

Terms of Reference Issue Paper 6: Improving Research Collaboration and Engagement with End-Users

Purpose

This paper aims to provide supporting information for the Performance-Based Research Fund (PBRF) Review panel, as they look at one of the six issues in the Terms of Reference (ToR) for the Review – improving research collaboration and engagement with end-users.

The ToR state that the Review will examine the merits of moving from individual-based assessment to a group-based assessment, in terms of boosting collaboration, supporting workforce development and sustainability, reducing compliance costs and measuring impact of research. If the individual is to be retained as the unit of assessment, the Review will identify options within the PBRF settings to improve collaboration and impact assessment via other PBRF settings.

Background

One of the long-standing issues associated with the PBRF is whether individual assessment is the best way of assessing the research performance of TEOs, or whether a shift to group-based assessment would work better, particularly in encouraging greater collaboration between researchers. The Expert Advisory Group for the 2012/13 Review recommended that a potential move to group-based assessment be considered, with a potential model being developed after consultation with the sector. This paper primarily focuses on the benefits and disadvantages of group-based assessment (with discussion of how it links to collaboration and other issues in the ToR).

The wider research environment is also focused on encouraging research collaboration across a number of initiatives. The fund for Centres of Research Excellence (CoREs) was established in 2001 to encourage the development of excellent tertiary education-based research that is collaborative, strategically focused and creates significant knowledge transfer activities.

Also the National Science Challenges (NSCs), run by the Ministry of Business, Innovation & Employment (MBIE) include “best research team collaboration” as one of their five key principles, and each NSC “involves purposeful collaboration between researchers, across a number of research providers”.¹

Introducing group-based assessment has been cited as a way to improve research collaboration and engagement with end-users. This paper will look at some of the benefits and drawbacks of group-based assessment and briefly cover some of the other potential ways to encourage collaboration.

While the ToR has grouped together improving research collaboration and engagement with end-users, this paper only addresses improving research collaboration. Engagement with end users is instead included in paper 5, which

¹ <https://www.mbie.govt.nz/science-and-technology/science-and-innovation/funding-information-and-opportunities/investment-funds/national-science-challenges/>

discusses boosting the impact of research, due to the linkages between these two subjects.

Issue

There are concerns about the PBRF in its current form disincentivising collaboration; with this being a common concern heard throughout the engagement on the ToR for this review. However research carried out in 2013 on the impact of the PBRF on research collaboration showed that the rate of inter-institutional collaboration (where people from at least two institutions carry out collaborative research) in indexed journal publications by New Zealand university authors has increased since the PBRF was introduced.² It concluded that the PBRF did not appear to have hindered growth in inter-institutional collaboration.

Another issue with group-based assessment is a lack of consensus around how this would impact on transaction costs. Some believe that it would reduce transaction costs, and there is the potential for it to do so at the individual researcher level. However TEOs may add additional steps, which may increase transaction costs, for example individuals could end up having to submit to their TEO in a process similar to a Quality Evaluation, if the TEO wishes to do so to decide which research outputs and contributions to submit. In addition, TEOs would still have similar levels of transaction costs, especially as they transition to a new system.

Benefits of Group-Based Assessment

Group-based assessment has the potential to encourage greater collaboration, particularly within the unit of assessment. For example all of the researchers within the unit of assessment could be greater incentivised to work with and help their colleagues to gain a better overall result. It should be noted that this would be dependent on the assessment requirements, if a sample of outputs from the group is submitted, this could tend to favour the more senior researchers.

Group based-assessment could also address issues associated with individual assessment, such as individuals receiving scores, which was not envisaged in the original PBRF design. Some researchers find this a difficult and non-constructive process to go through, and would perhaps find it easier to receive a grade as part of a group.

More information would be provided at the level of the group, such as the overall research activities of a department, the extent of their engagement with end-users, their research capacity, and their research strategies moving forward. This could be helpful for the group themselves, their TEO, and those interested in the direction of research for particular subjects (if this information was made publically available).

Group-based assessment could also encourage better mentoring within those units of assessment. For example, if senior researchers are no longer as preoccupied with their own grade, they may feel more able to make time and opportunities for their younger colleagues. This is linked to the issues of sustainability of the workforce, also included in the ToR.

² 'An analysis of collaborative journal article authorship at New Zealand universities', Warren Smart, Roger Smyth & Shaun Hendy, 2013.

As discussed in paper 5, group-based assessment provides a more appropriate way to assess impact as non-academic impact is often associated with the research activity of a group, rather than an individual.

Drawbacks of Group-Based Assessment

There are some questions around the extent to which group-based would actually increase collaboration. While it could increase collaboration within the unit of assessment, collaboration across disciplines within TEOs, at the cross-TEO level or with industry would not appear to be incentivised any more than under the current system.

Group-based assessment could also mean the loss of some of the benefits of individual assessment. For example, the PBRF would no longer consider the full breadth of researchers across the system in the detail it currently does (including the demographic data that we currently see as part of the Quality Evaluation process, and its links to grades received).

Also the incentives for TEOs to support all researchers in carrying out high quality research could be weakened (especially if they only had to put forward a fairly limited number of research outputs, allowing them to pick and choose which researchers they chose to submit). Individual assessment also comes with a strong accountability mechanism for individual researchers to continue to produce high quality research, which could be lost with group-based assessment (the 'coat-tailing' effect).

There would also be issues with defining groups for assessment (especially in smaller TEOs where departments can be fairly small), for example whether this is done by department, through self-selection of groups or through another method. Another issue would be how to consistently assess groups, i.e. how many outputs to examine, and who in each group those outputs should be from. Related to this is how peer review would work, particularly in smaller fields where panel members might end up reviewing the work of their own faculty/department.

Linked to this, smaller TEOs could struggle due to research being undertaken by individual researchers with limited time for research, rather than being led with a strong departmental focus, as is achievable in the universities. However this could benefit the wānanga sector where researchers tend to work collectively, with knowledge generation and development belonging to the whole, rather than the individual.

It should also be noted that this change (and any other large change) would lessen the ability to make comparisons between Quality Evaluation rounds and track changes and patterns over time. For example, the work being done on the link between PBRF and gender by Dr Brower and Dr James would become more difficult if they did not have the granularity of data that individual assessment provides.

Possible Other Areas for Consideration

Optional Group-Based Assessment

One option that has been discussed is to introduce group-based assessment, but on an optional basis (i.e. research staff or their TEO could choose to have someone assessed on a group basis or individual basis). This does encounter issues around consistency and fairness, such as how comparisons could be made between an

individual 'A' grade and a group 'A' grade, and if researchers were able to choose which system they were assessed under.

It would also introduce greater complexity to the system, especially as panels may need to make comparisons across the two different forms of assessment throughout QE processes.

Double Counting External Research Income

Under the current system, external research income cannot be attributed to more than one TEO (instead the total amount received is split proportionally). We have heard this has the potential to create a disincentive to collaborate across TEOs on research projects. Allowing both TEOs to count the full value of the external research income would remove this disincentive.

Annex 1: International comparisons

United Kingdom

In the United Kingdom, the Research Excellence Framework (REF) uses group based assessment, institutions are required to organise research staff by set units of assessment (there are 34 for the 2021 REF, based on subject areas) and make one submission per unit of assessment. An exception can be requested for very small units, usually those with less than five FTE.

It is up to the individual institutions to decide which unit of assessment staff will sit under, keeping in mind that the research carried out in a submitted unit must relate primarily to the areas of research set out in the descriptor of the unit of assessment.

Each submission will comprise a complete set of data about staff, outputs, impact and the environment in that unit of assessment. Submissions must include a set number of research outputs, equal to 2.5 times the combined FTE of staff in the unit of assessment (ie if there is an FTE of 12 staff, there would be 30 research outputs submitted). Staff and outputs have been decoupled for REF 2021, so it is not expected that all staff members would have the same number of outputs included. However institutions must document and apply fair and transparent processes for the selection of outputs, taking into account equality and diversity considerations.

Hong Kong

While institutions are required to submit individual staff members research outputs for the Research Assessment Exercise (RAE), the quality of research is assessed at a unit of assessment level.

Australia

As with the Engagement and Impact Assessment (EI), the Australian Research Council (ARC) takes a group-based approach for the Excellence in Research Australia (ERA).

The unit of evaluation is based on the Fields of Research from the Australian and New Zealand Standard Research Classification (ANZSRC), which is not currently used in New Zealand. Evaluations occur at the two- and four-digit Field of Research code levels for units of evaluation that met the low volume threshold. Units of evaluation do not correspond to named disciplines, departments or research groups within an institution.

ERA is based on the principle of expert review informed by indicators. The ERA 2018 evaluations were informed by three broad categories of indicators:

- Indicators of research quality—considered on the basis of a publishing profile, citation analysis, ERA peer review, and peer reviewed Australian and international research income
- Indicators of research activity—considered on the basis of research outputs, research income and other research items within the context of the profile of eligible researchers
- Indicators of research application—considered on the basis of research commercialisation income, patents, plant breeder's rights, registered designs, and National Health and Medical Research Council (NHMRC)

Endorsed Guidelines. Some other measures, such as publishing behaviour and some other categories of research income, can also provide information about research application.

The ERA indicator suite was developed to align with the research behaviours of each discipline, and makes up a mixed method of peer review and metrics. For this reason, there are differences in the selection of indicators. The indicators that apply to each discipline (as defined by two- or four-digit Fields of Research) are shown in the ERA 2018 Discipline Matrix and are quite complex.³

³ <https://www.arc.gov.au/excellence-research-australia/key-documents>.