

The Global Skills Gap:

Student Misperceptions and Institutional Solutions



REPORT TEAM

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The graduate skills gap

While no university can be reduced to a single mission, or role, the primary extrinsic motivation for attending university, as expressed by students, is to further one's career goals.¹ Research by Canadian academics Kennett, Reed, and Lam suggests that few students prioritise the intrinsic value of the learning they receive when considering their motivations for university attendance. Universities that perceive themselves as having a responsibility to their students should accordingly place the nurturing of employability towards the top of their agenda.

The need to do so is not, however, merely a question of satisfying students. Universities do not exist in a vacuum, and the learning they provide helps cultivate a generation of graduates with the competencies required for high-skilled labour, thereby also fostering innovation, entrepreneurship, and prosperity.

If universities optimised the link between their teaching practices and student employability, one would expect to see three things: first, that recent graduates, ever-more-conscious of the price they paid for higher education, would express high levels of confidence in the value of their university education; second, that employers in high-skilled labour sectors would express high levels of satisfaction in the skills held by their graduate employees (the perceived skills gap would be either non-existent, or minimal); third, that there would be a correlation between student perceptions about how ready they were for the workplace upon graduation, and employer perceptions about how work-ready their graduates are.

None of these things are, in fact, a widespread reality. YouGov's most recent survey of graduates found that more than a third of survey participants disagreed that the "costs of going to university were worth it for the career prospects/learning I gained". Similarly, the Higher Education and Policy Institute (HEPI)'s 2017 Student Academic Experience Survey indicates that the number

of students who believe that their degree is poor value for money has doubled in the past five years, and now represents over a third of surveyed students.²

If the majority of graduates are still satisfied with their university experience, the same cannot be said of employers, for whom the size of the skills gap is a cause of significant concern. A 2016 PayScale/Future Workplace Survey found that 90% of surveyed graduates believed themselves "well-prepared" for their new jobs; approximately 50% of hiring managers shared that opinion.³ Recent research from the Open University corroborates this finding, indicating that 69% of companies expect to struggle to hire adequately-skilled graduates over the coming year.⁴ Other surveys are less pessimistic, but still indicate that significant room for improvement exists. CareerBuilder's annual survey of employers in the US, which seeks to identify employer sentiment on a range of issues, found this year that almost one in five employers believe that academic institutions are failing to provide adequate workplace preparation.⁵

Which skills are most coveted?

The relationship between market and employer requirements and graduate competencies falls into two broad categories: first, a shortage of 'hard skills' such as tech companies being unable to find people that can code, or news corporations struggling to find writers; second, a 'soft skills' deficit including attributes such as flexibility, critical thinking, communication skills, and teamwork.

2 <http://www.hepi.ac.uk/wp-content/uploads/2017/06/2017-Student-Academic-Experience-Survey-Final-Report.pdf>

3 <https://www.cbsnews.com/news/employers-new-college-grads-arent-ready-for-workplace/>

4 <http://www.telegraph.co.uk/business/2017/07/02/skills-gap-hitting-uk-plc-tune-22bn-says-open-university/>

5 <http://press.careerbuilder.com/2017-04-27-74-Percent-of-Employers-Say-They-Plan-to-Hire-Recent-College-Graduates-This-Year-According-to-Annual-CareerBuilder-Survey>

1 Kennett, Lam, and Reed (2011)

Gaps in both these groups of skills exist across both nations and sectors. Often, soft skill gaps are considered to be more prevalent. Much research has been done over the past two years alone on the specific skills in short supply. A review of multiple sources has allowed us to identify patterns in the most-valued and most-sought-after skills wanted by hiring managers. One, oft-cited, illuminative study was performed in 2016 - the PayScale Workforce-Skills Preparedness Report.⁶ Just under 64,000 managers named writing proficiency as the most in-demand hard skill (44% felt it was lacking in recent hires), followed by public speaking (39%) and data-analysis (36%).

decision-making capabilities and problem-solving skills, (3) communication skills, (4) organisation, and (5) the ability to process information.

The results vary from survey to survey, but the general message is clear: employers value communication skills, critical thinking capabilities, and teamwork-related skills. These are all competencies that the higher education process could be designed to cultivate in addition to the core subject skills that are taught. Yet, often, these softer skills are found to be lacking.

It is worth considering each of the two major forms of skills gap separately, because the capacity of universities

Skills in demand

Survey	No.	Skill 1	Skill 2	Skill 3	Skill 4	Skill 5
PayScale (2016)	63,924	Critical Thinking	Attention to detail	Communication	Leadership	Teamwork
NACE (2016)	260	Teamwork	Leadership/ Problem-Solving	Communication	Organisation	Information Processing
EvolveScientific (2016)	142	Critical Thinking	Independence	Adaptability		
LinkedIn (2016)	291	Communication	Organisation	Teamwork	Punctuality	Critical Thinking

Source:
<https://www.payscale.com/data-packages/job-skills>
[goo.gl/3VF9FWcontent_copyCopy short URL](https://insightsresources.seek.com.au/soft-skills-just-important-academic-ability-science-graduates)
<https://insightsresources.seek.com.au/soft-skills-just-important-academic-ability-science-graduates>
<https://business.linkedin.com/talent-solutions/blog/trends-and-research/2016/most-indemand-soft-skills>

Perhaps worryingly for institutions that purport to cultivate critical thinking capability, 60% of respondents named precisely that as the soft skill most-lacking among current hires, followed by attention to detail (56%), communication skills (46%), ownership (44%), and leadership (44%). These results are not anomalies. The National Association of Colleges and Employers (NACE) ran a smaller study (260 employers) in 2016: again, the most-desired skills were: (1) teamwork, (2)

to deal with each varies significantly. Filling all hard skill gaps may be beyond the ability of the HE sector alone, and will be also determined by both immigration policy, and the way that student preferences and abilities are shaped at the primary and secondary education level. Put otherwise, employers frequently state that communication skills are in shorter supply than they would desire - but literacy abilities are determined, to a large extent, by the quality of pre-tertiary education.

Filling some of the soft skill gaps, however, could fall more within the remit of the higher education sector.

⁶ <https://www.payscale.com/data-packages/job-skills>

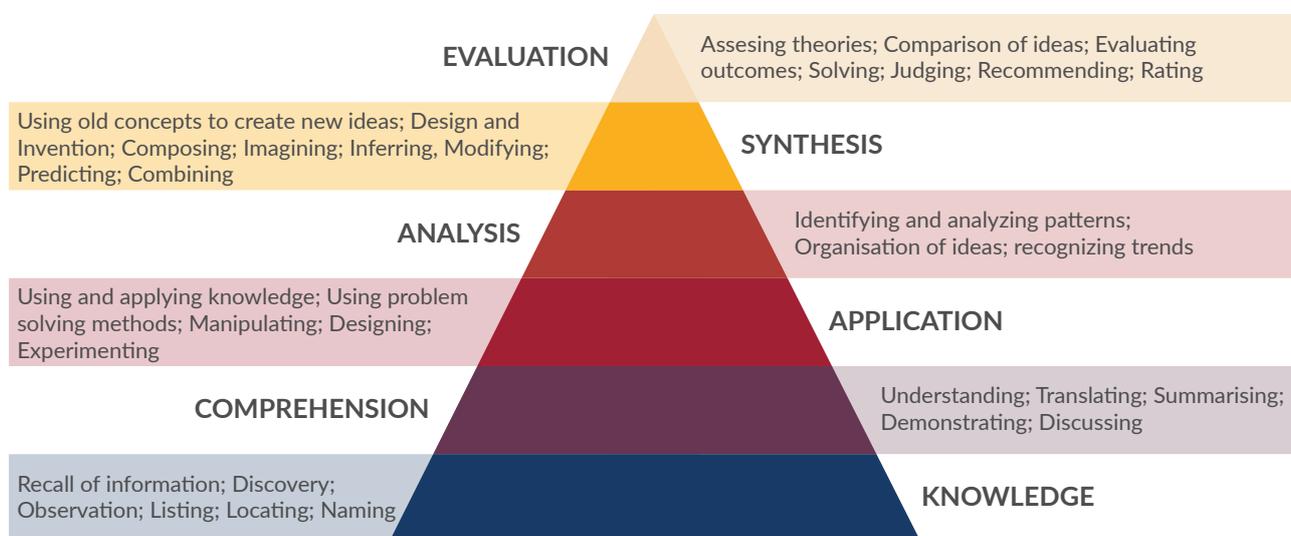
Universities are, after all, perceived as institutions designed to develop critical thinking abilities, places where students take ownership of their own projects - both academic and co-curricular. The next section will examine what universities are doing, and can do, to develop some of these perceived key competencies by employers - and, thus, mitigate the skills gap.

Current practices

One conclusion that emerges from examining the list of most-in-demand hard and soft skills is that the ideal graduate will be - as employers are acknowledging - an interdisciplinary one.⁷⁸ Writing and communication skills are typically perceived as most likely to be possessed by Humanities graduates - yet the various surveys we looked at found these to cross academic sector boundaries. Others, like teamwork, adaptability, and resilience are not the preserve of any one discipline, but

are desirable irrespective of one's intended career path.

If interdisciplinarity is conducive to better acquisition of soft skills, the United Kingdom higher education system starts at a disadvantage. It is based on early specialisation, with students often encouraged to select - if not a subject - a 'track' (STEM, Humanities, Arts) at the age of sixteen, when A-Level decisions are made. Its counterpart, the American HE system, is nominally somewhat more interdisciplinary, insofar as undergraduates are encouraged - often obliged - to take 'minor' course-bearing classes in fields different from their major.



7 <http://press.careerbuilder.com/2017-04-27-74-Percent-of-Employers-Say-They-Plan-to-Hire-Recent-College-Graduates-This-Year-According-to-Annual-CareerBuilder-Survey>

8 Other ways in which graduates need to receive new forms of training to prepare them for today's jobs are also addressed in Section 2 of this paper, 'Technology and Pedagogical Innovation'.

Nonetheless, a true interdisciplinary education requires a far-more schematic, explicit integration of the disparate courses a student might take than is currently achieved

by large swathes of the US system. The imperative is not solely relevant to US institutions, either. Lamentations that educational systems are too theoretical - that learning is predicated too heavily on memory and comprehension, those lower-strata elements of Bloom's Taxonomy of Learning - abound from India to Brazil, through Taiwan and China and elsewhere across the globe.

Employers have noticed. The aforementioned CareerBuilder survey indicates that employers' primary qualm with HEIs is *"too much emphasis on book learning instead of real-world learning"*, with 44% of survey participants responding thus. It is perhaps unsurprising that hiring managers are now citing work experience as the second-most important determinant of applicant's success - more so than *"degree level, the relevancy of course, or the standard of university"*.⁹

Therefore, it is clear that universities seeking to actively enhance graduate employability must do more than just adjust curricular content. Rather, the higher education experience must change in two ways: first, undergraduates must be given opportunities to acquire a range of skills that run across disciplinary boundaries; second, students must be given the chance to apply, evaluate, and create in ways that signal to employers that relevant, actionable learning has taken place.

One pedagogical framework that meets both of these imperatives is project-based learning (PBL). PBL does more than offer students the opportunity to achieve higher-strata forms of learning. It also forces them to acquire other highly-desired competencies. It is far more likely that ownership and leadership will be acquired when students are asked to take charge of long-term projects with accountability that goes beyond their own personal academic performance.

So, too, is it more likely that the teamwork and

communication skills that relevant surveys find to be in such high demand will be developed through PBL: writing dissertations or revising for examinations are often solitary pursuits.

Finally, PBL experiences will be at their most fruitful when - as has been seen frequently when reviewing submissions to this year's Reimagine Education Nurturing Employability category - employer engagement occurs. A number of universities have incorporated employer-led PBL modules into their curricula, and, in doing so, provide learning experiences with the verisimilitude necessary to ensure that both theoretical and practical knowledge is acquired. Such initiatives can do much to decrease the gap between employer expectations and learning processes.

Practical recommendations for institutions

What, then, can universities do to help boost student employability? Recommendations for educators - and educational administrators - seeking to ensure gainful, fulfilling employment for their graduates might include:

1. Liaising with employers (local, regional, and global) to create work experience opportunities for as many current students as possible
2. Engaging with businesses to facilitate closer correspondence between the skills universities teach and the skills businesses want. Here, it is necessary to adopt a broad definition of 'teach' - a definition that acknowledges that soft skills are often in shorter supply than hard ones
3. Emphasising employability throughout the university journey
4. Seeking ways of integrating employability-focused moments into curricula. A number of submissions to the Reimagine Education Awards Nurturing Employability category are doing so, using employer relationships as a means of providing meaningful PBL experiences.

⁹ <https://www.recruitment-international.co.uk/blog/2016/11/work-experience-more-important-than-degree-level-to-graduate-recruiters-finds-research>

The QS perspective on employability

At QS, however, we also believe that it is important that students are provided with current, comparative, independent data on what their potential study destinations are doing to enhance student employability. The QS Graduate Employability Rankings (GER), released for the third time in September 2017, aims to do this.¹⁰ It constitutes a novel, progressive attempt to subject the nurturing of employability to data-driven scrutiny, and to recognise that employability goes beyond a single graduate employment rate figure.

When compiling and launching the GER, QS hoped that the multi-indicator framework used would encourage institutions to collect better data about their work, asking such questions of themselves as: How many employers are we inviting to campus? How many hours of career advice do our students receive? What proportion of our students take on industry-specific work experience while with us? And does this differ by subject? Is it possible that our Economics students are able to meet top employers such as Goldman Sachs, our PPE students McKinsey, and our Computer Scientists Google, for example? Do our Linguists receive no such targeted interaction with desirable employers?

We recommend, therefore, that universities seek to collect equally nuanced, comparative data about both their employment practices and their employment outcomes. This process should take place in collaboration with employers, and seek to examine, again, more than just the simple matter of whether graduates gain employment. Hitherto, skill surveys have created a clearer picture of what competencies companies expect from their graduates. The next research step will involve iterative, regular feedback from those companies, so as to provide universities with a clearer picture of the relationship between their teaching practices and their graduate skill sets.

QS welcomes inquiries from any academics/universities, employers, or think-tanks that seek to collaborate with us in examining graduate employability. We will continue to develop the QS Graduate Employability Rankings, and seek input from employers and HEIs alike about how this initiative can be improved and extended.

¹⁰ <https://www.topuniversities.com/university-rankings/employability-rankings/2017>

CASE STUDY



Minerva Project

Of course, for some, doing so will still be insufficient, and preparing graduates for successful twenty-first century employment requires an entirely new form of degree altogether. One such example is the Minerva Project, mentioned in the 'Alternative University Models' section of this booklet. The Minerva Project is a degree format that prioritises in its pedagogy, a number of the focuses of this paper including: interdisciplinarity, applied knowledge, project-based learning, and close employer-academia relations.

Graduates that participate in Minerva forego the traditional single-campus experience, and instead study in seven different cities across the world. The curriculum is designed to remove the boundaries between the campus and the city in which students work, through *"a range of programs that make each location an extension of the learning environment"*.¹ These programs ensure that the relationship between the learning experience and the skills deriving from that experience is made explicit.

These learning experiences are designed to give students the opportunity to solve real-world problems. Though students are often told that theoretical knowledge

possesses practical value, the examples provided by educators can often appear abstract and the solutions that students offer to them have negligible real-world impact.

The Minerva Project is a highly exclusive university model - reportedly more so than America's Ivy League universities. With an acceptance rate of 1.9% - compared to 7.2% at MIT, 4.73% at Stanford, and 5.2% at Harvard, such claims hold.^{2,3,4,5} As a consequence, any attempt to evaluate the success of the Minerva Project must acknowledge the small sample sizes and highly exclusive cohort to which their initiatives are applied.

1 <https://www.minerva.kgi.edu/global-experience/experiential-learning/>

2 <https://www.ft.com/content/7216d448-f9fb-11e5-8f41-df5b-da8beb40>

3 <http://mitadmissions.org/apply/process/stats>

4 <https://admission.stanford.edu/apply/selection/profile.html>

5 <https://college.harvard.edu/admissions/admissions-statistics>

ABOUT QS

Established in 1990, QS is dedicated to providing independent and authoritative research and resources for both prospective students and higher education providers worldwide. The QS World University Rankings®, published annually since 2004 and hosted on student-focused platform TopUniversities.com, is among the most-consulted resources in the sector.

QS Intelligence Unit (QSIU) was formed in 2008 in response to growing public demand for comparative data on universities and other higher education providers, and for institutions to develop deeper insight into their competitive environment. Committed to the key values of rigorous integrity, undeniable value, unique insight and charismatic presentation, QSIU strives to be the most trusted independent source of global intelligence on the higher education sector.

In addition to the research and insights provided by QSIU, QS offers a range of services to help prospective international students find the right institution – and vice versa. This includes a global series of higher education fairs; an annual publication cycle of guides, reports and e-papers; and a dynamic range of online platforms.



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