Teaching Excellence and Student Outcomes Framework: Subject-level Consultation response

Education for Engineering (E4E) is the body through which the engineering profession offers coordinated advice on education and skills policy to UK Government and the devolved Assemblies. It deals with all aspects of learning that underpin engineering. It is hosted by The Royal Academy of Engineering with membership drawn from the professional engineering community including all 35 Professional Engineering Institutions, the Engineering Council and EngineeringUK and the Engineering Professors' Council. The Engineering Professors' Council has also made a separate submission to this consultation which E4E endorses.

Engineering is at the core of our modern society, underpinning every sector from communication, technology and entertainment to finance and healthcare, as well as its more visible applications in construction, manufacturing, energy, defence and transport. Engineering turns research into wealth, improves lives and drives economic and social progress. Engineering-related sectors employ some 19% of the UK workforce and generate 23% of total turnover. This contribution has a wider multiplier effect: every extra person employed in engineering supports another 1.74 other jobs.[1]

The UK is experiencing a long-standing engineering skills gap with an average annual demand for 202,900 roles requiring engineering skills to be filled through to 2024. At a graduate level, this leaves a shortfall of between 22 500 to 45 000.[2] The pressures here are only going to sharpen as demand is enhanced by the pace of change driven by the fourth industrial revolution, while the impact of the UK's decision to leave the European Union may restrict access to skilled EU workers significantly. The resulting need for transformational change in our approach to skills has been recognised by the Government's industrial strategy to improve the UK's productivity performance and remain globally competitive.

Engineering, as a discipline and an HE course of study, has several features that are distinct to or more pronounced than in other disciplines. For example, the rapid pace of change in the field driven by technological progress as well as interactions and engagement with industry means its market currency is subject to rapid change. In addition, engineering is increasingly required to engage with people in general, whether they are the users of engineered products or interacting with engineering systems as they go about their daily lives.

There is an established system of accreditation of engineering degrees, and degrees accredited by Professional Engineering Institutions licensed by the Engineering Council are recognised internationally through a number of international accords. The accreditation process focuses on assuring that degrees will deliver to at least a threshold standard of learning outcomes specified by the engineering profession. These learning outcomes are developed and maintained in consultation with employers and other stakeholders. There may be synergies between subject-level TEF and accreditation, although these have distinct and different purposes. Careful communication will be needed to ensure that subject level TEF does not undermine the value of accreditation or create unintended confusion in the minds of students, parents/advisors or employers.

Finally we note that TEF was originally conceived as a means of recognising teaching excellence. More recently, this has been changed to be 'teaching and student outcomes', presumably at least in part due to the fact that any absolute measurement of teaching quality has proved at best problematic (and at worst, conceptually impossible). Some of the proposed metrics are wholly inconsistent with the claim that subject-level TEF is a

[1] EngineeringUK *State of the Nation* 2017 report https://www.engineeringuk.com/report-2018/
[2] Ibid

measure of teaching excellence but may be more suitable in the context of a Student Outcomes Framework. In order to avoid misrepresentation and encouragement of a heuristic misuse of the data in student choice, either the terminology of 'TEF' needs to be changed or the intended metrics.

To define 'subjects' in subject-level TEF, do you:
a) agree with using level 2 of the Common Aggregation Hierarchy as the classification system (CAH2, with 35 subjects) and if not, what other systems could be used and why?

Yes - agree
As the consultation document recognises, any system of higher education (HE) subject classification will involve a degree of arbitrariness and thus limitations. We also agree that the system used for the purpose of the subject-level TEF should be one already in use. With this in mind, we are reasonably content with engineering's positioning within the thirty-five CAH2 subjects as proposed.

The 'subject' of engineering alone covers a wide range of diverse disciplines and subdisciplines and it is important any parameters used for subjects do no more than is strictly necessary to aggregate different subjects together for administrative purposes. We stress that we would see the current thirty-five as a minimum and ultimately would like to see this evolve to a more granular framework in order to present a more accurate picture.

b) think that specific changes or tweaks need to be made to the definition of the 35 subjects in CAH2, or to the 7 subject groups used in Model B and if so, please explain why?

Yes
Engineering is grouped with computing and technology and although this is a reasonable fit, engineering will be impacted by the other two subjects (and vice versa).

The stated purpose of subject-level TEF is to inform student choice and, for this to be done in any kind of meaningful way, we believe the underpinning principle of any system must be for the greatest degree of granularity that is reasonably possible without losing comparative impact.

We also question the logic and scope of allowing providers to elect to move subjects as it has the potential to lead to some very odd, and presumably unintended, results. The obvious temptation is for providers to swap these subjects strategically to hide weaker subjects and create strong-looking (according to TEF metrics) groups. It is clearly not the TEF's intention to allow improvement in ratings simply by strategic movement of subject groupings.

2. Do you agree that we should have a longer duration and re-application period in subject-level TEF?

No – disagree strongly
The consultation document rightly acknowledges the conflicting needs for the data to be relevant (timeliness is a key part of this) and the practicalities and burden of data collection. However the proposed extension to five or six years between reassessments is simply too great for the awarded TEF rating to be meaningful as it may reflect an assessment made seven years previously (taking into account the time between the data being collected, the rating being awarded and publication).

The consultation also raises the issue here of some providers engaging in game-playing or manipulation where they reapply as frequently as possible in order to obtain a higher rating. If the system provides for it, there is no reason providers should not seek to reapply annually if they believe their current rating does not properly reflect the quality of

particular subjects, especially if there may have been material changes to the courses in question. Lengthening the period for which providers can reapply will not dissuade those who seek to game the system, it merely tweaks the rules of the game.

A longer duration and re-application period could mean in practical terms a poor-performing subject (in a grouping with high-performing subjects and so deemed perhaps 'silver') could keep running 'silver' rated courses for five or six years. Alternatively, a subject could have reached a gold standard due to the efforts and achievement of a particular academic or academic team who then leave that provider, leaving the provider with five years of a gold rating but without the means to sustain it.

This is particularly damaging in the case of engineering which, as a HE course of study, has several features that are distinct to or more pronounced in engineering. The rapid pace of change in the field driven by technological progress as well as interactions and engagement with industry means it is essential any subject-level TEF rating provides a relevant (i.e., current) snapshot.

We would add that the HE sector as a whole is moving away from annual data collection towards in-year collections as recommended by the Higher Education Data & Information Improvement Programme (HEDIIP). The data collection that will be necessary under subject-level TEF should not act contrary to this development.

Internationally, the programme accreditation cycle is typically five years. In the UK, accreditation is seen as a developmental process with ongoing communication between HEIs and the accrediting professional engineering institutions. This allows any changes to be identified, discussed and addressed in a timely manner.

3. Should subject-level TEF retain the existing key elements of the provider level framework (including the 10 TEF criteria, the same suite of metrics, benchmarking, submissions, an independent panel assessment process and the rating system)?

No - disagree
There are broadly acknowledged issues with many of the key elements of the provider level TEF framework and it is important that weaknesses in the provider level system are not unintentionally amplified by carrying them across to the subject-level TEF. Rather we urge this be seen as an opportunity to strengthen the framework.

As stated earlier, in order to avoid misrepresentation and encouragement of a heuristic misuse of the data in student choice, we urge that either the terminology of 'TEF' be changed or the intended metrics.

<u>Provider level TEF core metrics:</u>

Teaching Quality	Teaching on my course	NSS Q1-4
Teaching Quality	Assessment and feedback	2015 NSS and 2016 NSS Q5-9, subsequent NSS Q8-11
Learning Environment	Academic support	2015 NSS and 2016 NSS Q10-12, subsequent NSS Q12-14
Learning Environment	Continuation	HESA and ILR data
Student Outcomes and Learning Gain	Employment or further study	DLHE declared activity 6 months after qualification
Student Outcomes and Learning Gain	Highly skilled employment or further study	DLHE declared activity 6 months after qualification

a) Student Survey (NSS) data is relied on to assess teaching quality (both on the course in general and assessment and feedback) as well as for assessing academic support within the learning environment. Yet student self-reported satisfaction is not equivalent to teaching quality, but rather a reflection of the gap between student expectation and actual delivery. This can be seen in the long continual variance in self-reported satisfaction rates in these categories in NSS data between students studying STEM subjects, which tend to be higher than among students studying arts subjects. Most students lack an objective point of reference for what good teaching at higher education level looks like and while student satisfaction is an important measure, it is not appropriate to use it as a proxy for teaching quality. That this data is collected as a snapshot during the final year of the students' study also renders it unrepresentative of the situation as a whole. We suggest, along with many others since the introduction of the TEF, that a more relevant measure is student engagement with their course and institution.[3] This reflects far better the dynamics of the student-educator exchange and explicitly acknowledges the role of students in contributing to their own experience rather than the more passive model of students as recipients of knowledge (or market consumers) that student satisfaction surveys imply.

Student satisfaction rates are also a measure that is vulnerable to inflation by providers who choose to prepare for this by, for example, increasing student contact time prior to the collection of the NSS, so that students will be well disposed towards their tutors, which is of course not a problem in and of itself. More problematic examples reported have included providers strongly encouraging students to fill in high satisfaction rates on the basis that this might affect their employment prospects.

Once providers have the NSS data, they may choose to be proactive and use it to address problematic areas, for example by losing or retraining less capable members of staff. However, the proposed five- or six-year gap between TEF ratings means there would be no way for potential students to know that the data used for the rating reflected an issue since addressed.

The significance of student engagement as an indicator of learning gain has already been acknowledged and accepted by HEFCE. Questions relating to student engagement were added to the NSS last year. However, these are still subjective indicators and limited in their value. There already exists a more thorough student engagement survey, the UK Engagement Survey (UKES) run by the Higher Education Academy (now AdvanceHE),

[3] Graham Gibbs, *Dimensions of Quality*, Higher Education Academy 2010 https://www.heacademy.ac.uk/system/files/dimensions_of_quality.pdf

which has been adopted by many HE providers. Wider use of sophisticated measures of engagement, such as UKES, would provide a better proxy for teaching quality than NSS.

b) Learning environment continuation is essentially about student non-progression (drop-out) rates.

As a starting point, there is no research demonstrating a link between student drop-out rates and teaching quality. A clearer determining factor in dropping out is students' personal circumstances and their levels of engagement. Drop-out rates are of course relevant and relate to course outcomes but must not be misrepresented as indicative of teaching quality.

Furthermore this metric counts full-time students between their first and second year of study. Essentially students who continue studying at HE level at the same or at another provider, or who completed their qualification in the period considered, are deemed to have continued while all other students are deemed non-continuers. Therefore, this is not appropriate as applied to TEF at a subject-level as it would not include the movement of students from a particular course at a particular provider (as long as they carried on with HE) and may misrepresent the general picture for students on engineering courses at each institution. This is a particular case of bias when a course has more students from deprived socio-economic areas. Such students tend to have received less support in making decisions on their future from both school and family and statistics show that more students of this type move to other courses not due to teaching quality but their change of interests.

Additionally, there is a potential risk that this may encourage universities to make courses easier or drop particularly difficult modules to minimise drop-out due to students finding courses difficult. In the case of engineering, this could mean student exposure to key concepts essential to their future performance in employment being reduced. It could also compromise efforts to counteract grade inflation.

We are also unclear about how this metric would capture students switching courses. Anecdotally, engineering degrees may tend to have a higher than average rate of student switching. Many universities run engineering programmes with commonality in the early years of study so that students can select or switch specialisms in subsequent years of study. Additionally it is common for students to move between BEng and MEng programmes depending upon their performance and personal circumstances.

c) Measures around student outcomes and learning gains rely on the Destinations of Leavers from Higher Education survey (DLHE) declared activity six months after qualification.

DLHE measures tend to reflect well on engineering graduates who tend to be in demand from employers and thus find employment more quickly than graduates in many other disciplines. However, this measure is related to outcomes and is not related to teaching and so does not belong in a framework that purports to be about rating teaching quality. Student destinations and outcomes are of course important, but as stated previously, either the subject-level TEF should be renamed or this metric should be excluded.

That is not to say it is not relevant data which should be published and used elsewhere, but inclusion in the TEF and presented as being an issue largely related to performance of the academic department would be unjust and unhelpful. Student employment outcomes are largely related to students' choice of course, their level of prior attainment (and subject-level TEF should do nothing to discourage those providers that are excellent in ensuring access and support to those with lower levels of prior attainment), social capital and region. Providers in low employment regions (such as the South West) are always going to score behind regions such as London regardless of teacher quality or student

experience. These outcomes are also vulnerable to wider economic changes (which itself also weakens the proposition that subject-level TEF ratings be five or six years old).

We also note that the concept of 'learning gain' is not actually measured or evidenced under these metrics which makes its inclusion misleading.

Provider level TEF supplementary metrics:

Teaching Quality	Grade inflation	Mandatory provider declaration for providers with degree awarding powers
Student Outcomes and Learning Gain	Sustained employment or further study	LEO 3 years after qualification
Student Outcomes and Learning Gain	Above median earnings threshold or further study	LEO 3 years after qualification

d) Grade inflation is an issue to be addressed but TEF, particularly at subject-level, is not the appropriate vehicle to do this.

The issue of how subject-level TEF is intended to be used (in theory to inform a student choosing between an engineering course at provider A or provider B rather than a student choosing between an engineering course or an architecture course at provider A) goes to the heart of the issue. The subject-level TEF does not purport to, and is not capable of, comparing subjects in the latter sense, but it is highly unlikely that potential students and the wider public will realise this.

e) Engineering performs well in LEO data, a reflection of the higher salaries engineering graduates can expect to command. In the context of a subject-level TEF, one might expect the ratings therefore to be better on average for engineering than for other subjects. However, we understand that would not be the case given that the ratings will be relative to the same subject groups in other HEIs. In order to show the relative student outcomes, the strength of absolute outcomes in engineering may well be lost on prospective students hoping to use TEF in support of their choice of what to study. This is an inherent problem for subject-level TEF as it is important both to demonstrate the desirability of studying a subject with good outcomes across the board, but also to show the differences between institutions. To put it another way, it is important not to misrepresent a 'bronze' rated engineering course as having poor outcomes when compared with a 'gold' rated course in another discipline where average earning may be significantly lower.

Whilst LEO data does represent progress as an employment outcome metric over DLHE, which relied on self-reporting, there are still many issues with the LEO data. These issues have been amply covered elsewhere[4] but the specific issues in the context of applying these to subject-level TEF in an engineering context will be covered below.

Firstly, given the longitudinal nature of LEO data (and the proposed five- or six-year gap between TEF gradings), possible prospective students will be looking at data that often relates to a course that was taught more than a decade previously. This is inherently problematic but for an industry as fast paced as engineering, both driving and driven by technological developments, a decade is likely to involve a complete change in industry and the labour market as well as the degree programme.

[4] See for example, https://wonkhe.com/blogs/a-beginners-guide-to-longitudinal-education-outcomes-leo-data/

The data, as regards engineering students, is also likely to have significant gaps. As this is tax data, UK graduates who secure work abroad will thus not be included which is likely to have a pronounced impact on engineering which has a particularly mobile workforce. This is true in both industry and academia and across all skill levels. Engineering companies tend to recruit from a global talent pool; UK engineers are in high demand internationally and can readily secure employment in other countries. Equally, UK engineering courses have particularly high rates of international students and their exclusion from LEO also means significant gaps in the data.

Measuring income is an inherently crude, one-dimensional measure, valuing city traders above nurses and within engineering, industrialists over academics and (early stage) entrepreneurs. Clearly the economy and wider society needs and wants people to go into nursing, teaching and a whole host of other occupations with relatively lower salaries as the recent industrial strategy recognises. A richer, more nuanced approach to student outcomes is needed if it is to reflect the true value of a plethora of different career paths. Good employment outcomes and high productivity rely on graduates (and others) having flexibility, soft skills and character attributes (as well as crucially social capital) in addition to harder skills and specific competencies. An individual being employable is not the same as actual employment and a true measure of learning gain should go across all of these areas.[5] LEO seeks only to measure UK-based employment and only then according to earnings.

Benchmarking

While we agree benchmarking can be a valuable tool to allow a more meaningful interpretation of a provider's metrics, the provider-level TEF system (and reliance on POLAR data) has serious limitations.

It does not fully take into account geographical patterns of economic deprivation and social disadvantage. A further layer of complexity is added when the engineering (and the many courses that encompasses) is placed alongside computing courses and technology courses in its CAH2 aggregation and the different intakes on those courses.

Additionally, the male-dominated makeup of HE engineering courses (only 16% of first degree undergraduates in engineering and technology subjects were female in 2015[6]) effectively means those providers that do succeed in attracting more women in to study engineering will not be made sufficiently visible and will be disproportionately disadvantaged under LEO data (owing to differences in average male and female earnings). Placing an emphasis on earnings as an outcome measure, creates an incentive for institutions to favour the admission of men over women as well as discouraging the admission of other groups with lower than average earnings (including BMAE students and student with disabilities). Whilst some of these issues could be addressed through benchmarking, there would still be unintended and undesirable consequences unless any benchmarking covers all the right groups accurately and takes into account desired outcomes (i.e., positive benchmarking in favour of those with more female students rather than only according to adjustments to remove expected differences).

This point will impact metrics based on DLHE and LEO data. The latter as a longitudinal measure will be further impacted by the (a) the greater propensity of women (particularly

[5] See for example Johnny Rich, *Employability: Degrees of Value*, HEPI (2015), http://www.hepi.ac.uk/wp-content/uploads/2015/12/Employability-Degrees-of-value.pdf

[6] EngineeringUK *State of the Nation* 2017 report. To put this in context, out of all subject areas, engineering and technology had the second lowest proportion of first degree entrants who were women in the academic year starting in 2015 – only computer science had a lower proportion, at 14.9%. This contrasts with the number of women starting STEM first degrees (50.1%) and first degrees overall (56.1%).

those under 35) to take career breaks, (b) the slower career progression of women owing to gender discrimination, and (c) the lower proportion of female engineering graduates who enter and remain in engineering roles.

We are unclear on how integrated masters degrees fit into this scheme (over half of integrated masters students are engineers or scientists), a particular issue for engineering where a postgraduate qualification is still often demanded for working engineers. It is also not clear to us where higher apprenticeships (that range from level 4 to level 8) and degree apprenticeships (available at levels 6 -8) sit in this framework as their inclusion could have a significant impact on the data and the split between full-time and part-time courses.

Submissions

We would encourage learning from the provider-level TEF process here to stimulate reflection on the extent to which submissions can genuinely reflect practice or rather test the ability to craft a convincing submission.

Panel assessment

The obvious process issue here is the wisdom of modelling the subject-level TEF's after the provider-level TEF's panel assessment when there is a statutory duty to undertake an independent review of the latter in 2019. Consequently it makes sense to consider the issue of panel assessments for subject-level TEF independently and on its own merits.

It is critical that the panel assessments are done by engineers with an understanding of both the discipline and HE pedagogies.

Alternative suggested metrics

We would suggest a metric around the proportion of teaching staff who are qualified to teach: this is a broader definition than simply those who have a teaching qualification, as we fully recognise the value of those in industry being able to lecture on an occasional or regular basis. In the context of engineering, those with professional registration (e.g., CEng) status could also be monitored (this does not indicate competence to teach but does provide evidence of commitment to professional standards). Currently providers do not reliably collect this information though if it were to be included as a metric, this could incentivise that.

Summary

The broader point here is that the TEF model (at subject-level but also at provider level) should not seek to impose a single rigid model of what good looks like. Rather one of the recognised strengths of the UK HE sector is its diversity and ability to innovate and this must be encouraged rather than stifled.

We would point out that providers have very different missions and approaches (for example, they may choose to focus and excel on access issues, PhDs, regional or industrial engagement) and that they should be measured against that in a way that requires continuous improvement and genuinely stretching targets rather than allow coasting. Alternatively to prevent too much of a cherry-picking approach, these alternative dimensions could form part of a more inclusive framework that would explicitly acknowledge the very different focuses and strengths of higher education providers rather than trying to force them all into one fairly rigid model (the TEF).

To state the obvious, any attempt to compare outcomes from HE providers is fraught with the inherent issue that (a) the inputs (i.e., the students) are so different (and the strongest

factor influencing a student's academic attainment is their family background) and (b) the environment to which graduates enter is so varied.

Reducing a complex and multi-faceted issue like excellence to a three-banded rating is inherently promoting a heuristic approach to student choice, that is to say choice based on supposed signifiers that obstruct informed choice rather than contribute to it. Subject-level TEF must aim to encourage prospective students to explore the context of performance rather than stripping away that context.

Rating system

We strongly advise against use of the 'gold', 'silver', 'bronze' grading system from the provider-level TEF as it is inappropriate. The early evidence suggests that the main effect of this system is stimulating interest in 'gold' ranked universities.[7] The logical extension of this is that those ranked bronze are tarnished by comparison as there is no lower grading outcome than a bronze. The largest research project to date on students' views on how teaching excellence should be assessed, measured and recognised indicated that half of all students would not have applied, or would have reconsidered applying, to an institution with a Bronze award.[8]

There is a deeper point about the meaning of these rankings. The initial messaging at provider level (when it was optional rather than compulsory) was that a 'bronze' ranking amounts to a good institution, silver meant better and gold represented the best of all. Extending this logic to subject-level TEF effectively means there are no bad subjects as all registered courses cannot receive a lower ranking than a bronze. This is regardless of the Quality Assurance Agency baseline for quality in courses and the fact that some bronze courses may be accredited under the Engineering Council[9] while some courses deemed 'gold' may not be.

In effect, this three-tiered approach is one of cliff edges that strips out context and nuance to become heuristic by design. Subjects will be perceived as 'good', 'fine' or 'bad' without further investigation into the actual relevance or real meaning of these labels.

Building on our suggestion above that instead of measuring all providers against the same standard, providers instead choose their own areas of focus or mission and be judged against that (at least in part).

4. For the design of subject-level TEF, should the Government adopt:
• A 'by exception' approach (i.e. a form of Model A), or • A 'bottom up' approach (i.e. a form of Model B), or
• An alternative approach (please specify)?

• A 'bottom up' approach (i.e. a form of Model B)
Although neither of these approaches is ideal, we prefer a form of model B (bottom up).

[7] As measured by Hotcourses Group Insights data: https://www.hotcoursesgroup.com/early-signs-that-tef-rankings-are-impacting-on-international-student-behaviour/
[8]. https://wonkhe.com/blogs/what-sort-of-tef-do-students-really-want/ The research is based on a survey of 8,994 current students across 123 institutions, weighted for institution and gender, conducted by trendence UK.
[9] The Engineering Council sets the overall requirements for the Accreditation of Higher Education Programmes (AHEP which sets out the standard for degree accreditation) in engineering, in line with the UK Standard for Professional Engineering Competence (UK-SPEC). Accreditation is undertaken by sector specific professional engineering institutions (PEIs) under licence from the Engineering Council. These institutions interpret the standards as appropriate for their own sector of the profession and use them when deciding whether degree programmes meet the requirements to be awarded 'Engineering Council accredited degree' status.

5.Under Model A, do you agree with the proposed approach for identifying subjects that will be assessed, which would constitute: a) the initial hypothesis rule for generating exceptions from the metrics? b) allowing providers to select a small number of additional subjects?

a) No – strongly disagree
b) No – strongly disagree

We do not agree with model A.

6. In Model A, should the subject ratings influence the provider rating?

Yes – strongly agree
We believe subject ratings should be the determinant factor in the provider rating.

7.In Model B, do you agree with the method for how the subject ratings inform the provider-level rating?

Neither agree nor disagree
Our main concern with model B is that we consider the 'middle layer' (of grouping the thirty-five into seven) as both unnecessary and, worse, actively contributing to misleading data about particular course options. Two rounds of aggregation and statistical rounding loses more detail than just the one layer. We are unclear as to why the 'middle layer' has been suggested, aside from a perceived reduced administrative burden. However, this may not be the case as it would simply mean there would presumably be seven panels for the groups in addition to 35 sub-panels for the CAH2 subjects.

8. Do you agree that grade inflation should only apply in the provider-level metrics?

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9 What are your views on how we are approaching potential differences in the distribution of subject ratings?

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10 To address the issue of non-reportable metrics:
a) do you agree with the proposed approach?
b) when assessment occurs, do you prefer that assessors:
- *rely on group metrics alongside any reportable subject-level metrics?*
- *rely on provider metrics alongside any reportable subject-level metrics?*
- *follow an alternative approach (please specify)?*

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11 Do you:
a) agree that QAA Subject Benchmark Statements and PSRB accreditation or recognition should remain as a voluntary declaration, and if not, why?
b) think that there are any subjects where mandatory declaration should apply?

a) Yes – agree

For engineering, we cannot think why a provider would not wish to declare their course was PSRB accredited, but we would object to this being used as a metric. Course accreditation is done on a five-yearly cycle and so there is a time lag factor to be considered, as well as the reality raised in our response to question two that, at any given time, many good engineering degrees will not have current accreditation. There is also a

risk that universities give incorrect information about the accreditation status of their programmes, an issue that the Engineering Council is aware of in relation to Key Information Sets (partly due to the long lead-time for submitting KIS data, the window for which may close before the accreditation process is started or decisions are confirmed).

b) No

12 Do you agree with our approach to capturing interdisciplinary provision (in particular, joint and multi-subject combined courses)?

Yes – agree
It is unclear here as to whether the 'courses' referred to in the question refers to the CAH2 groupings of 35 or the seven subject groups.

However the three groupings proposed (presumably in addition to the 35 CAH2 subjects and the seven subject groups) seem broadly sensible.

We would again raise though the issue of adding another level of aggregation that does not add value but rather comes at the expense of losing a level of detail that pertains to a specific course.

13. On balance, are you in favour of introducing a measure of teaching intensity in the TEF, and what might be the positive impacts or unintended consequences of implementing a measure of teaching intensity?

No – strongly disagree
No, as this implies that 'intensive teaching' (however defined and measured) is the only effective way of a student learning (assuming that is the actual outcome being sought). If it is 'teaching intensity' for its own sake that is to be measured, this can be done separately. There are many models of student learning that do not rely on intense teaching and it would be wrong to stifle these by not recognising this. Engineering in particular is a practical subject, heavily reliant on practical experience and project work where 'teachers' may not be lecturers but industry supervisors, laboratory technicians, researchers, student peer groups working as teams or as individual students, making mistakes and learning from them how to improve. This is simply not captured in the current framework and further sophistications that attempted to capture all these different ways of learning would serve only to complicate the metric and would still exclude other learning approaches. The goal to be incentivised is not intensive learning for its own sake, but effective learning which may come in diverse forms. The subject-level TEF should encourage diversity and innovation to ensure continued progress in effective teaching practice. Teaching intensity will discourage laboratory and practical work as these tend to have to be undertaken at a much lower student:staff ratio than straight lecturing activity.

Student perceptions around teaching intensity tend to be based on their (pre-HE) experience which tend to be based on completely different models of learning. Encouraging any form of counting contact hours (perhaps tied to perceptions of 'value for money') helps encourage the misconception that this is how students learn effectively.

For HE lecturers and tutors who do not give a sufficient amount of time to their students, the TEF is not a tool that can effectively address this. Equally additional time that university staff provide to support students outside of contracted teaching time may not be captured.

A focus on teacher hours also does not address the different issues of quality of teaching but also importantly quality of learning. It assumes a passive model of students as vessels waiting to be filled with knowledge by their teachers rather than dynamic and active participants in their own education. Again we would argue that student engagement is a

vastly more meaningful measure of student learning. While this could encompass contact hours in some form, it would only be in terms of creating the right conditions for learning.

14. What forms of contact and learning (e.g. lectures, seminars, work-based learning) should and should not be included in a measure of teaching intensity?

We agree all of these forms of contact and learning should be captured. However there are clear difficulties in how this is done (for example, should the providers' offering be counted or rather the actual number of students who choose to engage with it?) and the risk is that it could skew the data unfairly.

15 What method(s)/option(s) do you think are best to measure teaching intensity? Please state if there are any options that you strongly oppose and suggest any alternative options.

There are no clear practical ways of doing this that meaningfully capture diversity of approaches and impede innovation within the sector

As previously stated, there is already a framework for engagement: the UKES, which could be utilised here. Additionally the use of learning analytics is becoming increasingly widespread and can capture a range of potentially useful data on student presence and activity within the university (for example, library usage, computer logins, completion of assignments). Data like this could be used to develop a traffic light system to identify students at potential risk of, for example, dropping out or wellbeing issues and this more imaginative approach could then be used in evidence as part of student engagement.

1. Gross Teacher Quotient (GTQ) is a proxy measure that does not capture the information we are really seeking around student learning

2. Contact hours – please see answer to questions 3, 13 and 14 for the issues with student perceptions being used alone.

3. Please see our comments on being 'qualified to teach' rather than 'teacher qualified'.

4. Prior experience of using this in the form of Key Information Sets (KIS) showed they were neither widely understood nor used[10].

5. We agree with the focus on student engagement, though it goes far beyond learning resources alone.

6. Measuring staff contracted hours provides no adequate reflection of what is happening on the ground, the voluntary time outside of this spent with students or the many other forms of learning that happen with teachers.

16. Do you have any other comments on the design of subject-level TEF that are not captured in your response to the preceding questions in this consultation?

A key rationale behind subject-level TEF is providing potential students with timely and relevant information to help inform their decisions, a valid rationale that wants an informed consumer.

[10] For example see https://www.timeshighereducation.com/news/unregulated-kis-data-overload-will-baffle-not-enlighten-students/418525.article?sectioncode=26&storycode=418525&c=1#survey-answer

However the research available clearly shows that this type of information does not directly support choice or make it meaningful.[11] Instead this information tends to be used heuristically. That is to say is it is used over-simplistically as an indicator of quality or a shortcut to 'good', 'okay' and 'bad.' For example, taking a university's high position in a league tables as meaning that is a 'good' university, when in reality, rankings tend to focus heavily on research indicators which have little to do with the undergraduate experience (and not always a positive relationship).

This is relevant as Sir Michael Barber, Chair of the Office for Students has expressed his intent to use behavioural science and encourage experimentation to find what works most effectively.

> "We will regulate according to the realities of the market, taking account of behavioural biases, rather than assuming perfect competition. Where it is not clear what works, we will encourage experimentation by providers to find the most effective ways to deliver great student outcomes."[12]

This recognises that potential students are not always rational economic actors, choosing what and where to study based on their own long term benefit. Instead these decisions are made on a more instinctual basis rather than a divorced rational weighing up of the data and evidence. Research shows that around 75% of potential student decide on their course of study first and then choose the institution at which they would like to study.[13]

Therefore subject-level TEF needs to consciously avoid this trap of heuristic choice. The less granular the subject-level TEF data is, the less meaningful it will be and, even worse, it can actively mislead people. Potential students may choose to study a bad computer science course, say, on the basis of this being in a wider grouping that drags up its score and conceals the weaknesses of the individual course.

It is important that the subject level TEF does not compromise the value of professional accreditation, e.g. if accredited programmes sit within bronze rated subject groupings or if gold groupings include none accredited programmes. Equally it is important that lack of accreditation is not treated as a proxy measure (metric) of poor quality in the subject-level TEF as there are reasons why not all engineering degrees are accredited at a given time that have no bearing on quality (e.g., new programmes may not have been considered for accreditation yet or an accreditation visit is delayed whilst a Department undergoes a major building programme).

The consultation document is rightly clear that value for money is part of the criteria in deciding how to proceed. However rather than being the usual trade-off between what government can practically afford to do and what is useful and valid, if what emerges is a subject-level TEF that misleads students, then surely the rationale behind this must be examined more closely.

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[11] Behavioural Insights Team *Moments of Choice* 2016: http://38r8om2xjhhl25mw24492dir.wpengine.netdna-cdn.com/wp-content/uploads/2016/08/Moments-of-Choice-report.pdf

[12] Tending the Higher Education Landscape: Priorities for the Office for Students, speech by Sir Michael Barber, June 2017 http://www.universitiesuk.ac.uk/news/Documents/sir-michael-barber-speech-uuk-june-2017.pdf

[13] Abigail Diamond, Tim Vorley, Jennifer Roberts and Stephen Jones, *Behavioural approaches to understanding student choice* 2012: https://www.heacademy.ac.uk/system/files/resources/student_choice.pdf