

**Royal Society of Biology draft response to the Teaching Excellence and Student Outcomes Framework:
Subject-level Technical Consultation**

SUBJECT CLASSIFICATION SYSTEM

We will use a subject classification system to define what, for the purposes of assessment, a 'subject' is. We propose to use the second level of the Common Aggregation Hierarchy (CAH2) to define 'subjects' for the purpose of subject-level TEF. The CAH2 is made up of 35 subjects. We expect that this classification of subjects will be meaningful for students as it has been designed around teaching and with student information in mind. In Model B, we will group the 35 subjects into 7 subject groups to reduce the burden of assessment.

Q1: 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 – strongly agree

Yes – agree

Neither agree nor disagree

No – disagree

No – strongly disagree

If No, what other systems could be used and why?

While level 2 of the Common Aggregation Hierarchy (CAH) is not optimal, it would be of more use to students in terms of reflecting teaching excellence within subjects, compared to the groupings used in Model B. CAH2 offers a relatively simple break down of courses to subject level, however it can be misleading in some CAH2 aggregations such as engineering or dentistry. Furthermore, CAH2 is not a subject level commonly used by students, departments or PSRBs. Students make their choices on a degree programme level, and PSRBs with accreditation schemes accredit individual degree programmes.

Using level 3 of the CAH as a classification system, which offers a higher level of granularity, would more accurately reflect teaching within a specific discipline, but increases the administrative burden on universities. National benchmarks and TEF course information available at CAH3 level rather than institutional benchmarks would allow subject outcomes to be comparable on a national basis.

As stated in our feedback to DfE on the subject level strawmen (February 2017), the Royal Society of Biology is concerned that CAH2 is not particularly useful for categorising the biosciences. Examples are given in our answer to question 1b.

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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

No

If Yes, please explain why

Higher Education Institutions vary too greatly in structure to fit this type of grouping model. The diversity of institution structures poses significant problems as collegiate universities, specialist universities, or universities with specialist campuses, will deviate from the 'standard mode' of subject or provider for example, the existence of specialist agricultural universities, medical centres, marine schools. While full service universities may deliver subjects through 2 or 3 separate faculties. This is distinct from the joint and multi-subject combined courses addressed in Q12 interdisciplinary provision.

The CAH system does not define subjects; it aggregates them into groups. This can be problematic when comparing overlapping groups and subjects. The proposed subject groups may offer a fragmented view of the quality of teaching within a bioscience department, as some departments incorporate several subjects into their bioscience programmes. Furthermore, degree programmes with similar titles, at different universities could be aggregated under different subject groupings.

For example:

Biomedical sciences, pharmacology, molecular biology and biochemistry may all be taught within a bioscience degree.

Courses that fall under 'Agricultural, food and related studies' can be more specifically placed among bioscience, chemistry, engineering or business.

Geographical and environmental studies is grouped in social sciences, rather than natural sciences. However BSc Environmental Science and ecology degrees are often delivered by a life sciences department.

Interdisciplinary degrees, such as conservation science, do not fit neatly into subject classifications.

The results of the subject-level TEF would therefore be split between several subject group TEF submissions based on CAH2 codes, and would not reflect an accurate assessment of teaching with the overall bioscience programme. In Model B this would lead to an increased burden on departments, as cycles for different subject grouping submissions could lead to some bioscience departments constantly feeding into, and fighting for space in, group submissions.

Different styles of teaching across the disciplines should be considered for the subject groupings. Many courses will be difficult to group together meaningfully, but where possible they should be grouped if taught similarly. For example, mathematical sciences is grouped as a natural science under the proposed subject groups for subject-level TEF, although it is often taught differently to other subjects within the group.

DURATION OF AWARD

We are proposing to extend the duration and re-application period of awards under subject-level TEF to reduce the administrative and financial burden on providers and assessors. We are consulting on two options for the length of the duration and re-application period:

- *A 5 year duration with a 3 year minimum re-application period, with an annual assessment process.*
- *Running the assessment process every second year and in combination with this, a duration of 6 years and re-application period of 4 years.*

Q2: Do you agree that we should have a longer duration and re-application period in subject-level TEF?

Yes – strongly agree

Yes – agree

Neither agree nor disagree

No – disagree

No – strongly disagree

The focus of this question is whether we should extend the duration. However, please provide as much detail as you can on your preferred length for the duration and/or re-application period.

Universities would benefit from a longer duration for subject-level TEF. A longer duration of award would help reduce the administrative burden on universities, increase familiarity with the assessment process, and allow time for meaningful changes to be made and their impact shown through metrics

The 5 year duration in option 1 is preferable, as most universities work on a 5 year review cycle, allowing tangible impact of changes to be observed. However, we would recommend a shorter reapplication period of 2 years, in order to allow departments to improve their award after making meaningful changes. This option is likely to be more desirable to universities, as it offers a shorter window of time for the re-application process, enabling universities to be more reactive to their TEF ratings.

A reapplication period of 3 or more years may lead to stagnation as departments would be unable able to improve their award until reapplication is possible, giving them no incentive to improve teaching during that period.

OVERVIEW OF SUBJECT-LEVEL TEF DESIGN

The design of subject-level TEF is based on the provider-level framework. We have retained the criteria, the use of benchmarked metrics, provider submissions, the independent panel assessment process and the rating system.

Two alternative models are being proposed for subject-level TEF:

- **Model A:** A 'by exception' model giving a provider-level rating and giving subjects the same rating as the provider where metrics performance is similar, with fuller assessment (and potentially different ratings) where metrics performance differs.
- **Model B:** A 'bottom-up' model fully assessing each subject to give subject-level ratings, feeding into the provider-level assessment and rating. Subjects are grouped for submissions, but ratings are still awarded at subject-level.

Q3: 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)?

Yes – strongly agree

Yes – agree

Neither agree nor disagree

No – disagree

No – strongly disagree

If No, please explain why

The broad categories of Teaching Quality (TQ), Learning Environment (LE) and Student Outcomes and Learning Gain (SO) should be retained. However the split between criteria assessment at provider and subject level needs to be flexible as the split is actually more nuanced than this. Student engagement TQ1, Rigour and Stretch TQ3, Feedback TQ4, Resources LE1 and Personalised Learning LE3 can be evidenced at subject level. Subject-specific provisions should include anything to do with curriculum, teaching, assessment and feedback. Institutional level should include all facilities such as estates, student union, library, IT provision, registry and exams. Valuing Teaching TQ2, Scholarship and Research and Professional Practice LE2 may be best evidenced at provider level. This has been recognised, to some extent, in the provider level submission in Model B, with a focus on TQ2, LE1 and SO3.

For example, certain aspects of the NSS will be appropriate in assessing learning environment at provider level, while subject level assessment of teaching quality could focus more on other evidence such as external examiner reports or consideration of supervision of final year students completing research projects.

Employment and Further Study SO1, Employability and Transferrable Skills SO2 and Positive Outcomes for all SO3, may sit with at department, faculty or provider level depending on the institution.

The Royal Society of Biology remains concerned about the use of outcome data as a proxy for teaching quality. Inclusion of the LEO data goes some way in addressing the issues with the Destination of Leavers from Higher Education (DLHE) data, which only offered a snapshot of where graduates are a short-time post-graduation. However, the evidence to support the broad criteria still requires refining. Bioscience data can be skewed by those going on to further study or completing unpaid internships in order to progress in their chosen field. Bioscience students also enter a range of occupations that may not overtly use their biology knowledge but utilise the transferrable skills gained during the course of their study.

The Royal Society of Biology recognises that the pilot specification weights NSS at half the weight of the other core metrics; however we remain apprehensive of the use of the National Student Survey (NSS) data for the

subject-level TEF as a measure of teaching quality. Currently, Teaching Quality is evidenced through the results of the NSS but there are limitations with this approach.

There is concern that the NSS relies heavily on subjective questions and therefore risks giving undue weight to course perceptions. The survey features relatively few questions which invite factual responses, for example, whether students know who and how to contact for help with course material or whether a course requires regular coursework. The NSS does not offer a complete view of the student learning environment, and lacks questions on how universities support a learning community. Furthermore, the timing of the NSS is unhelpful, as students may only appreciate the value of their course once they are in graduate employment.

We are also concerned student evaluations are at serious risk of conscious and unconscious bias. As noted in our response to the green paper, there is emerging research that suggests that student evaluation of teaching disadvantages female teachers, and this bias varies by discipline, student gender and other factors. If feedback is to be meaningful, from both the NSS and from students who participate in assessment panels, it is essential that there is appropriate support, training and guidance in unconscious bias.

Many degree courses have components of the curriculum that are perceived as difficult by students, for example, chemistry in biology courses or mathematics in physics courses. A desire to score well in the NSS can push a university to remove 'difficult' or unpopular topics from the curriculum, despite their necessity and value.

Boring, A., Ottoboni, K. and Stark, P. (2016) Student Evaluations of Teaching (Mostly) Do Not Measure Teaching Effectiveness

<https://www.scienceopen.com/document/vid/818d8ec0-5908-47d8-86b4-5dc38f04b23e?7>

Q4: 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)?

Please explain your answer. When answering this question, please consider the underlying principles that define Model A (a 'by exception' approach) versus model B (a 'bottom up' approach), and which principle you think we should adopt for subject-level TEF. While we are also interested in detailed comments on the specific design of each model, the final design will likely be a refined version of those presented in the consultation document. This question is therefore seeking views about which underlying approach you prefer. In your response, you may wish to consider the evaluation criteria set out in the specification for the first year of pilots

Outcomes and feedback from providers taking part in subject level pilots should be considered before a decision is made. The Royal Society of Biology would welcome an opportunity to provide further feedback to the DfE after engaging with bioscience departments that have taken part in the pilot to further inform our positions on model A and B.

In advance of additional input from those providers taking part in the pilot, the Society would like to reiterate points made in feedback on the strawmen in 2017:

There are concerns about gaps in information in Model A introduced through the assessment process. Model A would be also less burdensome on the TEF system but this depends on how exceptions are defined.

Model A could allow for a small number of poorly performing courses to be hidden in sufficiently large universities, while allowing universities to hand pick which courses to feature as exceptional. In effect, this could allow pockets of difference to be held under subjective control of the universities themselves. If Model A is implemented there must be clear regulations in when and how a subject may be declared an exception. We feel a "by exception" approach is the least suitable.

In its current form, model B is most burdensome to departments, and there is a concern that departments would be fighting for space or prominence in a subject group submission that may reflect several vastly different styles of programmes and teaching.

To gather meaningful data from Model B will require sufficiently small and well-defined groups of subjects. The CAH2 groups are not currently compatible with Model B, as CAH2 considers subject content alone and does not consider whether the subjects are taught in a comparative way. If subject groups are not well defined, this could invite gaming. Equally, the broad subject classifications in Model B risk individual departments taking over their whole classification, hiding any pockets of difference in quality.

It is difficult to ascertain how Model B would provide any meaningful assessment of teaching at subject-level, particularly for the interdisciplinary topics that do not fall into the broad subject categories, and subjects that fall into two subject areas, for example pharmacology. Feedback from the subject level pilot will be useful in addressing these issues, for example, how many providers assessed under Model B have moved a bioscience subject into different group. The Royal Society of Biology would be happy to engage with bioscience departments that have taken part in the pilot through our Heads of University Biosciences special interest group, in order to provide further feedback to the DfE after pilot submissions have been assessed.

As an alternative approach, a bottom up model with individual submissions from each CAH2 subject would go some way to addressing the concerns set out above. While we recognise burden of the model on assessors as well as departments must be considered, we think that this would vastly improve the meaningfulness of the subject awards to students, and would provide departments an opportunity to consider their TEF submission at a degree programme level.

MODEL A: GENERATING EXCEPTIONS

We are consulting on whether subject ratings should influence provider ratings in Model A. We discuss the option of incorporating a 'feedback loop' into the assessment process.

Q5: 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?

- Yes – strongly agree
- Yes – agree
- Neither agree nor disagree
- No – disagree
- No – strongly disagree**

If No, please explain why. You may wish to comment on variations or options that we have not mentioned.

As stated in Q4, the Royal Society of Biology would welcome the opportunity to provide further feedback after consulting with bioscience departments that have taken part in, the subject level pilots.

The assessment process for Model A is complex, and universities can only submit a proportion of their subjects for assessment, which could lead to gaming. Universities are likely to preferentially choose subjects they think are strong, meaning the average scores may become inflated. Equally, providers could take advantage of their competitors' weaknesses this way. High performing universities may have little incentive to declare subjects an exception, whether a subject merits this or not.

Under this approach, institutions already rated Gold at the provider-level would only be able to submit subjects below this level, and Silver or Bronze awarded institutions would be able to submit subjects above these levels. This may lead to Gold universities being downgraded for some subjects, while Bronze universities are raised for some subjects. This issue could be circumvented by allowing the university to choose a number of subjects. There are two options for choosing the number of additional subjects that might be included. In the first, each university is allowed to include 1, 2 or 3 subjects. In the second option, the number of additional subject is determined according a formula based on the number of 'exceptional' subjects included for review. It should be up to the institute to decide what additional subjects should be included.

b) allowing providers to select a small number of additional subjects?

- Yes – strongly agree
- Yes – agree**
- Neither agree nor disagree
- No – disagree
- No – strongly disagree

Please explain your answer. You may wish to comment on options for identifying the number of additional subjects or on any variations or options that we have not mentioned.

As stated in Q4, the Royal Society of Biology would welcome the opportunity to provide further feedback after consulting with departments that have taken part in, the subject level pilots.

If model A approach is used, allowing providers to select a small number of additional subjects would help cater for the variety of specialities across the sector, while adding more flexibility.

MODEL A: RELATIONSHIP BETWEEN PROVIDER AND SUBJECT ASSESSMENT

We are consulting on whether subject ratings should influence provider ratings in Model A. We discuss the option of incorporating a 'feedback loop' into the assessment process.

Q6: In Model A, should the subject ratings influence the provider rating?

- Yes – strongly agree
- Yes – agree
- Neither agree nor disagree
- No – disagree
- No – strongly disagree**

Please provide as much detail as you can on why and how this relationship should be brought about.

As stated in Q4, the Royal Society of Biology would welcome the opportunity to provide further feedback after consulting with departments that have taken part in, the subject level pilots.

To avoid duplication, subject ratings should not influence the provider ratings in Model A. If provider level assessment is to be replaced by a subject level assessment that in turn produces a provider level rating, Model A will not be sufficient. Exception subjects identified through metrics, along with subjects chosen by the provider, may lead to the same set of subjects being submitted repeatedly for subsequent TEF assessments. If non-exception subjects are automatically awarded the provider level rating, non-exception subjects may be unable to improve their rating as their subject level actions would not impact the exception subjects, and therefore the overall provider level rating that would be awarded at the next TEF assessment.

Institutions with low overall rankings in league tables may boast specialised courses with excellent teaching quality and international reputation. These high quality courses may be damaged if the institutional TEF rating is low, resulting in less comparative income and poorer ability to compete in the market. It will be important to preserve and nurture excellence wherever it occurs, even within otherwise unremarkable institutions, and mechanisms to achieve this must be considered within the overall framework.

MODEL B: RELATIONSHIP BETWEEN PROVIDER AND SUBJECT ASSESSMENT

In Model B, the subject-level assessment takes place first, and the provider-level rating is derived from the subject ratings.

Subject submissions are written for 7 subject groups, but subject ratings are still awarded for the 35 subjects being assessed. The provider-level rating is influenced by the final subject ratings through an element called the 'subject-based initial hypothesis'. This is considered alongside the existing elements of a provider-level assessment. The provider rating is therefore based on a holistic judgement using 3 sources of evidence:

- *Provider-level metrics.*
- *Provider-level submission.*
- *Subject-based initial hypothesis – The final subject ratings are weighted by the number of students studying each subject and combined to reach an initial hypothesis for the provider rating.*

Q7: In Model B, do you agree with the method for how the subject ratings inform the provider-level rating?

Yes – strongly agree

Yes – agree

Neither agree nor disagree

No – disagree

No – strongly disagree

You may wish to comment on the method for calculating the subject-based initial hypothesis, as well as how this is used in the assessment process. We also welcome alternative approaches that do not use the subject-based initial hypothesis.

As stated in Q4, the Royal Society of Biology would welcome the opportunity to provide further feedback after consulting with departments that have taken part in, the subject level pilots.

The subject classifications in Model B are too broad and this may skew the provider rating. The broad range of subject groupings for Model B could have a disproportionate impact on the provider rating, leading to potential inflation or deflation of the final rating, and undermining the accuracy of the system. There are concerns that the subject-based initial hypothesis, used to weigh the final subject ratings on the number of students studying each subject, does not help determine teaching excellence. Although bioscience courses in general are popular, interdisciplinary and bioscience courses that cross subject groupings have smaller numbers. Such a weighting may further reduce the contribution of subjects with small numbers to the provider level rating.

METRICS

This chapter outlines how we propose to apply the existing TEF metrics to subject-level TEF and explores some of the challenges in doing this.

Each participating provider in subject-level TEF will receive both provider-level and subject-level metrics. Subject-level metrics will be reported for each of the 35 subjects in the CAH2 and will include the same metrics and benchmarks as provider-level metrics (except the supplementary grade inflation metric). Providers will have subject-level metrics for each subject they teach.

- **Grade inflation** – *the consultation seeks views on whether grade inflation should apply only in the provider-level metrics.*
- **Distribution of subject ratings** – *We are consulting on whether to allow the distribution of ratings to vary for each subject, or if we should force the same uniform distribution for all subjects. While benchmarking still occurs within subjects, there are certain features of the metrics at subject-level that may affect the distribution profile of subject ratings. These include the marking of very high and low absolute values, clustered metrics, and different levels of external regulation and standardisation between subjects.*
- **Non-reportable metrics** – *TEF metrics are ‘non-reportable’ if the metric does not meet certain reportability thresholds, such as having at least 10 students contributing to it, or meeting certain response rates. Non-reportability is common for metrics that are based on small sample sizes, so often affects small areas of provision. Non-reportable metrics become more common at subject-level because the metrics are disaggregated and reported separately for each of the 35 subjects. To address this issue we are proposing an alternative approach to treating and assessing subjects with non-reportable core metrics. Under this approach options, some subjects would not be assessed or rated, and where assessment does go ahead, the panel would rely on group- or provider-level metrics.*

We note that HEFCE have made institutions’ illustrative subject-level metrics available on the HEFCE extranet. Providers may wish to use this resource to inform their consultation response. Please contact your provider’s TEF contact for details.

Q8: Do you agree that grade inflation should only apply in the provider-level metrics?

- Yes – strongly agree
- Yes – agree
- Neither agree nor disagree
- No – disagree
- No – strongly disagree

If you are able, please provide information about how grade boundaries are set within institutions to inform whether our rationale applies consistently across the sector. Comments on the potential impacts of applying grade inflation only at provider-level are also welcome.

Grade inflation is an important consideration across the HE sector; however subject level TEF is not the place for this. If it is to be applied, a metric aimed at detecting grade inflation may be best set at the provider level. Regulations vary between institutions and therefore how grades are used to obtain a degree class. These regulations are usually set at provider, rather than subject level. However, the approach must be consistent in order to inform students.

Q9: What are your views on how we are approaching potential differences in the distribution of subject ratings?

You may wish to comment on our approach to very high and low absolute values, clustered metrics and regulation by Professional, Statutory and Regulatory Bodies (PSRBs).

It is expected that the distribution of ratings may vary between subjects, and therefore the approach to allowing the distribution of ratings to vary naturally sounds reasonable. The metrics may also cluster within some subjects.

It is important that PSRB accreditation should be recorded. The Royal Society of Biology accredits undergraduate bioscience programmes, and has provided more detail on this in our response to Q11.

Q10: To address the issue of non-reportable metrics:

a) do you agree with the proposed approach?

- Yes – strongly agree
- Yes – agree
- Neither agree nor disagree
- No – disagree
- No – strongly disagree

If No, please explain why.

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)?

Please explain your answer

Under the current approach we would suggest a one year reapplication period if a subject has not been awarded due to non-reportable metrics, and that providers should be able to suggest, with justification, either group or provider level metrics depending on their institution. Departments should be expected to appropriately justify their choice of provider or group to best represent their subject.

ADDITIONAL EVIDENCE

Some sources of additional evidence may be more relevant at subject-level than they were in provider-level TEF. Two key examples are:

- *Meeting the standards set out in the QAA Subject Benchmark Statements*
- *Accreditation or recognition of courses by professional, statutory and regulatory bodies (PSRBs).*

While we recognise the importance of this evidence in subject-level TEF, we are not proposing to make the provision of this evidence compulsory. We propose that providers should continue to be free to choose which additional evidence to include and how they present it in their submissions, both at provider and subject-level.

We are consulting on whether there should be mandatory declaration of certain types of evidence, particularly for certain subjects.

Q11: Do you:

a) agree that QAA Subject Benchmark Statements and PSRB accreditation or recognition should remain as a voluntary declaration, and if not, why?

Yes – strongly agree

Yes – agree

Neither agree nor disagree

No – disagree

No – strongly disagree

If you answered No, please explain why.

If subject TEF is concerned with evaluating courses for teaching excellence and student outcome(s) then it is important to determine that the course has been designed according to criteria set out by learned societies and other educational bodies. For subject areas PSRB accreditation is available in, HEIs should be strongly encouraged to declare if they have been awarded accreditation. However it should be noted that if PSRB accreditation is voluntary for all subjects, it may not be clear to students and parents whether a degree programme has been accredited and chosen not to report it, or has not been awarded accreditation.

In the Wakeham review of STEM degree provision and graduate employability (2016), Wakeham highlighted the importance of PSRB accreditation, and recommendation 7 in that report states “good practice from existing, well established systems of degree accreditation should be shared more broadly across STEM disciplines”. Mandatory declaration would encourage HEIs that have not been through an accreditation process to apply, and may encourage other PSRBs to establish accreditation programmes to further raise standards in their subject area.

RSB Accreditation standards have been developed using QAA benchmark statements as a foundation, building upon those standards to ensure accreditation criteria surpasses threshold standards. The accreditation criteria have been developed in consultation with industry, academics, students and other PSRBs. Criteria are reviewed annually by the Royal Society of Biology’s accreditation committee, with major reviews every 5 years. The primary aim of the accreditation committee is to raise academic standards and signal to employers that graduates from accredited programmes have a known profile of skills. The quinquennial reviews include a consultation with the biosciences community, and ensures criteria are fit for purpose while retaining the aim of raising and maintain education standards in bioscience programmes.

The RSB accreditation criteria are student learning outcome based, which takes into account teaching quality (TQ1, 3, 4), learning environment (LE1,2,3) and Student Outcomes and Learning Gain (SO1,2,3) that are

evidenced through core metrics in TEF. Therefore if RSB accreditation is awarded, there is very strong evidence that the degree programme meets, and exceeds, the QAA benchmark statement, and that the department has provided detailed evidence for 9 out of 10 TEF criteria. Accreditation is a good indicator of the quality of a programme and therefore would be an excellent piece of additional evidence that could be submitted for consideration by TEF panels.

Please see additional comments in Q14 for further discussion of the RSB's work on Valuing Teaching TQ2 in the biosciences.

Wakeham review of STEM degree provision and graduate employability (2016)

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/518582/ind-16-6-wakeham-review-stem-graduate-employability.pdf

b) think that there are any subjects where mandatory declaration should apply?

Yes

No

Please outline which subjects should have mandatory declaration and why

Some subject areas require a license to practice and therefore degree programmes must be accredited in order to be delivered. In these cases, for example Pharmacy, we would expect declaration to be mandatory

The existence of accredited programmes raises standards across the HE sector. The Royal Society of Biology feels that mandatory declaration of degree programme accreditation would be beneficial to the biosciences, as departments without accreditation could be expected to provide an explanation in their submission for why accreditation has not been awarded or sought.

Mandatory declaration would therefore make it more obvious to students why a course hasn't been accredited, this is important for transparency particularly in subject areas such as ours that have newly established accreditation programmes. Departments need time to prepare for accreditation assessment and to meet criteria set by accrediting bodies.

However, we have suggested in our response to 11a that declaration should remain voluntary at this time. We recognise that the current format of submissions through models A and B, and aggregation into CAH2 subjects do not easily align with declaration of individual degree programme accreditation, and that there must be flexibility for subject areas where PSRB accreditation is not currently available.

While we hope that all departments that have been awarded RSB accreditation would declare this in their response, the reasons a department may have consciously chosen not to seek accreditation, or have not been awarded accreditation, would be informative to TEF panels. We therefore reiterate our recommendation that declaration with justification is strongly encouraged, and where it is not declared feedback on subject level ratings notes non-declaration.

Through degree accreditation the Royal Society of Biology aims to recognise academic excellence, drive up standards of teaching and learning in the biosciences, enhance competitiveness for students in a crowded global jobs market and assure the level of employability skills and subject relevant bioscience skills provided by a degree.

The Royal Society of Biology is keen to support all bioscience programmes that aim to meet the criteria for accreditation. The Royal Society of Biology has accredited 47 universities across the UK, which include Degree Accreditation (245 degree programmes at 37 universities), Advanced Degree Accreditation (213 degree programmes at 22 universities) and Master's Degree Accreditation (5 master's programmes at 1 university). Programmes seeking accreditation can be advised on any changes required in order to meet the criteria. Established programmes are assessed on learning outcomes attained by graduates and through interim degree accreditation it is possible for new programmes, with no current graduates, to be assessed.

RSB degree accreditation <https://www.rsb.org.uk/education/accreditation>

INTERDISCIPLINARITY

We are proposing specific approaches for joint versus multi-subject programmes.

- *For **joint programmes**, the two subjects which make up a course will be treated the same as their equivalent single subject programmes. A provider will not be given a separate rating for its joint programmes. Students looking to study a joint honours programme will be able to look at the ratings for each component subject.*
- *To capture **multi-subject (or combined) programmes**, we are proposing to use three broad 'general' subjects for assessment and ratings. Students looking to study a multi-subject degree will be able to look at the ratings for these general subjects to understand the teaching excellence and student outcomes of these courses.*

Q12: Do you agree with our approach to capturing interdisciplinary provision (in particular, joint and multi-subject combined courses)?

To capture multi-subject programmes, Government are proposing to use three broad 'general' subjects for assessment and ratings:

- General and others in sciences
- Humanities and liberal arts
- Combined and general studies

Yes – strongly agree

Yes – agree

Neither agree nor disagree

No – disagree

No – strongly disagree

Please explain your answer. We want to ensure that providers are not discouraged from taking an interdisciplinary approach as an unintended consequence of subject-level TEF. We therefore welcome feedback on how the proposed approach will impact on providers and students.

The proposed approach to capturing multi-subject programmes may not provide meaningful information to students and may prove difficult to compare among institutions. The categories proposed should not be used as a general basket for courses that can be captured in more specific categories.

If the proposed categories are used, the truly general courses in these subject areas such as natural sciences or general courses on humanities, should be clearly distinguished. Students using the TEF data should be encouraged to consult specific ratings, as well, from the disciplines combined in their prospective course. Universities could be encouraged to include data from equally weighted interdisciplinary courses with categories that are closest in the way they are taught.

Combined subject degrees are typically more challenging to run compared with specialist degrees, and progression rates and degree marks tend to be worse as students may not have the same breadth of support available on specialist degrees. Therefore universities with high numbers of combined studies students may suffer unless the demand remains. An extra assessment on combined studies may not be necessary if an institutional review captures all subjects. However, students applying to university may want to know how well particular universities run combined studies courses.

TEACHING INTENSITY

As part of subject-level TEF, we are also consulting on whether to introduce a new measure of teaching intensity. The measures could be used as part of the TEF assessment process, or presented as stand-alone information for students. If used as part of the TEF assessment, they would only apply to subject-level assessments and would not be used to compare teaching intensity between different subjects.

The Government is aware that factors such as contact hours matter to students' perceptions of their studies. The amount and quality of teaching time that students receive is one important factor that affects their learning and education. It is also a factor that is directly under the control of the provider offering the teaching. The Government considers that excellent teaching is likely to demand a sufficient level of teaching intensity in order to provide a high quality experience for the student.

We recognise that teaching and learning takes place in different ways and understand the complexities around capturing these in a single measure. We are therefore seeking views on introducing a measure of teaching intensity and the positive impacts or unintended consequences of implementing this. This chapter presents several approaches on how teaching intensity could be measured and we welcome feedback on these suggestions.

Q13: 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?

Yes – strongly agree

Yes – agree

Neither agree nor disagree

No – disagree

No – strongly disagree

Please explain your answer

As stated in previous questions, the Royal Society of Biology would welcome the opportunity to provide further feedback on this matter after consulting with departments that have taken part in the subject level pilots.

In principle, the introduction of a measure of teaching intensity could be useful to students but in its current form, the metrics suggested are problematic. Any measure of teaching intensity does not necessarily reflect the quality of the encounter or the learning gain. A metric for teaching intensity should focus on quality as well as quantity, recognising different styles of teaching adopted across different subjects and disciplines. At this time we strongly disagree with the inclusion of a teaching intensity metric in TEF, as there is no meaningful measure that reflects good or poor teaching intensity and would place an unnecessary data collection burden on institutions.

Students increasingly value contact time at university. The evidence shows that number of contact hours are linked to student satisfaction levels and perceptions of value for money. However, there is little evidence to suggest that increasing the contact hours will improve teaching quality. Raising contact hours in response to seemingly improving teaching intensity will change the design and nature of degree courses, in particular affecting the development of independent learning. If additional hours are added to timetables and there is a lack of staff to resources this, more graduate students may be utilised for teaching and material may become spread more thinly within a department.

Metrics are unlikely to be equivalent across subjects and type of contact time may vary drastically between universities depending on the composition of the student body. There are concerns that an implication of the suggested metrics is that smaller classes equate to better teaching but this is not necessarily the case where larger classes can be accommodated with different teaching strategies. Bioscience courses are popular and often have large cohorts with large class sizes. This is of particular concern for physiology and other biomedical courses, as large intakes of over 200 students take part in practical work.

Further references:

<http://www.hepi.ac.uk/wp-content/uploads/2016/06/Student-Academic-Experience-Survey-2016.pdf>

Q14: 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?

The relationship between all forms of contact and learning is complex. In the biosciences, a lecture may set out general principles, some aspects of which may be covered in seminars, while the practice of applying the principles may be covered in a practical class, workshop or student presentation.

Universities use a broad range of teaching methods, which should not be limited to the list above. All forms of contact and learning should be considered in a measure of teaching intensity, including tutorials, less formal discussions and distance teaching.

New and innovative approaches to teaching should also be included in the assessment. An increasing number of staff use 'flipped classroom' approaches to teaching, which require teaching materials to be prepared for students to engage with before the 'lecture.'

For many bioscience courses, the number of teaching hours is high to facilitate the combination of theory, practical and field based learning expected yet distance learning may not involve any direct contact hours and can still be highly effective. As the biosciences are inherently practical subjects, it is essential to look at the practical work as a core component of contact time and taught content, as well as the development of research skills through individual and investigative work.

Online support can be an important component to many degree courses and can be a valuable form of learning for many students. Measures of contact and learning for teaching intensity should address high quality digital learning opportunities.

The biosciences are a particularly practical subject area and additional consideration needs to be taken in how programmes meet the needs and enable access for disabled students. The high number of contact hours and requirements to complete additional lab work can also make it difficult for students who need to take on paid work whilst completing their degree.

Q15: 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.

1. *Gross Teaching Quotient (GTQ); external visits and work-based learning; and online teaching*
2. *Student survey on contact hours*
3. *GTQ weighted by qualification/seniority of teacher*
4. *A measure using quantitative and qualitative information about how a student is expected to spend their time on a course*
5. *A measure of engagement with teaching resources*
6. *Measure of staff contracted teaching hours*

If you have an alternative suggestion, you may wish to consider the following factors:

- *Meaningful for students – the ability of the measure/method to provide meaningful information for students.*
- *Value for money – proportionality of the cost of a measure.*
- *Generalisability across the sector – how a measure can be applied and work across the sector.*
- *Accuracy/validity of measures – how accurately data can be collected and verified.*
- *Supporting diversity of provision – the capability of the models to recognise diverse and innovative forms of excellence.*

As stated in Q13, the Royal Society of Biology would welcome the opportunity to provide further feedback on this matter after consulting with departments that have taken part in, the subject level pilots.

Options 1 and 3:

The Royal Society of Biology feels measures based on Gross Teaching Quotient should be avoided. The use of a weighted statistic, based on the number of taught hours and the student : staff ratio to estimate teaching intensity, and therefore quality, is likely to produce skewed results. It may favour courses with greater contact time and omits other important aspects of teaching intensity, such as assessment and research-led teaching.

We have concerns that the GTQ statistic will become a comparative measure, and if a weak GTQ leads to a Silver award, for example, there will be pressure to increase contact hours. Seniority weighted metrics are a poor proxy for quality of teaching. Promotion routes through teaching is often unclear and can be very difficult, completion of appropriate CPD and opportunities to demonstrate updating and refreshing skills would better demonstrate a commitment to improving teaching quality.

Weighting contact hours by student: staff ratio can be problematic, especially when considering the tendency for broad degrees, such as biology, to be taught in large-scale lectures at undergraduate level. Many degree courses within the sciences offer introductory classes to key concepts, which may be attended by several hundred students in larger universities. This can allow freeing up teaching hours for certain higher-level electives which might require more diverse contact time.

Option 2:

The RSB response to Q3 of this consultation sets out persisting concerns on the use of NSS data as a proxy for teaching quality, use of an NSS question on teaching intensity will provide subjective data. Groups of students may have different preferences in learning and universities with objectively similar teaching provisions may still be rated very differently. For example, some types of students may need more tutorials, with direct interaction, or fare better with online sessions. Groups of students may also differ in their expectations of teaching intensity. Not all students would welcome increased contact hours, and that may act as a barrier to some entering university.

Option 4:

Since students' expectations and needs vary so much for teaching intensity, it may be in the interest of prospective students to provide a summary overview of teaching intensity, rather than attempting to use one summary statistic of teaching intensity to rank institutions. A pie chart could be used to provide a summary of teaching intensity, showing the proportion of time using different teaching styles, including a category for independent study.

Option 5:

Attendance and use of teaching resources are not routinely monitored across the sector. Introduction of this metric would increase the burden on departments and HEIs to collect and analyse such data, and ensure their student cohort consent.

Option 6:

As with Option 1 and 3 GTQ: Weighting contact hours by student : staff ratio or class size can be problematic, especially when considering the tendency for broad degrees, such as biology, to be taught in large-scale lectures at undergraduate level. Distance taught courses could also skew the data substantially.

However, student : staff ratio is a well understood, and widely reported data set that can be used to simply assess teaching resource at a subject level. RSB accreditation assessors will note student: staff ratios for current degree programmes, and will raise a concern with department if the resource level appears to cause difficulty in successful delivery of the programme.

Fast-moving subjects such as the biosciences require that teachers use the latest information available. Research-informed teaching may therefore be a useful indicator of teaching excellence for the biosciences. Teachers should be active researchers or have input from those who are.

OTHER COMMENTS

Q16: 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?

The Royal Society of Biology (RSB) is a single unified voice for biology: advising government and influencing policy; advancing education and professional development; supporting our members, and engaging and encouraging public interest in the life sciences. The Society represents a diverse membership of individuals, learned societies and other organisations. Individual members include practicing scientists, students at all levels, professionals in academia, industry and education, and non-professionals with an interest in biology.

The RSB welcomes this opportunity to comment on the Department for Education's Teaching Excellence and Student Outcomes Framework: subject-level technical consultation. The Society has previously responded to the Higher Education: teaching excellence, social mobility and student choice green paper and TEF: technical consultation for Year 2 in 2016. We are pleased to offer this response, informed by comments from our Council, Education and Training Policy Committee, Heads of University Biosciences, Education Policy Advisory Group, member organisations and Degree Accreditation Committee.

TEF should act as both an incentive and support mechanism to improve teaching quality. It should include processes that raise standards across the higher education sector and therefore close any gaps in teaching quality between universities, rather than polarise them.

As stated in questions 4, 5, 6, 7, 13 and 15, the Royal Society of Biology would welcome the opportunity to provide additional feedback, after consulting with bioscience departments in providers that have taken part in the subject level pilots. Our Heads of University Biosciences special interest group, and Education, Training and Policy Committee would then be able to contribute additional evidence of particular bioscience issues identified, and be able to make further recommendations on model A, model B and proposed teaching intensity metrics that may not have been identified as part of this response. The RSB submitted feedback to DfE on the subject level TEF strawmen in February 2017 after consultation with the bioscience community, this feedback was informal and therefore unpublished.

We would like to see more encouragement for teaching academics to engage with educational scholarship to support them to facilitate the best teaching and positive learning experiences for students. Teaching staff can be excluded from scientific conferences and there are few professional support mechanisms in place. Where they do exist, provision is often patchy. Learned societies are increasingly meeting this need.

Institutions should recognise and reward excellent teaching through parity of status between teaching and research careers, and this could be evidenced through TEF criteria TQ2. This is particularly important in the biosciences where research tends to dominate advancement criteria.

In 2014, the Royal Society of Biology and Physiological Society ran a national workshop and survey of over 250 academics in bioscience departments and medical schools across the UK, identifying particular concerns and next steps for shifting the culture and perceptions of teaching and research in HEIs. This was followed up in 2016 with publication of a Higher Education Teacher Career Progression Framework. The RSB is currently in discussions with the Physiological Society, Royal Society of Chemistry and Institute of Physics on future work in this area.

Universities must invest in quality teaching for the future of UK bioscience – Society of Biology and Physiological Society (2014) <https://acmedsci.ac.uk/file-download/34239-53b12afcdce36.pdf>

RSB Higher Education Teacher Career Progression Framework (2016)
https://www.rsb.org.uk/images/HE_Teaching_careers_progression_document_08.02.2016.pdf

The number of staff who have qualifications or recognition in teaching such as the PGCap, Fellowship of the Higher Education Academy or acceptance onto the Chartered Science Teacher Register, nominations received for awards such as the Higher Education Bioscience Teacher of the Year Award or similar should be included as indicators of teaching quality.

Since 2012 the Royal Society of Biology has awarded the Higher Education Bioscience Teacher of the Year Award, recognising and rewarding lecturers who display individual excellence through the design and development of approaches to teaching that have proven successful in promoting bioscience student learning and achievement, undertake scholarly and professional development that enhance the learning of their students, support colleagues and influence bioscience student learning beyond their own department and institution. All finalists are asked to present at the Heads of University Biosciences spring meeting, and case studies are published on the RSB website.

RSB HE Bioscience Teacher of the Year award <https://www.rsb.org.uk/get-involved/rsb-awards/he-teacher-of-the-year>

Previous finalists HEBOTY and case studies <https://www.rsb.org.uk/get-involved/rsb-awards/he-teacher-of-the-year/previous-finalists>

Evidence of demonstrating effective teaching could be a validated reliable assessment of student outcomes such as Prescribing Safety Assessment developed in partnership between the British Pharmacological Society and the Medical Schools Council. The assessment allows all UK medical students to demonstrate their knowledge and competencies in relation to the safe and effective use of medicine.

Previous RSB TEF consultation responses:

RSB response to Higher Education: teaching excellence, social mobility and student choice (Jan 2016)
https://www.rsb.org.uk/images/FINAL_RSB_Green_Paper_Response_Jan_2016.pdf

RSB response to the TEF: technical consultation for Year 2 (July 2016)
https://www.rsb.org.uk/images/Royal_Society_of_Biology_Response_to_TEF_Technical_Consultation.pdf