Guidelines to Faculties on broadening the Assessment of Research Impact

Introduction

The University of Cape Town (UCT) has adopted policy in support of Open Science, including the Intellectual Property Policy (2011), the Open Access Policy (2014), and the Research Data Management Policy (2018).   Open science speaks directly to the values (UCT) strives to achieve in excellence, transformation and sustainability: addressing maximised inclusivity, equitable partnerships, transparency in decision-making and sharing of publicly funded science as a public good. Research assessment is a powerful tool in the transition of robust research practice to Open Science, enabling best practice in evaluation that is more accurate, transparent and responsible.

Open Science is a paradigm shift towards a cooperative spirit in sharing research outcomes that requires a change in the way researchers are evaluated. Without careful attention to broadening our own definitions of excellence, the proven risk - especially for emerging researchers - of departing from the old principles of competition that continue to paralyse scientific communications remain too high: viz. to publish as often as possible, in journals with the best possible reputation.[1] National policy indications of this shift are emerging in the broader impact narrative sought in NRF assessments, as well as the Department of Higher Education and Training (DHET) *Policy on the evaluation of recognition of creative outputs and innovations for the purpose of recognition and reward of quality creative outputs and innovations produced by public higher education institutions*.[2]

Few young people decide on a career in science in order to outperform other researchers in terms of the number of papers published or the popularity of their papers amongst other scientists. Instead, they develop an interest in scientific research – and make the difficult, and at times costly choice to enter a career in research – motivated by a desire to do better for people, to advance a business objective, or even to improve the wellbeing of society. But the academic incentive and rewards systems tend to favour, compensate and advance researchers based on the number of their publications, not on the socio-economic impacts of their research. This creates an often un-necessary tension between output-driven and impact-inspired science.

This document serves to help Faculties consider broadening their assessment beyond the Journal Impact Factor (JIF) as a single evaluation metric. The expansion of assessment should include qualitative as well as quantitative evaluation and excellence in locally relevant research should be encouraged[3]. Further, assessment should include recognising and rewarding behaviour in

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[1] Saenen, B., Morais, R., Gaillard, V., & Borrell-Damián, L. (2019). Research Assessment in the Transition to Open Science: 2019 EUA Open Science and Access Survey Results. European University Association. https://www.ouvrirlascience.fr/wp-content/uploads/2019/10/EUA_Research-assessment-in-the-transition-to-open-science_2.pdf

[2] Policy on the Evaluation of Creative Outputs and Innovations produced by South African Higher Education Institutions (2017) in terms of the Higher Education Act 1997, (Act no. 101 of 1997). https://www.dhet.gov.za/Policy%20and%20Development%20Support/2017%20Research%20Outputs%20report.pdf

[3] Hicks, D., Wouters, P., Waltman, L., De Rijcke, S. and Rafols, I., 2015. Bibliometrics: the Leiden Manifesto for research metrics. *Nature.* 520 (7548): 429-431.

strengthening research integrity[4]. Thus, the document serves to assist researchers in thinking about the impact of their research more holistically.

1. Impact Statement

Applications for research grants, ad hominem promotions, NRF rating, etc. often require a statement on research impact. This may be addressed by researchers in brief narrative statements describing the quality, significance, and impact of the most important outputs over the last 5 years, and outlining their own contributions to these, indicating the ongoing sustainability of the research. In the case of engaged scholarship, a statement may document stages of the theory-to-engagement-cycle: including discovery of new knowledge, development of that knowledge, dissemination of knowledge, learning change, behavior change and economic, environmental or social change. The statement should speak to the alignment of the candidate's work with the values of UCT (captured in the mission dimensions of the university which are Excellence (and Relevance), Sustainability and Transformation). Local relevance should be one of the leading concerns and one of the key performance criteria, especially in resource poor research environments of low- and middle income countries of the Global South in which UCT is located.

The impact statement should include the names of at least three referees who can comment on the quality of the research. Institutions and faculties differ but three common goals seem to bind them:

- creating a system that recognizes and rewards behavior that advances each of the mission dimensions;
- ensuring that promotion guidelines are fair and promote quality work; and
- developing guidelines that clarify what work is acceptable within the mission dimensions, the criteria by which it will be evaluated, what constitutes acceptable documentation and the process by which it will be evaluated.

We know that the quantitative approach tends to have more appeal and clout, especially among decision-makers craving clear and simple answers. In order to compare, performance must be observable and as measurable as possible. This urge for easily accessible information created a powerful drive for registering observable research outputs.

The increased ubiquity of the term 'research excellence' should be discussed by faculties/university. What does the term mean in the Global South and in the context of transformation given that research practice is collaborative, transdisciplinary and interdisciplinary. Using the term 'research excellence' should, ideally, imply that it can be defined, recognised and assessed.

Below are suggested products of research for consideration in developing a statement on research impact, based on the following principles:

- It should not be assumed all academics must provide evidence of the quality and impact of their work via a very narrow set of traditional indicators. Inste. ad it is advisable to identify a

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[4] Moher D., Bouter L., Kleinert S., Glasziou P., Sham M., Barbour V., et al. 2020. The Hong Kong

Principles for assessing researchers: Fostering research integrity. *PLoS Biol*ogy. 18(7): e3000737. https://doi.org/10.1371/journal.pbio.3000737

set of criteria that might be used to assess the products of all scholarship, and that provide multiple ways faculty members can document their achievements.

- Academics could be encouraged to present a case for the impact of scholarship in ways that capture the intent of their knowledge-making. Products showing impact could include funding from multiple sources, policy reports, downloadable curriculum, diagnostic instruments, broadcasts, discussion of research in legal cases and policy reports.

1. 1 Research outputs:

a) List all peer-reviewed outputs which could include articles, books and book chapters, refereed publications, creative works, etc. during the last 5 years for which you were(joint) first author, (joint) last (responsible/senior) author, or leader of a substantive component.

b) List the 10 most important outputs, including non-peer reviewed articles, conference papers, technical reports and policy briefs, artefacts, productions, prototypes etc.   during the last 5 years for which you were (joint) first author, (joint) last (responsible/senior) author, or leader of a substantive component. Preferential weighting is given to original research contributions (as opposed for example, to review articles).

c) Provide short narratives on your most important outputs (max 10) listed in(b)above (50 - 100 words per outputs). This should be written and phrased as a self-assessment narrative of research outputs. Each statement should describe the quality, significance and impact of the work, as well as your contribution to the work. It is particularly important to describe aspects of the work that you led, where this was the case.

1.2   Research funding:

a) Active research grants. Include: Project title; Funder; Duration of award; Total amount of funding awarded; Role in project (e.g. PI/UCT PI/ Co-investigator with formal role in application process/ Leader on a major component).
b) Research grants completed in the last 5 years. Include: Project title; Funder; Duration of award; Total amount of funding awarded; Role in project (e.g. PI/ UCT PI/ Co-investigator with formal role in application process/ Leader on a major component).
c) Describe your plan for securing further funding to sustain your research (maximum of 200 words).

1.3   Research Recognition

a) Citations and other relevant indices in the area of research, e.g. citations per publication; or normalized indices such as h-index or field-weighted citation index.
b) Professional projects or creative works forming the subject of other works;
c) Awards & ratings (NRF ratings, winning professional projects, competitive funding for creative work, invitations (to participate in curated exhibitions, to present creative or professional works, to sit on expert panels and conference organising committees, to participate in formation of research-based policy, present plenaries and key-notes, etc.
d) Media invitation to provide expert commentary

1.4   Other contributions to research:

Provide brief narratives on other contributions to research, some examples are listed below:

a) *Publication of datasets and evidence of data sharing that make research data Findable, Accessible, Interoperable, and Reusable (FAIR).*
Most researchers appreciate the benefits of sharing research data as a contribution today that enables new science tomorrow.   Evidence shows that studies based on analyses of previously published data can achieve just as much impact as original projects. [5] Data sharing provides greater visibility of one's work, reciprocal data exchanges, and the reassurance of having one's data properly cited and its value recognised by others. The UCT Research Data Management Policy[6] clarifies the changing norms of the research community and poses a positive motivation to share in a manner that benefits the advancement of science.

b) *Software, analytical workflows, new research methods, e.g. shared online*
Robust research practice is evidenced in the transparency and reproducibility of the published scientific literature and associated outputs. Although there has been greater recognition of the sharing of data, opportunities exist to improve reproducible research practices to include innovative methodologies as well as the data collection tools used for collating the data. Mechanisms for collaborative research practice empower scientists to disseminate their experimental protocols, software and workflow designs; and to benefit from those developed by others.

c) *A sustained process of building a relationship, e.g. community advisory group, new international consortium, working group multi-sectoral stakeholders*
Trust is earned, not given. Building lasting relationships takes sustained effort, time and energy not only in the design phase but also during the entire course of a research project. Particularly inter- and transdisciplinary research is usually carried out in medium- to large sized teams of participants and/or stakeholders with different backgrounds and differing – typically conflicting - world views, who first need to be unified towards a shared view of a research objective, and whose motivation and participation constantly need to be navigated during the course of the research project (or research programme), towards achieving that objective.

Such relationship-building is often carried out by more senior researchers whose position guarantees continuity through time, and whose experience can see the group through both the interpersonal and intellectual difficulties which inevitably will arise in this kind of research. It does, however, take many hours during a week (not necessarily during standard office hours, depending on the availability of research participants) spent on phone calls, emails or even messaging, not traditionally regarded as core business of a researcher. Efforts of this nature can easily extend over two years before leading to any output that would be considered worthwhile in the traditional evaluation of research (e.g., a completed thesis or a publication), and the real value of such

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[5] Data sharing and the future of science. *Nat Commun* **9,** 2817 (2018). https://doi.org/10.1038/s41467-018-05227-z

[6] UCT Research Data Management Policy

relationship-building often takes five years to show in a set of results such as changed livelihoods in communities, or a suite of student projects completed with diverse supervisors, which can be synthesized by the group. Milestones of relationship-building which can be documented, include collaborative research agreements with groups of non-academic participants, this research taking place and yielding results; formal meetings with the full, diverse complement of working group participants (such as community leaders, government, industry and NGOs) including a report that is acceptable to / signed off by all; large project proposals (15+ diverse participating institutions) being completed and submitted for funding, the successful negotiation of the consortium agreement if the proposal is funded, and research collaborations materializing with the funding awarded.

d) *Professional practice*
A researcher may contribute to their profession or field by providing skilled service to the sector, enabled by their research expertise. This may contribute both to the progression of the field as well as to the researcher's professional development. Examples include providing expert peer-review for journals and for grant applications, serving on funder advisory or selection panels, and serving on institutional or consortium advisory boards or steering committees.

e) *Policy adoption or change in practice in sector*
A researcher may contribute their expertise to drive changes in policy or practice in their field or a related field. Examples include serving on policy development task teams for governmental or non-governmental bodies (e.g. operational or advocacy NGOs such as charities, foundations, humanitarian networks, aid organisations), coordinating policy development teams, drafting new/revised policies, and leading or guiding the implementation of an evidence-based change in practice (e.g. rollout of a new form of medical treatment, adoption of a new labour law or assumption of a new environmental practice).

f) *Socially responsive research practice*
This form of research is work that meets a direct need or renders a direct service in, and to society. Society is broadly defined as all external non-academic constituencies. Below are some direct extracts for the policy framework identifiying the current understanding of the work at UCT, and its importance in UCT's role as a public higher education institution.

In 2006 UCT's Senate adopted a definition of social responsiveness reflecting the view that UCT should not seek to define the concept of Social Responsiveness in a narrow or exclusionary fashion, but should rather adopt broad parameters for its conceptualisation encompassing contributions to economic, cultural, environmental, and social development. The term 'social responsiveness' has been chosen given the emphasis in the mission on engaging with key development issues facing the country through its research (and teaching). This approach was formally endorsed in 2006 when the

university Senate approved a definition of social responsiveness that stipulated that social responsiveness must have an intentional public purpose or benefit (UCT, 2006).

This definition reflects the university's commitment to utilising the resources of the university to contribute to addressing major development challenges facing the country and the continent more broadly. Some, but clearly not all, of these challenges relate to issues of poverty and social disadvantage within our South African and wider continental context. What is critical is that there needs to be an intentional public benefit or service. The work in many disciplines is inherently society-focused; what sets socially responsive research apart from the everyday work in disciplines is the intentionality and public benefit of the work.

In terms of guidelines for broadening the impact of socially responsive research practice, developing a detailed narrative is a very important starting point. While there will be the need to 'measure' impact, the starting point should not be measurement but rather, a description of the practice itself. This then leads to the generation of a broader range of ways to think about assessing the work. In 2018 the Engaged Scholarship Task Team (ESTT) set up by the then DVC for Research Prof Mamokgethi Phakeng, undertook a review of faculty practices and criteria together with a broader engagement of the literature in the research assessment field[7]. This tool is a guideline for thinking about impact assessment and the questions included can vary somewhat depending on the context. What is important though is that the range of questions used to think about impact assessment need to be braoder than traditonal indicators, particualry given the societal focus of this work. impact assessment and the questions included can vary somewhat depending on the context. For socially responsive research practice, it became clear that a wider set of questions need to be put to the practice to generate a wider set of assessment questions. These include but are not limited to:

- Aim and purpose. Clearly outlining the 'bigger why' of the intervention – the overarching aim and purpose. This is often linked to a theory of change. Questions here can include: how is the initiative conceptualized? To what range of stakeholders am I/are we are as researchers accountable? Why does this matter?
- Outcomes. These need to align to the broader change and because socially responsive forms of research are carried out in relation to societal issues, questions about outcomes need to identify the outcomes for all the stakeholders involved i.e. researchers as well as societal partners.
- Impact and significance. The narrative needs to talk about both change and consequence – what difference does the project make for all concerned? Why is this difference/change important?
- Indicators/outputs. This links to the theory of change identified above and identifies what counts as success in the project, and for whom. Does success look different for the researcher compared to the societal partner?
- Academic/practice impact. While social responsiveness research practice has an inherent societal or external focus, it is also important to understand its impact on researchers and

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[7] ESTT Framework: http://www.socialresponsiveness.uct.ac.za/sites/default/files/image_tool/images/356/SR_reports/SR_report_ 2017_2018.

research practice itself i.e. a reflective back internally. This iterative process between outcome and practice is particularly important if we are to this work as transformative and as part of a project to broaden how we asses impact. Given that broader society is constantly changing (COVID-19 a current significant example of this), socially responsive research practice needs to reflect these changes too. The ESTT tool identifies several questions pertinent to this issue e.g. in what way does the initiative change research practice? Why is this important?

In terms of social responsive research practice, what is important ultimately therefore is whether the impact and the tools used to assess this work reflect the 'university's commitment to utilising the resources of the university to contribute to addressing major development challenges facing the country and the continent more broadly' as shaped by the specific disciplinary context.

Conclusion

Open Science is a paradigm shift towards a cooperative spirit in sharing research outcomes that requires a change in the way researchers are evaluated. Developing better research assessment practices requires experiment and iterative feedback to attain standards and structures to increase consistency in measures of quality in research, in recruitment retention and promotion decisions. These guidelines aim to foster a sense of personal accountability to prioritise equity, diversity and transformation in the face of suspected bias in every decision-making situation. Embracing open science principles can boost the impact of research, and faculty leadership is required to embed impact strategies throughout the wider research 'ecosystem', and develop methodical approaches to assessing impact. Outlined in this document is a bigger picture or portfolio view of research contributions that demonstrate impact. Putting such standards and structures into place is still in early stages and no process is perfect; these guidelines need to be revisited and policies and practices refined as needed.