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Communicating knowledge: How UK researchers' decisions on where and how to disseminate their research results is affected by both the changing technological environment and research evaluation

Abstract: This paper presents evidence gathered via a research project undertaken by Manchester Metropolitan and Loughborough Universities during 2009. Data was gathered using bibliometric analysis, focus groups, interviews and an online survey. It presents a current view of how researchers communicate their work across the range of disciplines in the UK.

Résumé : Cette communication présente les résultats d'un projet de recherche entrepris conjointement par les universités Manchester Metropolitan et Loughborough en 2009. Les données ont été recueillies au moyen d'analyses de bibliométrie, de groupes de discussion, d'entrevues et d'un sondage en ligne et donnent un portrait actuel de la façon dont les chercheurs de plusieurs disciplines communiquent leurs résultats de recherche au Royaume-Uni.

1. Introduction

Researchers seek to develop new knowledge and understanding of the world in which we live and to communicate their findings to others. However, they are being pulled in different directions in deciding where and how to communicate their findings; in addition to the well-established channels such as professional society journals and conferences; they are faced with a plethora of additional options ranging through open access journals and institutional repositories to less formal methods such as personal web sites or even social networking tools. This paper presents evidence gathered via a research project undertaken collaboratively between Manchester Metropolitan University and Loughborough University during 2009. Data was gathered using bibliometric analysis, focus groups, interviews and an online survey. It presents a current view of how researchers communicate their work across the range of disciplines in the UK. The paper examines the motivations, incentives and constraints that lead UK researchers in different subjects and disciplines to publish and disseminate their work in different ways. Of particular interest to colleagues in North America might be the exploration of how and why they cite other researchers' work, as well as how their decisions on publication and citation are influenced by past and anticipated research evaluation mechanisms. This research was undertaken at a time when there has been considerable debate about the form of the Research Excellence Framework (REF) as a replacement for the well established Research Assessment Exercise.

2. Research context

The United Kingdom has undertaken regular research evaluation exercises for the last 20 years. The outcome of the last exercise was announced in December 2008 and consultation began on the next exercise in early 2009. The methods used in the various exercises have tended to be evolutionary rather than revolutionary building upon the lessons learned in the previous exercise and modifying the process accordingly. However the next exercise promised to be radically different with politicians suggesting that the

established process of Peer Review by a series of subject-based panels be replaced with an essentially metrics based approach using largely research income and citation analysis as the basis for research evaluation.

Our research was undertaken at a time of major technological change affecting the scholarly communication process and at a time when there was considerable concern in the academic community that extensive use of citation analysis would become a major part of the research evaluation. The research funders, the Joint Information Systems Committee (JISC) and the Research Information Network (RIN) were anxious to ascertain the impact of both these factors on scholarly communication. The Funding Councils who manage the Research evaluation exercises on behalf of the government used the findings from the research as a part of the evidence base on which they have made their latest proposals for research evaluation in the United Kingdom.

3. Research design and methods

The research used a mixed methods design. The intention of the mixed methods approach was to provide as complete a picture as possible of scholarly communication in the UK and factors influencing it and to provide a baseline with which future studies could be compared. As well as the obvious literature review, the project involved a bibliometric analysis, online questionnaire and a series of focus groups with participants from a range of different disciplines in three different geographical locations.

For the bibliometric analysis we wished to identify a sample of some 400 academics across all disciplines whose publications we could analyse. The sampling frame was drawn from the publicly available submissions to the RAE 2001 and RAE 2008 and stratified across broad disciplinary areas and we added 30% to our target number on the assumption that not everyone would have published in the years selected for analysis. The publications in the years 2003 and 2008 of the chosen sample were analysed. We analysed the types of publications and the types of authorship (singly authored, multiple authorship, within institution or across institution co-authorship). In addition we examined and categorized the items cited within the identified publications.

A questionnaire was devised and executed electronically using a UK-based service operated by Bristol University. The survey was designed, at the request of the funders to be usable at a future date so that longitudinal studies could be undertaken. Invitations to complete the questionnaire were sent individually to approximately 2,000 academic colleagues. Some 857 usable responses were returned.

Finally a series of eleven focus groups were undertaken which involved 87 academic staff drawn from 46 different universities. The focus groups were held in Manchester, London and Edinburgh. Each focus group was made up of colleagues from a different discipline. The disciplines were determined by reference to the RAE panels and to Whitley's typology of disciplines with the intention of covering as broad a range of subject as possible[1].

4 Key findings

The project yielded a wealth of data and demonstrated the difficulty of generalizing across disciplines. The key findings from the research can be summarized as follows:

1. Researchers need better guidance on the value of different communication channels

- Many researchers are confused by the mixed messages they receive about how to communicate their findings.
- To make best use of the communication channels open to them, researchers need more consistent and effective guidance on the value attached to the different channels they see as appropriate to their work.
- If funders and policymakers want to encourage researchers to publish and disseminate their work through channels other than scholarly journals, they need to give stronger and more positive messages about how they will be valued when it comes to assessing researchers' performance.

2. The attribution and listing of multiple authors varies widely between disciplines

- It is important that everyone involved in assessing research – whether through bibliometrics or peer review – is well informed about different listing conventions and their meaning, and how they are changing.
- Funders, learned societies and publishers may also wish to consider whether they could become more involved in helping to devise good practice guidelines.

3. Citation behaviour and motivations are related to research discipline and the researcher's age or experience

- Younger researchers are more likely to be influenced by an author's credentials or familiarity, a journal's reputation and how easy it is to access an article.
- If such differences persist as young researchers progress through their careers, funders and others involved in assessing research performance may need to take account of significant changes in citation patterns.
- Some high-status journals impose limits on the number of references that can be included in an article. If such limitations become more common, one effect could be to reduce the usefulness of citation data for bibliometric and assessment purposes, even in fields where citation data is currently considered robust.

4. The influence of the Research Assessment Exercise (RAE) is a major concern for researchers

- The RAE and related institutional policies have a major influence on researchers' decisions to publish in scholarly journals and in which particular journals they try to publish.
- For many researchers, the RAE is a disincentive to any form of dissemination other than scholarly journals. Since journal articles are the publications most readily measured in any form of performance assessment, there is a risk that their dominance will increase.
- The timescales for research, recognition and impact also vary widely across different disciplines and kinds of research. Research timescales need to be carefully considered in any arrangements for the assessment of performance.
- Possible changes in citation practice will need to be closely monitored as the REF develops.

The project led to a report which presents the main findings in a readable form which is deliberately chatty and approachable rather than academic in tone. It is backed up by four additional documents which provide detailed descriptions of the methods used and the data gathered. These are all available as pdf files on the funders website[2].

5. References

Whitley (2000) (2nd ed.) *The intellectual and social organization of the sciences*. Oxford: Clarendon Press.

Research Information Network (2009) Communicating knowledge: how and why researchers publish and disseminate their findings. <http://www.rin.ac.uk/our-work/communicating-and-disseminating-research/communicating-knowledge-how-and-why-researchers-pu> (visited 16th April 2010)