Teaching Excellence and Student Outcomes Framework: Finding from the subject-level pilot 2018-19

Annex E: Employment expert report

This is an independent report completed in autumn 2019 following the conclusion of the pilot.

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Introduction

Provider-level and subject-level assessment for the second Teaching Excellence and Student Outcomes Framework (TEF) subject-level pilot was carried out by one main panel assessing provider submissions and five combined subject panels assessing subject submissions. The main panel had two employment experts as panel members and each subject panel had employer representatives.

The main panel employment experts and report authors – Professor Peter Elias, Professor at Institute for Employment Research, University of Warwick, and Professor Steven McIntosh, Professor of Economics, University of Sheffield – provided expert advice and input to the main panel on employment related issues. The experts reviewed a sample of provider-level metrics and submissions to identify issues related to employment.

Full details of the assessment process are outlined in the TEF subject-level pilot guide[1] published in October 2018. Comprehensive evaluation of the second pilot is reported in 'Teaching Excellence and Student Outcomes Framework: Findings from the subject-level pilot 2018-19', to which this report is an annex. Details of the panel membership are published on the Office for Students (OfS) website[2].

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[1] Available at: www.officeforstudents.org.uk/publications/teaching-excellence-and-student-outcomes-framework-subject-level-pilot-guide/.

[2] Available at: www.officeforstudents.org.uk/advice-and-guidance/teaching/future-of-the-tef/subject-level-pilots/.

Review of recommendations made following the subject-level pilot 2017-18

In our report[3] last year we made a number of recommendations, some of which have been acted upon in preparation for the 2018-19 subject-level pilot. In particular, we questioned:

- Basket of employment metrics – is the balance of metrics and their weighting appropriate?
- Benchmarking of metrics – are alternative measures of social background available to replace POLAR[4] and is spatial benchmarking necessary?
- Highly skilled employment – is the definition based on Standard Occupational Classification (SOC) Major Groups 1, 2 and 3 the best approach?

In this report, based upon our participation in the 2018-19 pilot, we return to these questions.

Role of the employment experts

As we argued last year, we favour a continued role for the employment experts in future TEF exercises. This proved useful for smaller providers whose provision was dominated by particular subjects or whose students worked in particular regions following graduation. It was also useful in those cases where no Longitudinal Education Outcomes (LEO) data was available, allowing us to formulate an initial hypothesis 'as if' such data were available. The initial discussions between the three assessors were a useful setting to input into the process, though this does not mean we cannot contribute equally as effectively if alternative methods of deliberation are ultimately chosen for the full subject-level TEF.

Basket of metrics

In line with our recommendation, this year's pilot replaced one of the Destination of Leavers from Higher Education (DLHE) metrics (employment or further study) with two metrics derived from LEO data. Each of the following metrics may contribute a positive or negative flag with a value of 1.0 in formulating the initial hypothesis:

- highly skilled employment or higher study (DLHE)
- sustained employment or further study (LEO)
- sustained employment where graduates are earning above the median salary for 25–29 year-olds, or in higher study (LEO).

The LEO data offers a number of advantages compared to the use of DLHE data only:

[3] See Annex B: Panel report (Employment expert report, page 77): www.officeforstudents.org.uk/publications/teaching-excellence-and-student-outcomes-framework-findings-from-the-first-subject-pilot-2017-18/.

[4] See: www.officeforstudents.org.uk/data-and-analysis/polar-participation-of-local-areas/.

- the inclusion of earnings in addition to occupational prestige as an indicator of labour market 'success'
- the ability to track individuals for longer periods after graduation
- the large sample size and accuracy of administrative data, compared to self-reported survey data.

With three employment metrics, rather than two as previously, we have given further consideration to the impact these have on the initial hypothesis. The inclusion of further NSS metrics, from three last year to five this year, does provide some balance. However, there are now issues around timing, with different metrics being reported for different cohorts of students. In particular, the LEO metrics are observed in 2013-14, 2014-15 and 2015-16 for the graduates in 2009-10, 2010-11, 2011-12 graduating cohorts. These are clearly based on earlier cohorts than the other metrics.

This was commented on in a number of provider submissions, in some cases arguing that much had changed since these students graduated, and so they offered no guide to the effectiveness of current provision. It should be made clear that this is not a property or consequence of the LEO data itself, with matched tax records currently available until 2017 (2016 at the time data for metrics were put together). Rather, if we want to observe graduates three years after graduation, and want to average across three cohorts, then we have to go back to graduating cohorts up to six years before the year of the most recently available data.

These are choices though, and the choices can be changed if it is felt by the sector that six years is too far to go back. We argued in detail in last year's report that six months was too early to try to observe the 'settled' labour market position of graduates (as is the case with DLHE data used in this year's pilot), but this was on the basis of evidence gathered in 2002. The increasing number of graduates in non-graduate jobs (see Figure 2 below) may mean that the length of time for graduates to be assimilated into graduate jobs has become longer. Six years may, therefore, be appropriate.

Benchmarking of metrics

There are two issues we wish to raise regarding the benchmarking of the employment metrics.

Social background

Some metrics are benchmarked against POLAR4 data, which describes the educational disadvantage of an area rather than the socio-economic disadvantage. POLAR4 classifies each local area into five groups based on the proportion of young people who enter higher education.[5]

Such a measure of social background undoubtedly indicates the spatial distribution of participation in higher education between 2009 and 2015, but it may not reflect the impact of parental and peer group influences on an individual's decision to apply for higher education. Uncontrolled differences

[5] See www.officeforstudents.org.uk/data-and-analysis/polar-participation-of-local-areas/ for further information on how POLAR4 quintiles are defined and calculated.

in average social background of student intake would then affect institutions' Student Outcomes metrics.

Economics and sociological research show that there are intergenerational links, such that children from an advantaged background are more successful, on average, in their own labour market outcomes following education.

For example, in terms of income, a recent paper by Gregg et al. (2019)[6] examines the strength of the relationship between fathers' earnings (observed when individuals were aged 10 and 16) and the individuals' own earnings (between the ages of 26 and 42) for a sample of sons born in 1970. In summary, the research found:

- a positive link between fathers' and sons' earnings that is strongest for the lowest paid sons, and, particularly, for the highest-earning sons;
- when controlling for prior attainment, the intergenerational relationship weakens, in particular towards the top end of the sons' earnings distribution; however, the intergenerational relationship remains significant.

The authors state: "even when comparing individuals with very similar early skills and similar years of schooling who attained the same levels of GCSEs and A levels and studied the same subject at the same institution at university, the IGE [intergenerational elasticity] is still very strong, particularly at the top and bottom of the distribution"[7]. Very similar results are found by Britton et al. (2016)[8], using administrative rather than survey data.

Thus, individuals from more advantaged backgrounds earn more themselves in adulthood. Similar findings have been observed of an intergenerational link in terms of occupational prestige. For example, Macmillan et al. (2013)[9] use data from the longitudinal survey of the DLHE, to investigate the occupation of young people 3.5 years after graduation, in particular whether they are classified to point 1 on the National Statistics Socioeconomic Classification (NS-SEC), which is higher managerial and professional occupations (a subset of the SOC1-3 occupations used to identify highly skilled jobs in the TEF metrics). The authors control for three measures of social background. One is an indicator based on the POLAR3 classification (the previous iteration of POLAR4, the same classification as used in the TEF metrics). In addition, the authors use measures of the occupational status of parents (NS-SEC), and whether the young person attended a private school. The fact that all three measures are included in the same equation means that we

[6] Gregg, P., Macmillan, L. and Vittori, C. (2019). 'Intergenerational income mobility: access to top jobs, the low-pay no-pay cycle and the role of education in a common framework.' *Journal of Population Economics*, 32, 501-528.

[7] Ibid, pp 520

[8] Britton, J., Dearden, L., Shephard, N. and Vignoles, A. (2016). 'How English domiciled graduate earnings vary with gender, institution attended, subject and socio-economic background'. Institute for Fiscal Studies Working Paper W16/06.

[9] Macmillan, L., Tyler, C. and Vignoles, A. (2013). 'Who gets the top jobs? The role of family background and networks in recent graduates' access to high status professions'. Institute of Education Department of Quantitative Social Science Working Paper Number 13-15.

can observe the effects of one on the young people's occupational status, **holding the effects of the other two constant.**

The results show that:

- POLAR3 is related to the likelihood of the young person working in a high status occupation 3.5 years after graduation: an individual from a POLAR3 quintile 1 area is 3 percentage points less likely to be in a high status job[10], while an individual from a POLAR3 quintile 5 area is 4 percentage points more likely to be on a high status job.

- But even after controlling for this and so holding POLAR quintile constant, an individual whose parents worked in professional occupations are 5 percentage points more likely to work in a high status occupation themselves, compared to an individual whose parents worked in routine occupations. The private-state school difference in high status job likelihood is 9.5 percentage points.

- Controlling for prior attainment reduces the effects, though the private school effect remains statistically significant, suggesting that part, though not all, of the intergenerational occupational correlation is due to children from advantaged backgrounds achieving higher results in school.

- The effect of social networks, where social networks are measured via questions that ask individuals how they found out about their job, were not found to affect the estimated intergenerational effect.

Thus, young people from an advantaged background earn more, and are more likely to work in a high status occupation, than their less advantaged peers. If students were randomly scattered across institutions then this would not matter for our purposes, but this is not the case. Britton et al. (2016) show that those from a more advantaged social background are more likely to attend more prestigious universities.

Therefore, the social background of students differs systematically across institutions. Given that the existing research summarised above shows that area-based (POLAR) measures of social background do not fully control for these differences in social background, then this will affect metrics, and in particular will affect Student Outcome metrics. The systematic differences in student backgrounds across institutions will not affect NSS-based metrics in the same way, since there is no reason why answers to NSS questions should differ across social background groups. This lack of variation across groups is indeed what has been observed by the OfS in its analysis of benchmarking factors for the TEF metrics, and hence POLAR4 is not used as a benchmarking factor for NSS metrics.

Variation in social background of students across institutions, that is not fully controlled for, could potentially be part of the reason for the difference in ratings by aspect across provider type, observed in this year's pilot. The main panel observed that the differences between the TEF ratings awarded for each aspect of quality to different types of provider was larger for the Student Outcomes aspect than for Teaching Quality and Learning Environment. For example, no further education colleges were rated Gold for Student Outcomes at provider level or subject level. This

[10] Compared to the reference category of POLAR3 quintile 3.

was the only aspect of quality where this was the case. If students at further education colleges and higher education institutions differ in their social background in ways not captured by POLAR4, this difference in ratings may have been driven by the metrics not successfully taking such factors into account.

Although the above statistics relate to final ratings, these will have been influenced by, the metrics and the initial hypothesis in each aspect. It was our experience, based on the sample of institutions we looked at, that providers were more adept at providing mitigating factors for Student Outcome metrics than for Teaching Quality and Learning Environment. In this case, the variation in metrics may have been even wider than that observed for ratings described above. This is also consistent with the observation that, for all providers, there was a greater distance between the Student Outcomes aspect rating and the overall rating than for other aspects of quality, suggesting that panel members were more willing to accept mitigations for Student Outcome ratings.

When mitigation was claimed for Student Outcomes metrics, this was most often expressed in terms of a lower potential for above average earnings and high status jobs for graduates from institutions that tended to serve their local labour markets in relatively depressed areas of the country. This type of mitigation was to be expected, given that the Student Outcomes metrics do not take into account region statistically (see below for a further discussion). Often this was done very effectively by such providers, for example supplying data on earnings in their areas compared to the national average. Rarely were claims for mitigation made on the basis of social background of the student intake, though as discussed above, this could be a factor, if social background is not fully controlled for by the POLAR4 benchmarking.

A more direct measure of social background can be obtained from the UCAS application form, but this measure is not available for all students, and is subject to its own response bias limitations. Consideration should be given to the availability of such alternative measures of social background, and the impact of factors which are not covered by POLAR.

We have also given careful consideration to spatial benchmarking. Though information on spatial region was not available in the LEO at the time it was collected for this year's TEF subject-level pilot, LEO now includes area information, measuring the detailed postcode sector where individuals live in each year that their earnings are recorded. Following further analysis of the relationships and impact of this postcode data, it may be desirable to take region of employment into account for the LEO metrics in future rounds of TEF, either through benchmarking or an alternative statistical method. There are compelling-sounding arguments both for and against mitigating for region:

- **For:** some higher education providers predominately serve their local labour markets, whereby the majority of their students lived locally before registering at the provider and continue to live in the same area as the provider when moving into jobs after graduation. If such higher education providers are also located in areas with lower earnings on average, then they will be disadvantaged on an earnings-based metric, compared to an institution which, for example, sends many graduates to London. It is therefore important to control for the region in which an institution's students work post-graduation.

- **Against:** the point of benchmarking is to control for differences in institutions' student intakes, so that each institution is evaluated against its expected performance given the

type of students it has. However, labour market outcomes are an output of the higher education process, not an input into the system, and so should not be controlled for. If one institution sends its graduates to high-paying areas, such as the City of London, and another one does not, it could argued that the former has been more successful, and this success should not be controlled away.

The issue here is that the higher education institution that sends its graduates to high-paying areas, and the further education college, which helps local students achieve more while also providing the skills needed by their local labour markets, have both been successful, according to the missions and goals that they set themselves. This highlights the problems with using the same set of metrics to evaluate a range of institutions that differ in the type of education services they offer, the type of students they serve, and the goals that they set.

Highly skilled employment

Secondly, we have been following the progress of the new Graduate Outcomes survey, which will provide for a 'highly skilled employment' metric at 15 months rather that six months. In separate discussions with HESA, the ONS and the OfS we have explored the need for a more fine-grained classification of occupations than is currently the case with SOC2010. The next revision of SOC2010 will be available later this year and HESA has agreed to work with the ONS and the IER at the University of Warwick to include a more up-to-date classification of occupations, based on SOC2020, on future versions of the Graduate Outcomes survey.

While these changes are in the pipeline, we continue to have reservations about the broad classification of highly skilled employment. Allocation of the more detailed occupational codes to graduate and non-graduate categories offers a more nuanced approach[11]. In the figure below we show how this approach indicates the way in which the scope for graduates to enter graduate jobs in UK labour market has evolved over the past 26 years. The first figure, based on total UK employment in each year, shows how the number of graduate jobs (labelled as 'expert', 'orchestrator' and communicator') has grown from 6.8 million in 1992 to 11.9 million by 2018. The second figure indicates that the number of graduates in the UK labour market grew from 3 million to 11 million in this same period, with a growing proportion of graduates in non-graduate jobs.

[11] Elias, P. and K. Purcell (2013). 'Classifying Graduate Jobs for the Knowledge Society', Futuretrack Working Paper No. 5, Institute for Employment Research, University of Warwick. See https://warwick.ac.uk/fac/soc/ier/futuretrack/findings/elias_purcell_soche_final.pdf [PDF].

Figure 1: UK labour market by occupational group, 1992–2018

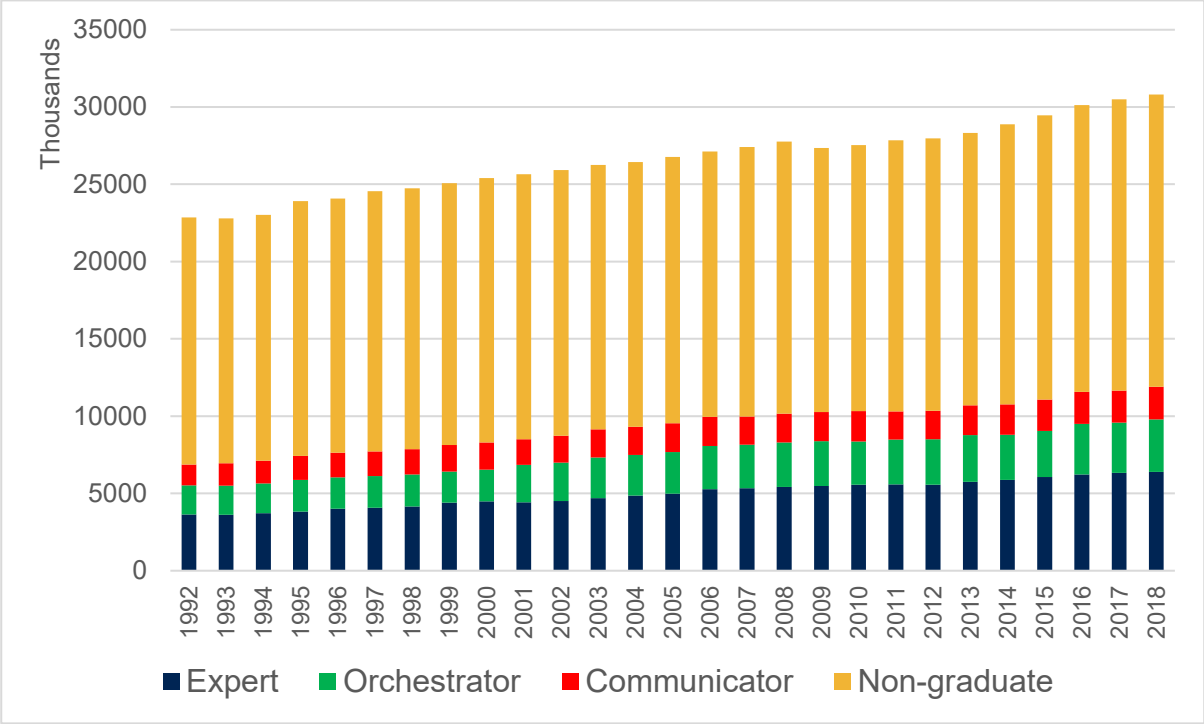
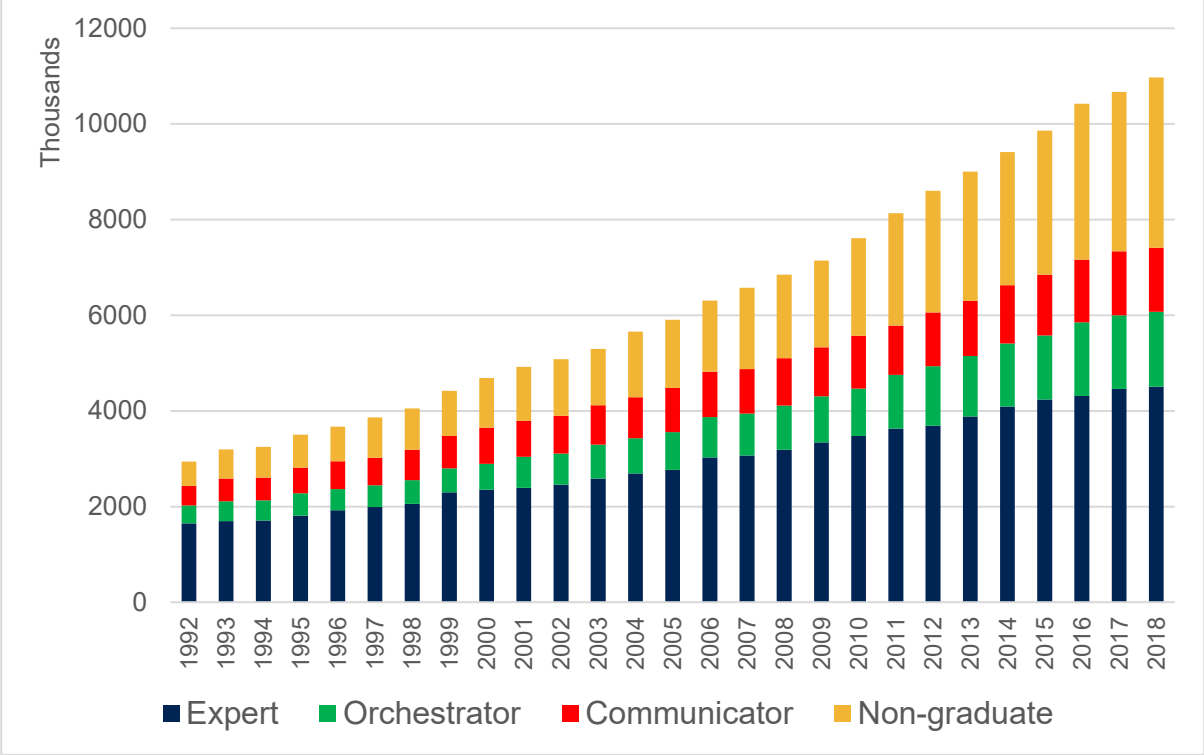


Figure 2: UK labour market - graduates by occupational group, 1992–2018



Sources: UK Labour Force Surveys, April-June quarter each year