate, 47% said most do, and another 47% said only some do.
- Just over half reported engagement in the skills agenda at vice chancellor, pro-vice chancellor and dean levels.
- Careers teams take the lead in 23% of cases and student support in another 10%. Another 10% said their university does not have a skills development strategy.

So whilst we can say that skills development and skills frameworks are a topic for debate and a focus of activity at most universities, for many there is more work to be done both in terms of development and engagement.

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[13]During February and March 2024, 21 targetconnect clients completed a questionnaire asking for their insights and views on skills frameworks within their institution.

A growing trend within universities is to bring together related functions into broader directorates. Linking careers and employability, education and professional development, student success, and widening participation outcomes into broader directorates will assist wider skills interventions and help embed cohesive skills-based strategies across campus.

University of Sheffield – a skills-focused approach to student employability

In 2020, the University of Sheffield adopted an Employability Action Plan which proposed the development of a new framework of graduate skills and attributes, as the first step in the establishment of a new, skills-focused approach to student employability.

The action was to update a pre-existing, somewhat academically focused attributes framework, so we researched over 40 examples from employers, professional bodies, QAA subject benchmark statements, external reports, and other universities. Skills and attributes were noted and grouped, and we considered how to move beyond a generic, rather rigid list of skills, and make them feel more Sheffield-specific.

Consultation with staff, students, alumni and employers followed, to sense-check and seek input as we refined our draft framework, presenting attributes in three groups - academic, personal impact, and self-management.

The new Sheffield Graduate Attributes (SGAs) framework was approved and launched in late 2020, alongside a University Strategy which very helpfully made mapping the SGAs across academic programmes a specific priority.

However, we don't attempt to insert lots of extra skills into programmes - it's about recognising the skills development opportunities that already exist (as Kate Daubney's curriculum mapping work at Kings did). It's not realistic to deliver everything in curricula, and we also emphasise to students the personal development potential in extracurricular social, sport, work and volunteering activities.

What we do at Sheffield is:
- Use a curriculum assessment to kick start or embed skills reflection in year 1.
- Encourage students to recognise and articulate their own strengths, attributes and purpose - getting them to consider who they are and what drives them.
- Use the 'mySkills' portfolio tool developed with targetconnect in 2020, to help students record their activities and reflect on their skills.

The Graduate Attributes framework is just a foundation for this work. It's a way of presenting certain skills and attributes to prompt reflection, and there is no required or expected measure of achievement - we view any growth in self-awareness as a positive outcome, aiding students' self-development, efficacy and career planning.

Developing student's skills

Building a skills framework without considering how students or employees will develop their skills will limit its use. We all acquire and develop skills through a multiplicity of experiences and need to develop skills in practice. We learn new skills and adapt existing skills throughout our lives, both in education and the workplace, but the late teens and early adult period is a crucial development period.

> 'Non-cognitive skills [which include personality traits, attitudes, behaviours, mindsets and socio-emotional skills] develop across a person's lifetime and do not peak until late adulthood'. – **Jesko Hentschel**, Country Director, The World Bank
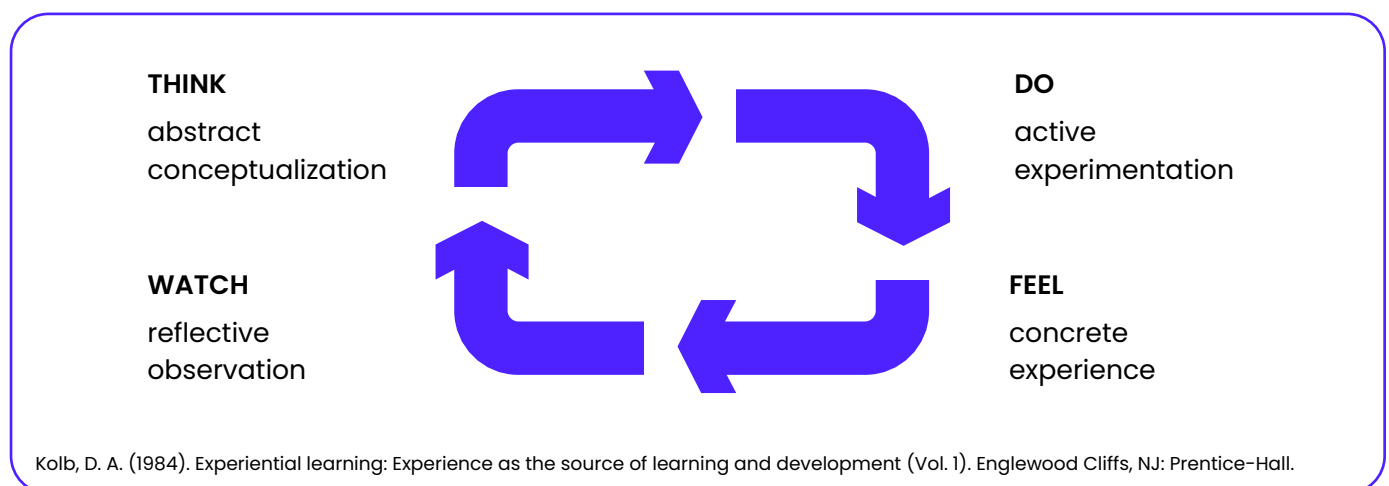
Sarah-Jayne Blakemore, professor of psychology at the University of Cambridge, suggests that training in non-verbal reasoning has greater effect in the period of late adolescence, when young people's brains are still developing strongly[14]. Two-thirds of undergraduates are less than 24-years old, nearly half are under 20[15].

(Not that the over 25s should give up: Blakemore goes on to say, 'There is no age limit to this kind of learning, which can and does occur throughout life'.)

So if students are in their prime learning years, how best to develop their skills? We won't attempt to replicate the volumes of learning and development theory and practice here, but we have identified three concepts that underpin much skills development practice.

1. Kolb's learning cycle

Kolb's influential work on experiential learning described the learning cycle that underpins much skills development practice – a four stage cycle of concrete experience, reflective observation, abstract conceptualisation, and active experimentation.

THINK
abstract conceptualization

DO
active experimentation

WATCH
reflective observation

FEEL
concrete experience

Kolb, D. A. (1984). Experiential learning: Experience as the source of learning and development (Vol. 1). Englewood Cliffs, NJ: Prentice-Hall.

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[14]Inventing Ourselves: The Secret Life of the Teenage Brain, Sarah Jayne Blakemore, 2018, Doubleday
[15]HESA undergraduate enrolment statistics 2020/21: 75.66% of 2,042,310 undergraduates are 24 years old or younger.

2. Learning preferences

We don't all learn in the same way. Knowing how you learn best is one of the principles in mastering a new skill according to the Harvard Business Review.[16] Helpfully, Kolb also outlined a learning style inventory of nine preferences that influence how individuals navigate the learning cycle.

3. Encourage discomfort

But when thinking about how we learn, we shouldn't steer students away from discomfort. "The way you like to learn is what makes you comfortable, but it isn't necessarily how you learn best", says psychologist Adam Grant.

Because skills development is practical in nature, most programmes incorporate elements of Kolb's learning cycle – particularly the reflection stage which is not something that comes naturally to many students.

Helping individuals identify and develop their skills

Because skills are formed in multiple ways, skill development solutions need to be multidimensional. We asked targetconnect's university clients to rank student interventions in order of importance – here are the results:

1. Curriculum review to surface skills
2. In-curriculum employer led projects/activities
3. Employer-led extra-curricular activities
4. Structured work experience including internships and placements
5. Encouraging students' self-led extra-curricular activities such as volunteering
6. Careers department skills development activities
7. Part-time work

These results suggest that students need context and structure to understand the nature of skills as well as the opportunities to develop them – work experience alone is not enough to help students develop their skills.

That 'curriculum review to surface skills' ranked first is a reminder that academic study is work. Three skills from the World Economic Forum's future skills list, **creative** and **analytical thinking**, **curiosity** and **lifelong learning**, show how skills can, and should, be fostered as part of the student's study experience (see our earlier reference to 'extracted employability').

> ➕ **The challenge of measuring skills development**
>
> Although measuring skills development is problematic as assessments are often based on perceptions, research does exist that compares students' skills before and after they've completed work-based learning. One such study in Australia showed undergraduates perceived they were better able to perform all 10 measured transferable skills following a placement – doubling in the case of 'developing professionalism' skill.[17]

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[16] https://hbr.org/2012/11/how-to-master-a-new-skill
[17] The contribution of work-integrated learning to undergraduate employability skill outcomes, Denise Jackson, Work Integrated Learning Journal

Understanding cause and effect in skills development during education is difficult. Practice varies considerably and understanding what intervention created what impact for a particular individual is a challenge. Student feedback evidence compiled by TASO[18] does suggest that transferable skills taught through employability programmes are related to career satisfaction and success (but most studies are small, anecdotal and lack causal findings).

Students often require help to articulate their skills in an employability context. Creating shared conversations between students, universities and employers regarding skills development in the context of employability is crucial. Creating a shared narrative around foundation skills helps universities provide context, helps employers to consider how to assess for skills against a level of expectation, and helps provide students with a narrative framework – a narrative that is understandable both in their skills development journey whilst studying and through their transition into work.

How employers and universities collaborate to develop students' skills

We asked universities how easy they found it to engage employers in developing students' skills, both inside and outside the curriculum. Whilst 24% said 'many employers help us develop our skills approach and deliver skills work with students', two thirds said 'some'. Only a couple said it was difficult to engage with employers. We then asked how employers can engage in student's skills development and received a wide range of examples. These included:

- Employer skills surveys
- Industry/employer advisory board sessions linked to skills
- Skills workshops
- Talks on skills
- Endorsement and assessment of employability awards
- Networking events
- Drop-in sessions and clinics
- Guest lectures
- Support for live projects
- Work experience and placement programmes
- Input into curriculum design and module sessions
- Mock assessment centres and interview taster days

That over half of respondents said that 'some' rather than 'many' employers engage in skills development suggests more can be done to increase levels of employer and university engagement on skills.

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[18]Transforming Access and Student Outcomes in Higher Education, https://taso.org.uk/evidence/toolkit

Managing My Future – University of Manchester

Managing My Future (MMF) is an interactive programme for **all** 2nd year students in the Faculty of Science & Engineering. Designed by the careers team, the programme's focus is on helping students to understand themselves and their options, to take action to secure experiences such as internships and placements, and know how to better stand out during selection processes..

• **Over 20 sessions timetabled across 5 weeks • 12 disciplines • 1,300 students**
• **80 visiting employers • 50 organisations • 20 alumni contributors**

Participants reported a better understanding of their skills and attributes, employer recruitment and selection processes, and where to find opportunities. 90% of all students reported an increase in their career confidence. Where MMF was accredited (Physics), engagement rose significantly for all students to 90%, and significantly for WP students (to 85%).

The challenge of engaging students, particularly EDI groups

Those from disadvantaged backgrounds may be less likely to engage in the activities that can help develop skills. The Sutton Trust found that "Extra-curricular activities can contribute to the development of these skills, but there are substantial gaps between the level of provision of clubs and activities reported by teachers, and actual take-up by pupils. 78% of teachers report the availability of volunteering programmes to build life skills, but only 8% of pupils say they take part."[14]

In their recent report on what works to improve equality gaps in employment employability, TASO made a number of reasons why we should focus on skills with disadvantaged groups:

- Interventions delivered by higher education providers can modify psychological competencies that are associated with positive careers and employment outcomes.
- Offering sports and volunteering opportunities can help students develop skills that make them employable.
- Work simulations create virtual environments that allow students to acquire the skills they would gain through work experience in a more controlled and directable environment and at scale.
- There is a strong correlation between participation in work experience and better graduate employment outcomes.

A further TASO recommendation supports the idea that universities should develop skills frameworks: "Academic departments and careers services can conduct their own data-driven research to understand the skills their graduates require to succeed in the job market. This can guide their programming for current students".

[14]Life Lessons, The Sutton Trust, 2017

Recognising and incentivising skills proficiency and attainment

Micro credentials have been much discussed as a way of recognising skills in smaller components than full degrees or equivalent multi-year programmes. Micro credentials can be recognised as a digital 'badge' issued by a trusted authority through a badge creation tool, e.g. a Virtual Learning Environment, or Learning Management System. When created, digital badges can be stored or exported to a 'backpack' platform such as LinkedIn, Credly (Pearson), Badger or Openbadges.me. In theory, employers can then search for candidates with relevant skills badges. Adoption has been relatively slow outside of employers' Learning Management Systems.

Employability awards are also a mechanism to recognise student participation in skills development activities. Such awards provide a structure for students to both develop and reflect on their skills development journey. Awards can also be stored digitally through tools such as the Career Passport in targetconnect which is a live version of the Higher Education Achievement Report (HEAR).

We believe that these approaches hold promise for universities to structure skills development work and, more importantly, to encourage student engagement. Although employers can struggle to engage with the variety of awards and systems on offer, as approaches mature we see the potential for employers to search for pre-validated skills.

Collaborating for the next generation – our recommendations for action

> **The protean career**
>
> '…Success will depend on adaptability, self-motivation, and a willingness to learn new skills[15]'.

We started off this report with an examination of the demographic, economic and technological forces that mean today's students will have longer, more varied, and less predictable careers. But there are few hard facts about the future. We might not be able to predict exactly how workplaces and jobs will change over the coming decades, but we can prepare students for change.

Create a common understanding of foundation skills

The terms and the detail may differ, but broad consensus does exist on the foundation skills that students need to develop. The depth of expertise required for each core skill may vary from role to role, from organisation to organisation, and may change over time, but students need to develop an understanding of, and practical abilities in, these skills. They are based on core behaviors that drive success and help create lifelong learning to adapt to the rapidly changing needs of most work.

We believe there is an opportunity for universities and employers to increase the work they do together. Stronger collaboration will increase students' understanding and development of the skills they need pre- and post-hire.

Build the scaffolding to support students' skills development in education and work

Nearly half of final year students say they are not ready to start thinking about their career yet[16]. Cibyl's survey data shows that less than half of students were confident in their abilities for 11 out of 14 skills.

Students require the scaffolding to support skills development that will help them understand both the importance of skills, and the mechanisms through which they can develop their skills both inside and outside the curriculum and this applies post hire as employers design on-boarding, rotations and development programmes.

We are not arguing for universities or employers to impose a standard template of skills across faculty or assessment methodologies. The foundation skills approach, mapped to existing, new, or work-in-progress frameworks, enables universities to adapt approaches that directly relate to the needs of their students, subjects and the employers they work with.

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[15]Understanding Careers, 2nd Edition; Inkson, Dries and Arnold; 2014, SAGE Publications
[16]Where are you right now, HEA paper on Career Registration: https://www.advance-he.ac.uk/knowledge-hub/where-are-you-right-now-using-careers-registration-support-employability-higher

Engage the disengaged through the curriculum

Some students require little intervention to develop their skills. Maybe they already have a strong career focus, have been brought up in an environment that fostered an understanding of skills and provided the experiences to develop them. These students need help along the way but many other students, often those most in need of interventions on skills, do not engage when left to their own devices.

There is increasing recognition that all students should have provision in the curriculum to understand and develop their skills. In this way the disengaged are more likely to engage, particularly those from disadvantaged groups.

Explore the potential for micro-credentials

Building on university employability awards, the issuing of micro-credentials (and associated badges) is in the early stages but holds promise for educator validated behavioural, cognitive and technical skills. A micro credential approach could add to the perceived value of study (accredited skills built up over time, through study and lifelong learning) and could support student and graduate engagement in their skills development. Such validated skills could become a mechanism to aid employer engagement and the direct hiring of students.

Employer Learning and Development teams have in some cases implemented badging via their internal Learning Management Systems; some UK and international universities, notably in Ireland, have taken initial steps to either badge existing modules or create short courses and issue resulting micro credentials.

Our call for collaboration

Examples of great practice already exist within universities, both in the UK and abroad. But as our research shows, many universities are only in the early development stages of their skills strategy and significant potential exists to increase employer-educator interventions

There is an opportunity to scale collaboration on skills initiatives - from guest lectures and sponsored e-learning to supporting work-integrated learning projects, to strategic curriculum design and content provision – all supported by platforms and deeper relationships across our sector.

Through collaboration across the sector, we can increase our understanding of practice that works, improve measurement of cause and effect, and triangulate action between universities, employers and students themselves.

Support

This report was created as a collaboration project between Group GTI and Cappfinity. Both organisations have deep knowledge and experience gained through working with universities, employers and students.

The targetconnect platform, Cappfinity's strength tools, and the joint SkillsforSkills project can be developed by universities to build skills frameworks. Both organisations have strong employer connections that ground their work in the practical experience of employment. Both organisations also work extensively with students so understand how to engage students and build interventions that develop skills.

Both organisations can help universities and employers develop skills frameworks.

About Group GTI

Group GTI's aim is to help all students, apprentices and recent graduates reach their career potential - discovering options, developing skills and building confidence. Group GTI delivers leading career platforms (targetjobs, gradireland and targetconnect) and associated services for students, education providers and employers. groupgti.com

About Cappfinity

Cappfinity is a leader in measuring and developing potential in Talent Acquisition & Talent Management with a focus on skills and strengths. Our platform hosts pre-skilling through to seamless onboarding – fast, fair, Ai resistant assessment, selection and development delivering immersive, brand aligned and insightful experiences. cappfinity.com

Appendices

Useful terms

Attribute

An attribute is a personal characteristic. Some attributes you can develop, for example your knowledge, skills or experience; some may be hard to change, such as your foot size.

Capability

Capability is a measure of a person's skills, knowledge and experience to perform a task or execute a duty for a certain role within a company.

Competency Frameworks

Organisations will often have frameworks that cluster skills, knowledge, and experience to assess for roles and to develop individuals as they progress into more senior roles.

Experience

Experience is a measure of how you have used your knowledge and skills in practice. Knowledge and experience are less prevalent in Early Careers, but generally of equal importance in experienced hiring.

Knowledge

Knowledge involves information, facts and theories and is often aligned to technical skills. You can learn and teach knowledge. Knowledge is often support by formal education and/or personal research.

Potential

Potential is an individual's latent ability to develop knowledge, skills, and experience based on their motivation and mindset to learn. Organisations that hire early careers candidates are often recruiting for potential.

Skill

A skills is something that you can do or a behaviour that you consistently exhibit. It can be 'natural' but often improves through practice, or training. Sometimes, you can master a skill through repetition and consistent effort.

Strength[17]

A Strength is a skill that someone is good at and is motivated to use. People have realised and unrealised strengths. A realised Strength is a skill that you are good at, enjoy using and make use of. An unrealised Strength is a skill a person is good at, enjoys doing using, but does not make much use of. Unrealised strengths can be an area of untapped potential.

Technical / occupational skills

These are the occupation-specific skills, the specialised expertise required to perform specific tasks and use specific resources and tools to carry out key activities.

Traits

A trait is a distinguishing quality, a relatively stable characteristic that causes individuals to behave in certain ways. The 'big five personality traits' within psychology are extraversion, agreeableness, openness, conscientiousness, and neuroticism.

Transferable / transversal skills

These are the key employability skills that make an individual effective at work, whatever the job or career. The are developed over time and taken from role to role as an individual's career develops

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[17]Cappfinity have mapped 80 strengths that can be used to assess and develop students and employees https://cappfinity.com/80-skills-set/