

# Pursuing Excellence in Research

Reflections from UNESCO Research Chairs in Canada



A Reflection Paper prepared for the Canadian Commission for UNESCO  
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Ottawa, Canada, August 2020

## Suggested reference texts and further reading:

[The Status of Science. The UNESCO Recommendation on Science and Scientific Researchers: Issues, Challenges and Opportunities](#) (2018) by Michèle Stanton-Jean.

[An introduction to UNESCO's Updated Recommendation on Science and Scientific Researchers](#) (2018) by the Canadian Commission for UNESCO and the Netherlands National Commission for UNESCO.

[The Non-Linear Paths of Women in STEM: The Barriers in the Current System of Professional Training](#) (2018) by Liette Vasseur.

[Is Science a Human Right? Implementing the Principle of Participatory, Equitable, and Universally Accessible Science](#) (2019) by the Canadian Commission for UNESCO.

[Standing up to Gender Bias in STEM](#) (2020) by the Canadian Commission for UNESCO, the Laurier Centre for Women in Science, and Ingenium.

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To quote this article:

CARR, Paul, DIONNE, Carmen, DUPONT, Diane, FULLERTON, Christopher, HALL, L. Budd, KAINE, Elisabeth, VASSEUR, Liette, and VENKATESH, Vivek. "Pursuing Excellence in Research, Reflections from UNESCO Research Chairs in Canada", Canadian Commission for UNESCO, August 2020.

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of the Canadian Commission for UNESCO.

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## Introduction

Assessing or even just defining what excellence in research means can become a monumental task that can lead to frustration. The main reason is that research can take many forms depending on the discipline in which a scientist is working. In this reflection paper, we discuss the potential principles that could be applied when thinking about excellence in research in the context of academic advancement and resourcing. We acknowledge that there are many variants of the term and trying to add a strict framework may lead to discrimination against not only some disciplines but also cultures, as research has a social component that should not be forgotten.

## Reflecting on what scientific research is in the international context

In November 2017, UNESCO Member States adopted the revised version of the 1974 [Recommendation on Science and Scientific Researchers](#). The Recommendation describes the responsibilities of scientific researchers and emphasizes several attributes that should be considered when attempting to develop any type of assessment regarding research excellence.

First, it is important to define what we mean by scientific research. As stated in the Recommendation, "scientific research" signifies those processes of study, experiment, conceptualization, theory-testing and validation involved in the generation of scientific knowledge... and thus including both fundamental and applied research (p. 8). These processes can apply to all disciplines whether in social sciences, natural sciences or life sciences. In all disciplines, research can be fundamental, applied or creative, and as stated in several previous works, there is a continuum and one does not exclude the other. Therefore, a first point should be that fundamental research, applied research, and research-creation should be respected as valid research, and that excellence can be found in all of these spheres.

Second, to be able to define what excellence means, there is a need to first understand the status of researchers. The Recommendation defines this as "the standing or regard accorded [to] them, as evidenced, first, by the level of appreciation both of the duties and responsibilities inherent in their function and of their competence in performing them, and, secondly, by the rights, working conditions, material assistance and moral support which they enjoy for the accomplishment of their task" (p. 8). What this means is that the status of the researchers should be considered when looking at how the excellence of their research is assessed. Excellence in this context becomes a relative value that should respect the conditions in which research activities are accomplished.

Third, excellence or high-quality research can only happen with the support and respect of researchers and their activities, respectively. The Recommendation emphasizes that "Member States should demonstrate and take action such that research and development is not carried on in isolation, but as an explicit part of the nations' integrated effort to set up a society that will be more humane, just and inclusive, for the protection and enhancement of the cultural and material well-being of its citizens in the present and future generations, and to further the United Nations ideals and internationally-agreed objectives, while giving sufficient place to science per se" (p. 9). This translates into the fact that research should be carried out according to principles that are respected by all. What would this mean when looking at excellence in research? Or should we be talking about high-quality science/scientific research, as in the Recommendation?

## Excellence in research, or high-quality research

Research of high quality should be based on intellectual maturity, integrity, and ethical principles. High-quality research cannot be achieved without intellectual freedom and ethical respect for all spheres of society. Research should be “humanely, scientifically, socially and ecologically responsible” (p. 12). These are basic principles that should be considered in any assessment of research quality. The Recommendation goes further in acknowledging that research should be promoted in all spheres of society; open to all to ensure public trust and open dialogue between the scientific community and society; address the ethical, legal, and societal consequences of the use of the scientific knowledge; and “treat public funding of research and development as a form of public investment the returns on which are, for the most part, necessarily long term, and take all appropriate measures to ensure that the justification for, and indeed the indispensability of such investment is held constantly before public opinion” (p. 10).

Assessment of research performance needs to be done for funding, but also to understand whether these activities are carried out with respect for the basic principles as underlined in this reflection paper. The Recommendation, in fact, states that Member States should develop appropriate systems “for independent, transparent, gender-sensitive and tier-based performance evaluation” (p. 16). We would add that the evaluation should also be culturally sensitive and inclusive. Henry et al. (2017) underline the challenges of racialized and Indigenous researchers and their struggle to have their research acknowledged. Researchers should be assessed in function of “all aspects of the work including ... contributions to publications, patents, management, teaching, outreach, supervision, collaboration, ethics compliance, and science communications” (p. 16).

It is obvious that a researcher coming from a university where logistical support is limited and teaching duties are heavy will not necessarily produce the same number of publications (if this is the only attribute used to measure excellence) than someone in a university where the teaching load is minimal and support is more freely available. However, should research be considered lower quality because of this difference? We argue that quality of research (as also stated in many studies) is not necessarily related to the status of the institution. It is true that research activities may not be as numerous or might take a longer time in smaller universities, but their innovations and/or new knowledge can have as important an impact as those from a larger university. Similarly, family-care related interruptions (e.g. maternity leaves) should not negatively affect the assessment of the quality of research.

Metrics are often used to assess quality of research and can include citation counts, impact factor of journals, etc. Metrics as the sole way to evaluate excellence in research has been highly criticized for several reasons. As stated in Mendez (2014) (p. 4), “[metrics] are not indicators of intrinsic quality of research but proxies that can be altered by other factors”. Henry et al. (2017) report that the problem of metrics is especially true for women researchers (e.g. a smaller number of women have been able to publish in high impact journals such as *Science* and *Nature* than men). Research which attempts to shift paradigms against a dominant discourse in a particular sector might be judged less pertinent for the “top” or highly ranked journals in that discipline. Some disciplines might encourage research under very controlled experimental conditions which may not be appropriate for research that observes, for example, ecological validity in a variety of natural contexts. Researchers conducting applied research are often left behind because they are unable to publish their work in the same network of conventional scientific journals.

UNESCO and many organizations (e.g. International Development Research Centre) acknowledge the difficulty of assessing research excellence. There are several reasons that make this a challenge, including the increasing mobility of researchers between disciplines, the “blurring of boundaries between disciplines, [and] the appearance of new disciplines” (p. 16). In their book, Henry et al. (2017) point out the challenges that racialized and Indigenous researchers face in obtaining funding for their research activities, and outlets where they can publish their research. Therefore, any assessment of quality of research should be completed considering these different factors.

This problem would also need to be addressed by changing the way researchers present their performance metrics. For example, instead of having a list of publications only, presenting a sample of publications in which the researcher explains not only the publication’s impact in terms of citations and impact factor, but rather the rationale for the research, the adherence to principles for high-quality research and its contributions to society – past, current and potentially future, as not all research results have an immediate impact (Savage 2017). To wit, the Recommendation states that “researchers should seek to minimize impacts on living subjects of research and on the natural environment and should be aware of the need to manage resources efficiently and sustainably” (p. 12). Are these aspects considered by researchers, and are they examined when researchers and their activities are evaluated in a transparent and adequate manner?

Research excellence is also evaluated in terms of the training of highly qualified personnel. The Recommendation underlines that education and training of high calibre researchers should be done “without discrimination on the basis of race, colour, descent, sex, gender, sexual orientation, age, native language, religion, political or other opinion, national origin, ethnic origin, social origin, economic or social condition of birth, or disability” (p. 11). It goes further in encouraging Member States to “remediate past inequalities and patterns of exclusion, actively encourage women and persons of other under-represented groups to consider careers in sciences, and endeavor to eliminate biases against women and persons of other under-represented groups in work environments and appraisal” (p. 11). The number of students being trained needs to be complemented with information regarding how researchers have respected principles of mentorship, interdisciplinary and ethical thinking (to ensure that students understand the ethical, societal and environmental impacts of their research), and skills such as communication (both to the scientific community and society), leadership, and management.

The last component of assessing excellence in research is the research itself. The principles described in this reflection paper should be the basis for any assessment. Issues of feasibility, timelines, and sound research using the most appropriate theories and methodologies should also be the bases of any assessment, but they should again be considered in function of work conditions and cultural/gender contexts. This would mean that it may be inappropriate for a racialized researcher to be evaluated on the quality of her work by a person who does not understand the researcher’s cultural context or does not have a deep understanding of her reality. Evaluation of the quality of research must therefore consider the specific communal contexts in which the research is undertaken. As an illustrative example, we present the case of research in the context of Indigenous populations.

## **Excellence in Indigenous Research**

Achieving and maintaining excellence in Indigenous research now requires – more than ever – that research teams adopt a collaborative approach with Indigenous partners. The principles for this approach draw on Indigenous governance philosophies based on consensus, alliances, and horizontal (as

opposed to vertical) relationships. True collaboration requires consensus among all the stakeholders involved, since consultation alone does not in any way guarantee that the resulting recommendations will be applied.

For the Indigenous partners of research projects, project success is based on a number of ethical principles:

1. Researchers should consider and demonstrate equality between Indigenous cultural experts and their academic counterparts, recognizing that the respective knowledge of each is equally necessary in understanding the complexity of Indigenous cultures; in fact, the opportunity to learn from Indigenous peoples should be treated as a privilege by such researchers;
2. Researchers should instill a culture of listening and honesty in research teams based on respect and trust. This requires developing codes of conduct and strict adherence to them, given the enormous trauma due to colonization that has undermined Indigenous peoples' trust in institutions;
3. Researchers should collaborate with different members of Indigenous communities in all stages of the research – not only in defining the composition of the teams; this often requires training;
4. Collaboration should be considered over the long haul as a constant dialogue, since long timespans are the cornerstone of fruitful encounters and relationships;
5. Researchers should encourage the development of appropriate methodologies to facilitate collaboration with Indigenous cultures that reflect the intercultural, multi-sectoral, multidisciplinary and inter-community work conducted within and across nations so as to counteract the segregation that created Indigenous reserves in the first place.

Excellence in Indigenous research is measured in the researchers' ability to work not **on** Indigenous peoples, but especially **with and for** them. This kind of research guarantees the partner community both short-term benefits (e.g. jobs, training and economic impacts in the community) and longer-term advantages (e.g. research findings used to serve the community, spinoffs such as patents benefit the community, the community retains intellectual property rights, etc.). In fact, the success of Indigenous research projects is not primarily evaluated in quantitative terms, but rather in qualitative and holistic terms – for example, did the project rally all the stakeholders around a common mission and recognize each participant's contribution, thereby ensuring sustainable development for the Indigenous partners?

## Understanding Knowledge: A Changing World

It is not possible to engage in a conversation about excellence in research without understanding the changing nature of our understanding of knowledge. We are familiar with the concepts of knowledge economy (jobs and knowledge) and knowledge society (citizenship and knowledge) but knowledge democracy has emerged to challenge the limitations of these previous knowledge discourses. Knowledge democracy has been informed by the work of Boaventura de Sousa Santos' work on *epistemicide*, the killing of global knowledge systems by a Eurocentric Western dominant canon. It is supported as well by the work of the political scientist John Gaventa who writes on inequality and knowledge. It is informed by Indigenous scholars such as Linda Tuhiwai Smith, a Maori intellectual, by

scholars such as Gayatri Spivak and a generation of participatory researchers going back to Paulo Freire, Orlando Fals Borda, Rajesh Tandon and more. This is part of the broad call for the decolonization of higher education.

## Conclusion

In conclusion, there is a lack of consensus on what research excellence is, and this will remain a challenge for all organizations. The adherence to principles and criteria may be an avenue that helps understand where the research is situated and how it impacts society. While there are many possible criteria that can be used for evaluating research quality, there is a need for more transparency, communication of expectations, and especially more respect for the various types of research in the different disciplines and in different types of institutions. It is also important to recognise the importance of the value of research in the apprenticeship of future generations of scholars, and of the need for financing of infrastructures that ensure the transfer of knowledge generated from research across the various stages of university education.

A reflection on the process of knowledge development and the actors involved is needed. The processes of co-construction of knowledge between communities and academia have become an essential component of research in recent years. In Canada, for example, partnership research, community-based research and applied research have been recognized by academia in recent years. The monopoly of the development of knowledge by the university world has been deconstructed. This democratization of knowledge implies the recognition of multiple epistemologies, including different types of knowledge. It also implies the recognition of multiple ways of presenting knowledge, including forms of knowledge mobilization essential for social transformation, as well as the recognition of its diffusion via mechanisms of open access.

Research excellence should therefore take into account this way of conceiving knowledge, its creation and its use in a perspective of the democratization of knowledge. For example, the community impact of research, capacity building and community leadership, contribution to public knowledge, control of research by Indigenous communities, and the role of research in creation of multifaceted teams must be recognized to value research excellence. Along with this recognition, we should also consider the potential impact of innovative, creative, alternative and other forms of research that have not traditionally been valued by formal decision and policy-makers, as well as those providing formal leadership in academic disciplines. Thus, our quest for a democratization of research is aimed at valuing diversity, inclusion, social justice and meaningful critical engagement among a range of actors, sectors and communities, including those who have been traditionally marginalized. It is at this juncture that the UNESCO Chairs of Canada, with their direct and critical relationships with civil society and with the Global South, aim to significantly contribute to the production, dissemination and democratization of quality research.

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