



Guidance for REF2021 Reviewers of outputs – Main Panel B

Some general comments on output assessment

REF panellists will assess each output according to the panel criteria agreed for REF2021.

The main questions to answer are:

Does the output meet the REF definition of research?

Where an output does not meet the REF definition of research, it should be flagged and marked *unclassified*.

For other outputs, the assessment criteria listed below apply.

Is it interdisciplinary according to the REF definition of interdisciplinary research?

If the output is considered interdisciplinary within the REF definition, additional assessment criteria apply. These are listed below.

How does it meet the quality level descriptors published by the relevant main panel?

The REF has agreed star level definitions that apply across all panels. In addition, each panel has agreed level descriptors to guide the assessment of outputs. Reviewers are invited to assess the extent to which the output meets those descriptors.

The general descriptors and additional criteria are given below.

Please note:

For **co-authored outputs**, the REF does not take into account the relative contribution of the submitting author. Once it has been established that the submitting author has made significant contribution to the output, the overall quality of the output will be assessed. If, as a reviewer, you are in doubt whether the submitting author has made a significant contribution, then this should be raised separately. We do not normally expect any comments on co-authorship or relative contributions as part of internal assessment.

Double weighted outputs – Panel B anticipates that it will double weight outputs only where they derive from substantial academic endeavour by the member of staff against whom the output is listed in the submission. Such endeavour might be understood in terms of (but is not limited to) the ambition of the project. The expectation is that requests for double weighting will occur only exceptionally. The panel does not expect that journal articles and conference proceedings will normally embody work of this nature.

Journal impact factors, and generally journal reputation, will not be taken into account by REF panellists and should not be taken into account by REF reviewers. This applies to all disciplines, including those where journal impact factors are important within the disciplinary culture.

Citations will form part of the assessment for all sub-panels under main Panels A and some sub-panels under main Panel B (7: Earth Systems and Environmental Sciences; 8: Chemistry; 9: Physics; 11: Computer Science), and for 16: Economics and Econometrics under main Panel C. The REF team will provide institutions and panellists with citation counts and contextual information to inform their decisions. For the purposes of internal review, we suggest that reviewers arrive at an initial decision on REF quality based on the output alone, and citations will be considered at the selection stage of the process.

Panel remits: please assess the output(s) you have been invited to review under the specific panel remit you were given. The panel remits have been published by the REF team:

https://www.ref.ac.uk/media/1084/ref-2019_02-panel-criteria-and-working-methods.pdf, pp 9ff. If you are in any doubt whether an output meets the panel remit for which it is being reviewed, please state that in your review. If, in your view, the output would benefit from cross referral to a different panel, it would be helpful to mention that in your review.

The REF team have confirmed that the panels will deal with interdisciplinarity and cross referrals entirely separately – an interdisciplinary item will only be assessed by the panel to which it has been submitted, using the additional criteria shown below, unless the submitting institution has made a request for cross referral. We can ask for cross referral for outputs that are not marked as interdisciplinary. Please note also that cross referral is at the discretion of panel members – we may request cross referral but it is not automatically granted. Equally, the panel to which an item is cross referred may suggest a grade, which may or may not be taken into account in the final grade assigned by the panel to which the output was submitted originally.

REF2021 Guidance and Assessment Criteria (excerpts from REF documentation)

The following definitions and descriptors are taken from the REF draft Guidance on Submissions and the REF draft panel criteria and working methods (REF2018/01 and REF2018/02). You can access the full documents here:

REF draft Guidance on Submissions: https://www.ref.ac.uk/media/1092/ref-2019_01-guidance-on-submissions.pdf

REF draft panel criteria and working methods: https://www.ref.ac.uk/media/1084/ref-2019_02-panel-criteria-and-working-methods.pdf

Definition of Research

For the purposes of REF, research is defined as a process of investigation leading to new insights, effectively shared.

It **includes** work of direct relevance to the needs of commerce, industry, culture, society, and to the public and voluntary sectors; scholarship, the invention and generation of ideas, images, performances, artefacts including design, where these lead to new or substantially improved insights; and the use of existing knowledge in experimental development to produce new or substantially improved materials, devices, products and processes, including design and construction. It **excludes** routine testing and routine analysis of materials, components and processes such as for the maintenance of national standards, as distinct from the development of new analytical techniques. It also **excludes** the development of teaching materials that do not embody original research.

It **includes** research that is published, disseminated or made publicly available in the form of assessable research outputs, and confidential reports.

Scholarship for REF is defined as the creation, development and maintenance of the intellectual infrastructure of subjects and disciplines, in forms such as dictionaries, scholarly editions, catalogues and contributions to major research databases.

Outputs will be assessed in terms of:

Originality will be understood as the extent to which the output makes an important and innovative contribution to understanding and knowledge in the field. Research outputs that demonstrate originality may do one or more of the following: produce new empirical findings or material; engage with new and/or complex problems; develop innovative research methods, methodologies and analytical techniques; show imaginative scope; provide new arguments, formal innovations, interpretations and/or insights; collect and engage with novel types of data; and/or advance theory or the analysis of doctrine, policy or practice, and new forms of expression.

Significance will be understood as the extent to which the work has influenced, or has the capacity to influence, knowledge and scholarly thought, or the development and understanding of policy and/or practice.

Rigour will be understood as the extent to which the work demonstrates intellectual coherence and integrity, and adopts robust and appropriate concepts, analyses, theories and methodologies.

REF definition of Interdisciplinary research:

For the purposes of REF, interdisciplinary research is understood to achieve outcomes (including new approaches) that could not be achieved within the framework of a single discipline. Interdisciplinary research features significant interaction between two or more disciplines and / or moves beyond established disciplinary foundations in applying or integrating research approaches from other disciplines.

Interdisciplinary outputs will be assessed against the generic criteria of originality, significance and rigour. In assessing interdisciplinary outputs, the sub-panels will make use of additional guidance provided by the Interdisciplinary Research Advisory Panel (IDAP). The following guidance will work in parallel with – rather than replace – the generic criteria:

Originality and significance can be identified in one, some, or all of the constituent parts brought together in the work, or in their integration; they do not need to be demonstrated across all contributing areas/fields.

Rigour can be understood in the context of interdisciplinary research as the design and application of relevant and robust approaches, methods and concepts to achieve productive interactions between the disciplines.

Output quality sub-profile: definitions of starred levels

- Four star:** Quality that is world-leading in terms of originality, significance and rigour
- Three star:** Quality that is internationally excellent in terms of originality, significance and rigour but which falls short of the highest standards of excellence
- Two star:** Quality that is recognised internationally in terms of originality, significance and rigour
- One star:** Quality that is recognised nationally in terms of originality, significance and rigour
- Unclassified:** Quality that falls below the standard of nationally recognised work. Or work which does not meet the published definition of research for the purposes of this assessment.

Panel B Supplementary Criteria – Level Definitions

In assessing outputs, the sub-panels will look for evidence of originality, significance and rigour and apply the generic definitions of the starred quality levels as follows:

a. In assessing work as being **four star** (quality that is world leading in terms of originality, significance and rigour), sub-panels will expect to see evidence of, or potential for, some of the following types of characteristics:

- agenda-setting
- research that is leading or at the forefront of the research area
- great novelty in developing new thinking, new techniques or novel results
- major influence on a research theme or field
- developing new paradigms or fundamental new concepts for research
- major changes in policy or practice
- major influence on processes, production and management
- major influence on user engagement.

b. In assessing work as being **three star** (quality that is internationally excellent in terms of originality, significance and rigour but which falls short of the highest standards of excellence), sub-panels will expect to see evidence of, or potential for, some of the following types of characteristics:

- makes important contributions to the field at an international standard
- contributes important knowledge, ideas and techniques which are likely to have a lasting influence, but are not necessarily leading to fundamental new concepts
- significant changes to policies or practices
- significant influence on processes, production and management
- significant influence on user engagement.

c. In assessing work as being **two star** (quality that is recognised internationally in terms of originality, significance and rigour), sub-panels will expect to see evidence of, or potential for, some of the following types of characteristics:

- provides useful knowledge and influences the field
- involves incremental advances, which might include new knowledge which conforms with existing ideas and paradigms, or model calculations using established techniques or approaches
- influence on policy or practice
- influence on processes, production and management
- influence on user engagement.

d. In assessing work as being **one star** (quality that is recognised nationally in terms of originality, significance and rigour), sub-panels will expect to see evidence of, or potential for, some of the following types of characteristics:

- useful but unlikely to have more than a minor influence in the field
- minor influence on policy or practice
- minor influence on processes, production or management
- minor influence on user engagement

e. Research will be graded as '**unclassified**' if it falls below the quality levels described above or does not meet the definition of research used for the REF.

Any further questions about external review should be directed to your Dean of Research

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