

# Approaches to Assessing Impacts in the Humanities and Social Sciences

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## Executive Summary

There is a growing interest across the Canadian research system (and indeed globally) in how to assess and communicate the diverse impacts of scholarly work. Across the Canadian research system, scholars, university administrators and public servants are looking to impact assessments to better communicate the value of scholarly work, to increase collaboration with non-academic sectors and to achieve a broad range of other benefits.

This document is a companion and follow-up report to an earlier working paper of the Federation on the impacts of the humanities and social sciences. These Federation resources aim to support a productive and positive dialogue on scholarly impact assessment, with a focus on the humanities and social sciences (HSS). This report identifies and discusses the intended benefits of impact assessment, the potential risks of flawed assessment systems, the characteristics of HSS research that affect efforts to assess impact, and the strengths and weaknesses of various assessment approaches.

Through an examination of these key factors, this report concludes with a set of recommended approaches to assessing the impacts of HSS scholarship. This report also includes a series of illustrative stories inspired by the experiences of Canadian researchers, which demonstrate how the recommended impact assessment approaches might be applied to a broad range of research scenarios.

### Background

The Federation for the Humanities and Social Sciences represents a community of 91,000 faculty members, researchers and graduate students at universities across the country in the HSS disciplines. The Federation has been an active participant in the ongoing national conversation about how the HSS community can most effectively articulate the impacts that flow from its work, publishing a working paper in 2014 and engaging with members and partners on the issue.<sup>1</sup>

The Federation's 2014 working paper describes impacts as "the influence scholarly and creative inquiry has upon wider society, intended as well as unintended, immediate as well as protracted." The working paper sets out a framework that describes the broad scope of impacts that flow from the work of HSS scholars across five key baskets, two of which describe academic impacts and three of which describe impacts on society.

1. Federation for the Humanities and Social Sciences. (2014). *The Impacts of Humanities and Social Science Research: Working Paper*. <http://www.ideas-idees.ca/sites/default/files/2014-10-03-impact-project-draft-report-english-version-final2.pdf>

The Federation has conducted interviews on the theme of impact assessment with a range of institutions and faculty members across universities and disciplines and has engaged in discussions and workshops with members and partners at our Annual Conferences in 2015 and 2016.

# HSS research has impacts on:

## Academic impacts

### SCHOLARSHIP

that can be measured using indicators such as:

- Bibliometric indicators
- Downloads from Open Access repositories
- Citations in grant applications
- Acknowledgements
- Prizes and awards
- Reputation as measured by survey
- Post-publication peer review (book reviews, dedicated symposia)
- Juried exhibitions and performances

### CAPACITY

through teaching and mentoring at the graduate and undergraduate levels that can be measured using indicators such as:

- Number and quality of experiential learning/ research opportunities for students
- Surveys of students and alumni
- Employer surveys
- Integration of research as a learning outcome in courses

## Impacts on society

### PRACTICE AND POLICY

that can be measured using indicators such as:

- Invitations to participate as an expert witness, an advisor, on an expert panel or committee
- Citations in government documents
- Consulting for governments or think tanks
- Commissioned reports

### SOCIETY AND CULTURE

that can be measured using indicators such as:

- Number and quality of partnerships between researchers and community groups
- Requests for consultancy/advice from community groups
- Media coverage of research (newspapers, TV, online)
- Requests for media appearances
- Engagement of the public at events
- Research-related social media
- Public use of research-based web resources on social and cultural issues

### ECONOMY

that can be measured using indicators such as:

- Advisory roles and board memberships
- Revenue opportunities and cost savings in the public, private and not-for-profit sectors resulting from research applied in practice
- Income derived from patents, patent licensing, copyright and trademarks
- Consulting contracts

This framework illustrates a key characteristic of HSS research: its impacts are felt broadly across society in many direct and indirect ways. This reality has important implications for any effort to assess the impacts of this work. This Federation report builds on the findings of the 2014 working paper, focusing on identifying the key factors that will determine the success of impact assessment efforts and presenting a set of recommendations that describe a positive approach to impact assessment.

## Key observations and recommendations

The following is a summary of key observations relating to the assessment of impacts in the humanities and social sciences:

- There are substantial potential benefits to assessing the impacts of scholarly work.
- However, a flawed impact assessment process can produce significant negative consequences within the research system.
- The impacts of scholarly work are highly diverse, and no single indicator or definitive set of indicators has been developed that can fully capture this diversity.
- Bibliometrics are a useful approach to assessing scholarly impacts, but they have important limitations. These limitations can be mitigated through the use of qualitative indicators.
- It is rarely possible to precisely attribute impacts to any specific scholarly work due to the collective nature of much of this work and the long timeframes between research and impact.
- Many research impacts are fundamentally linked to actors outside the academic community — such as in the private sector, the public service and civil society.

Based on these observations, the Federation recommends the following approaches to assessing the impact of HSS scholarship:

**Define impacts broadly.** As illustrated in the Federation’s 2014 working paper, HSS work is highly diverse, as are its impacts across society. Recognizing this complexity is essential to understanding the concept of impacts: it is inherently difficult to define, to attribute and to quantify. Using a broad, flexible understanding of impacts, which recognizes the many valid interpretations of the term across subject areas and disciplines, is appropriate. This understanding correctly encourages a flexible, pluralistic approach to impact assessment.

**Use diverse and flexible sets of indicators, including qualitative and quantitative methods.** One size will not fit all. No one defined set of indicators will be able to capture the complex and far-reaching impacts of diverse HSS scholarship. Instead, the impacts of HSS work in a given area should be assessed using a flexible and diverse set of indicators that should develop over time as the knowledge and practice of impact assessment evolves. Assessment systems should seek to make the best use of both quantitative and qualitative indicators. A “pathways” approach – which involves identifying the specific steps that link research to impacts and the contributions of both academic and non-academic partners – can be used to help determine useful impact indicators. (This concept is further described in Section 5.4 of this document.)



**Researchers should play a leading role in describing the impacts of research work, in collaboration with research partners and users.** Considering the diversity of research areas in HSS, the range of potential impacts the work can have, and the number of potential indicators that can be utilized, scholars themselves will need to play a leading role in selecting the indicators that are best able to capture the impacts of their work. As described in the pathways approach to impact assessment, research users and partners, including those outside the academy, also play an integral role in impact assessment.

**Assess collective impacts.** HSS scholarship has substantial impacts that are felt over long periods of time, resulting from the cumulative efforts of many researchers. This fundamental characteristic of scholarly work creates important limitations for attributing the impacts made by any individual scholar or any particular scholarly work. Recognizing this, assessments of HSS work should include consideration of collective and long-term impacts, such as those by research teams, fields of inquiry and institutions.

**Develop institutional supports to enable effective impact assessment.** Assessing the impacts of scholarly work is a complex and challenging endeavour. The design of any impact assessment system should include mechanisms to manage the associated burden. While, as the above recommendation states, scholars should play a leading role in determining how their work is assessed, administrative actors within universities and public agencies must provide adequate supports to ensure that the demands of assessment do not unduly diminish a scholar's ability to engage in other valuable activities.

## Conclusion

Assessing the impacts of scholarship is a challenging endeavour, but there are approaches available to overcome those challenges. Through creativity and collaboration, impact assessments can be employed to strengthen Canada's research system, helping the scholarly HSS community more clearly demonstrate the valuable work being done today and learn how even greater impacts can be achieved in the future.

# 1. Introduction

There is a growing interest across Canada in how to demonstrate the diverse impacts flowing from academic research and teaching, including in the HSS. Drawing on the Federation's engagements with public servants, university administrators and faculty, it is clear that these conversations are growing in importance across Canada's higher education sector. Researchers are looking for guidance on how to both achieve greater impacts through their work and evaluate those impacts. Senior government officials are increasingly looking for clear evidence on program outcomes. And university administrations are designing strategic plans that utilize indicators of research performance.

The Federation represents a community of 91,000 researchers and graduate students at universities across Canada in HSS disciplines. The Federation has been an active participant in the ongoing national conversation about how the HSS community can most effectively articulate the impacts that flow from its work. The Federation's objective is to help ensure that this important conversation on scholarly impacts is as productive, comprehensive and inclusive as possible so that it contributes to strengthening Canada's capacity to invest in and produce high-quality HSS research and educational experiences.

**To succeed, the research community will need a shared understanding of the key factors that underlie the assessment of scholarship.**

Researchers, academic administrators and public servants need to work together to collectively identify creative approaches that capture the opportunities and avoid the pitfalls of impact assessment. This will likely require the design of new kinds of supports at the institutional and funding levels to enable scholars to meet the challenges of impact assessment. To succeed, the research community will need a shared understanding of the key factors that underlie the assessment of scholarship.

## **The Federation for the Humanities and Social Sciences' Impacts Project**

The Federation's work on research impacts is rooted in the firm understanding that the HSS community makes vital contributions to the health of Canadian society and the well-being of Canadians. Research in HSS disciplines provides key insights into how people think, behave and interact — knowledge crucial to the design of effective public institutions, policies, products and services. HSS scholars provide critical perspectives on society that help us to develop, express and challenge understandings of who we are and where we're going. Scholars also play a vital role in educating new generations of citizens, helping to develop the analytical skills, critical perspectives and creative capacities they'll need to thrive in an increasingly complex, interconnected world.

In 2014, the Federation published a working paper on research impacts,<sup>2</sup> based on a series of consultations with members and partners. The working paper offers a conceptual framework that describes the diverse scope of impacts that HSS scholarship has across society. (This is further described in Section 3 of this document.)

2. Federation for the Humanities and Social Sciences. (2014). *The Impacts of Humanities and Social Science Research: Working Paper*. <http://www.ideas-idees.ca/sites/default/files/2014-10-03-impact-project-draft-report-english-version-final2.pdf>

Building on that base,<sup>3</sup> and informed by further consultations, this Federation report addresses how assessments of impacts can strengthen research and teaching in HSS, what risks it entails, and what key factors will affect the success of any impact assessment exercise.

Fortunately, there is a rich body of literature available to support this work. With the help of this existing scholarship, this report identifies and discusses the most important factors that need to be addressed in any examination of scholarly impacts. These include: how to define scholarly impacts, the use of bibliometrics, issues relating to attributing impacts, and pathways to impacts. The report concludes with a summary of observations and a set of recommendations regarding necessary elements for an effective approach to impact assessment in the humanities and social sciences.

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assessment — to encourage a productive, comprehensive and inclusive dialogue that helps HSS scholars and their partners express and enhance the vital impacts they have across society.

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## 2. Current Canadian context

### Case studies: Illustrating impact assessment approaches through narrative

This report aims to provide the HSS community and its partners with a set of useful impact assessment approaches that can be used and adapted to help tackle a broad range of impact assessment challenges. In order to show how the recommended approaches can be applied to diverse research scenarios, this report includes a series of four illustrative case studies showing different experiences with tracking and demonstrating research impact. While these four case studies are hypothetical, each takes inspiration from real Canadian research projects.

The conversation about how the impacts of scholarship can be demonstrated is growing across Canada's research system. It is driven in part by a growing demand in university administrations and the public service for more information to support decision-making, as well as by a growing interest among researchers to develop and share best practices in research and teaching, to collaborate more effectively with non-academic partners and to have a greater influence on public issues.

In recent years, impact assessments have become a standard part of publicly-funded HSS research in Canada. Both the Social Sciences and Humanities Research Council of Canada (SSHRC) and the Canadian Institutes of Health Research (CIHR) adopted knowledge mobilization mandates in the early 2000s, which emphasize the

3. The Federation consulted its members on issues related to impact assessment through workshops at its 2015 and 2016 Annual Conferences. These events involved approximately 170 participants from across the HSS community. Federation staff also conducted 13 interviews with Canadian scholars, university administrators and public servants who are engaged in the topic of assessing impacts in the humanities and social sciences.

transfer of knowledge between researchers and various non-scholarly practitioners. SSHRC commissioned several research reports on how to assess the impacts of research beginning in 2006. SSHRC's 2010 report "Framing our Direction," which laid out the agency's 2010-12 strategy, identified impact assessment as a key ambition. The mechanisms that SSHRC employs to assess research impacts have continued to evolve since that time.<sup>4</sup>

All HSS researchers are currently required to indicate the impacts of their research as a part of the application process for SSHRC research grants. Researchers are also asked to convey information on research impacts as part of reporting requirements, but these are not directly linked to future funding prospects, which remain firmly rooted in peer-review mechanisms.

There have been other notable efforts in Canada to address the issue of assessing scholarly impacts. ResearchImpact, formed in 2006, is a network of 12 universities that aims to increase the impact of research, particularly through knowledge mobilization with non-academic partners. Also in 2006, a group of humanities administrators at the University of Toronto convened to explore the possibilities and barriers to assessing impacts flowing from the humanities. A discussion paper titled, "*Performance Indicators for the Humanities*" was published in 2010. In 2016 a group at the University of Waterloo published "*Measuring Research Output through Bibliometrics*," a guide on the use of bibliometrics as an assessment tool.

Internationally, inquiry into the assessment of scholarly impacts has been developing for decades. The United Kingdom is regarded as an early mover in the trend toward assessing research impacts, implementing its first Research Assessment Exercise in 1986. Since that time, research impact assessment systems have been implemented in many countries with research systems comparable to Canada's, including in Australia and the Netherlands. These impact assessment systems have attracted substantial discussion, controversy, debate and analysis, producing a wealth of literature that can help inform approaches in Canada. Analysis of such

studies plays an important role in informing the content of this report.

Through consultation with its members and partners, the Federation has learned of work underway at universities (including at the strategic-planning level) and within faculties across Canada to better assess research impacts and make greater use of impact indicators.<sup>5</sup> These indicators are being sought to more effectively communicate the university's academic and non-academic output to students, parents, the scholarly community, non-academic partners and governments. In the cases the Federation has learned of, these strategies are being developed through consultations with researchers, including those in HSS disciplines, to determine the best approaches to pursue to produce indicators of impacts. For example, at the University of Victoria, the university has launched the "Impact Stories" project, that aims to assess the impact of community-based research being undertaken by faculty and partners, and is working with departments on an "impact framework" to better account for how the work involved in community-engaged scholarship can be factored into promotion and tenure decisions.

However, the Federation's consultations with both university administrators and researchers have revealed that this ongoing dialogue is limited by ongoing uncertainties about such issues as: how information on impacts will be collected, how impact indicators will be used, how the exercise might affect hiring and promotion, how it will affect faculty work, and what

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4. Wixted, B., and Beadry, C. (2012). *Capturing the Impacts of Research*. Social Sciences and Humanities Research Council of Canada (2012). [http://www.sshrc-crsh.gc.ca/about-au\\_sujet/publications/Compendium\\_e.pdf](http://www.sshrc-crsh.gc.ca/about-au_sujet/publications/Compendium_e.pdf)

5. The Federation has learned of several strategic planning exercises at Canadian universities that feature an impact assessment component. These plans have not all been made public as of the time of this report's publication and several are the subject of ongoing internal consultations.

supports will be available to researchers to enable them to contribute effectively. Throughout the consultations, the Federation heard repeatedly that there is a need for greater clarity on the issues surrounding impact and more information-sharing among partners in the scholarly community. As stated in Section 1, the purpose of this report is to support this dialogue by highlighting major factors that underlie impact assessment.

## 3. Defining impacts

**While there has been an energetic global dialogue on how the impacts of scholarship might be demonstrated, no clear, widely-accepted definition of “impacts” has emerged.**

While there has been an energetic global dialogue on how the impacts of scholarship might be demonstrated, no clear, widely-accepted definition of “impacts” has emerged. In *“The Metric Tide,”* one of the most authoritative reviews on the subject of research impacts available today, the authors conclude that: “Impact is still a contested term, with a variety of definitions and understandings of its implications. The ways in which it can be assessed and measured are equally varied.”<sup>6</sup>

Definitions of impact tend to differ based on the number of steps separating it from the scholar’s original work. For instance, one of the most important distinctions made between forms of impact is whether they occur inside or outside of academia. To date, efforts to track and

quantify scholarly impacts have predominantly focused on effects within academia. For instance, one of the most commonly used indicators of impact is the number of times a piece of published research is cited in other research literature. But while this measure of impact has value in certain applications, it is not appropriate for all domains of scholarly activity, and it says little about broader economic and societal impacts.<sup>7</sup>

In their work describing the impact of the social sciences, a group of authors from the London School of Economics describe impacts as “auditable occasion of influence from academic research on another actor or organization.”<sup>8</sup> Such an “occasion of influence” might occur inside or outside of academia, giving this definition more flexibility. It recognizes academic publishing, submissions to government, commentary to the media, participation in public forums and many other activities. However, as the authors acknowledge, this definition does not extend beyond the initial influence; it does not include changes in outcomes, activities, behaviours or thinking that flow from these occasions. The authors did not include such effects as part of their definition because of attribution challenges; these indirect effects can be attributed to a large number of influences and the causal links will always be unclear. (Section 5.3 of this paper includes a more detailed discussion of the challenges of attribution.) The authors acknowledge

6. Wilsdon, J., et. al. (2015). *The Metric Tide: Report of the Independent Review of the Role of Metrics in Research Assessment and Management*. HEFCE. <http://www.hefce.ac.uk/pubs/rereports/year/2015/metrictide>
7. Hazelkorn, E., et. al. (2013). *Recognising the Value of the Arts and Humanities in a Time of Austerity*. Dublin Institute of Technology <http://arrow.dit.ie/cgi/viewcontent.cgi?article=1042&context=cserrep>
8. The London School of Economics and Political Science. (2011). *The Impact of the Social Sciences*. <http://blogs.lse.ac.uk/impactofsocialsciences/executive-summary>

# Case study: Impacts in folklore studies

***This case study is hypothetical, but based on actual Canadian research projects.***

A long-serving tenured professor of folklore studies based at a mid-sized Ontario university is motivated to begin assessing the impacts of his work. His funders and his university are both eager to better demonstrate the impacts of the scholarship they support. Some of his peers have enjoyed success in demonstrating impacts, which has helped them attract students and research partnerships. He also believes deeply that his work is meaningful and he feels a growing responsibility to better communicate its importance to others.

As a researcher specializing in the folk tales of pre-Christian Eastern Europe, he feels challenged to identify many of the typical impact indicators others have employed. His research has not involved partnerships with community groups or other non-academic practitioners; no media to date have been interested in his findings; nor is he trying to affect changes in public policy.

In order to identify his potential impacts, he begins by asking, “What is it I’m trying to achieve?” He arrives at two key answers: “To create and preserve valuable knowledge” and “to strengthen and open the minds of students.” These objectives help suggest areas he might explore for evidence of impact.

There are several ways he can demonstrate his contributions to creating and preserving knowledge: the books he’s written, citations of his writing, the prizes he’s been awarded, the talks he’s been asked to give, and so on. In order to assess the extent to which he’s helped strengthen and open minds, he needs to better understand the experiences of

his students. Recognizing that he is not himself an expert in assessing learning outcomes, he decides to employ a new learning-assessment tool.\*

## Outcomes

A year later, the professor re-evaluates his impacts plan. The scholarly association to which he belongs recently published a guide on how to track scholarly impacts, including recommendations on how to use bibliometrics. Using this guide, he’s able to report on his scholarly impacts in a way that’s more methodologically consistent with the rest of his field. The learning-outcomes assessment tool produced some interesting results. However, he feels that some of the improvements he witnessed over the year in his students were not adequately captured. He writes to the group of scholars who produced the assessment, sharing a few ideas of how it might be improved in the future, and engages his department head to help develop tools that professors can use and reflect on together.

Many years later, a community organization representing a small ethnic group in Romania wins an important court case. The court decision validates the group’s longstanding claim that their ancestors had resided in a particular region for many centuries. One piece of evidence used was a little-known folk story associated with their traditional territory that employs phrases derived from their language group. The members of this community never learn who made this initial discovery. The Ontario-based folklore professor never learns how his discovery was used.

## Lessons

- Research in all disciplines may have important impacts, even in areas where they may be difficult to detect and assess.
- Individual researchers require tools and supports to perform impact assessment, in this case, a guide to assessing scholarly impacts and a tool to assess learning outcomes.
- Such tools will develop and improve over time, thanks in part to feedback from users.
- It is not always possible to assess all impacts. Impacts may occur long after the research was conducted, and direct links between scholarly work and its long-term impact may never be clearly established. It is not possible to predict all the ways new knowledge will be used.



\*See, for an example, the VALUE rubrics (Valid Assessment of Learning in Undergraduate Education) from the American Association of Colleges & Universities: <https://www.aacu.org/value/rubrics>

that this limits the definition to “first-stage visibility with external partners.”<sup>9</sup>

Predictably, this definition does not satisfy other researchers. Academic work has impacts beyond the initial actions or outputs of the researcher, including effects from teaching, improvements in productivity and quality of life, increased employment, more informed public debate, policy changes, social development, and so on.<sup>10</sup> Each discipline will also have its own perspectives on what constitutes impacts. For instance, as one Canadian humanities scholar articulates it, “The point of humanities research is not usually to describe or explain the world but rather to discover the meaning in it.”<sup>11</sup>

### 3.1 Identifying the impacts of HSS

In 2014, the Federation published “*The Impacts of Humanities and Social Science Research: Working Paper*,” which includes a conceptual framework that describes the diverse societal impacts flowing from HSS scholarship. The framework identifies five broad baskets of impact relevant to HSS work and suggests a suite of indicators with the potential to describe impacts in each basket. (See the Executive Summary in this report for a graphic display of the baskets with illustrative indicators.) The five baskets are:

- i) Scholarship
- ii) Capacity (through teaching and mentoring at the graduate and undergraduate levels)
- iii) Economy
- iv) Society and culture
- v) Practice and policy

This framework illustrates the broad scope of impacts that flow from HSS scholarship and begins to identify indicators that may be useful in assessing it.

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has upon wider society, intended as well as unintended, immediate as well as protracted.”

Because of this diversity, the term “impact” resists clear classification. In fact, some researchers argue the term “impact” suggests too direct a link between scholarship and outcomes, preferring instead to talk about the “contributions” of their work. Recognizing this ambiguity is essential to fully understanding the concept of impacts: it is inherently difficult to define, to attribute and to quantify. This complexity presents challenges for impact assessment, but it also provides important opportunities. By understanding the complex nature of impacts, both researchers and administrators can feel encouraged to employ a diverse suite of impact indicators in creative ways. This experimentation will help increase the research community’s knowledge of scholarly impacts and its abilities to perform impact assessments to suit ever-evolving forms of research and teaching.

9. Ibid.

10. Hazelkorn, E., et. al. (2013). *Recognising the Value of the Arts and Humanities in a Time of Austerity*. Dublin Institute of Technology. <http://arrow.dit.ie/cgi/viewcontent.cgi?article=1042&context=cserrep>

11. Misak, C., University of Toronto, quoted in Wixted, B. and Beadry, C. (2012). *Capturing the Impacts of Research*. Social Sciences and Humanities Research Council of Canada. [http://www.sshrc-crsh.gc.ca/about-au\\_sujet/publications/Compendium\\_e.pdf](http://www.sshrc-crsh.gc.ca/about-au_sujet/publications/Compendium_e.pdf)

# 4. The benefits and risks of impact assessment

## 4.1 The benefits of impact assessment

The humanities and social science have been key components of higher education and advanced-research systems around the globe and throughout modern history. The contributions of HSS scholars to improvements in the functioning of society and the advancement of human well-being are widely acknowledged.

As illustrated by the framework in the previous section, HSS scholarship supports a broad range of beneficial outcomes. It helps to advance a shared understanding of how humans think, behave and interact — knowledge that is crucial for the design of effective public policies and institutions, as well as products and services, including in the cultural sectors. HSS research also supports an understanding of who we are, where we're going and how we relate to each other and our world — knowledge required to live full and creative lives and to tackle those complex challenges that defy technical solutions. Furthermore, HSS scholarship includes the teaching, training and mentoring of students, which helps develop the skills, values and perspectives that successive generations need to thrive in an increasingly complex and fast-changing world.

The impacts flowing from HSS work are therefore substantial. However, for reasons that are discussed in this report, these impacts are frequently difficult to assess precisely. As a result, the powerful impact stories of HSS scholarship are too often under-recognized and undervalued. One of the primary benefits of impact assessment, therefore, is to allow the HSS community to share exciting success stories that have gone untold for too long.

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By helping to tell such stories, impact assessment techniques have the potential to elevate the public standing of HSS scholars — both to their benefit and to that of the general public. By better articulating the value of their work, HSS scholars can more effectively encourage its use to address important societal challenges. This may come in the form of increased attention from decision-makers in government, resulting in increased use of evidence supported by research in the setting of public policy. At the same time, leaders in the private sector or civil society may more readily adopt practices and principles validated by HSS research to better serve their communities. Furthermore, more widespread cultural understanding can significantly improve equity, inclusion and social cohesion.

For HSS researchers themselves, increased public recognition can solidify support for their work, be it through increased influence with non-academic stakeholders, better access to government decision-makers or more secure funding for scholarly activities. It can also help attract new talent to the HSS community. International scholars are likely to be more interested in collaborating with Canadian research projects that can demonstrate clear impacts. Likewise, students are likely to be more attracted to study topics when they can see the benefits that result.



The development of improved impact assessment techniques also has implications for the development of HSS research itself. For instance, the assessment of diverse impacts is likely to draw increased attention to the use of research outside of academia. In doing so, impact assessment encourages the “democratization” of knowledge, which describes both the co-production of knowledge between academic and non-academic partners and the co-use of that knowledge throughout different sectors. This approach to research has the potential to help break down barriers between the scholarly community and non-academic sectors, build trust, encourage partnerships, challenge perceptions of academic elitism, and open new pathways for knowledge gathering and sharing.

## 4.2 The risks of a flawed assessment process

Decisions on how to assess and communicate the impacts of research also entail risks. Systems designed to assess performance also affect performance, and sometimes this is precisely the point. For instance, a program to assess the impact of scholarship may well be implemented with the express purpose of better aligning scholarship with policy priorities.<sup>12</sup> However, any system that influences behaviour might also have unintended consequences, and depending on their probability and severity, these unintended consequences can endanger the system’s essential validity.

In the case of systems designed to assess scholarly impacts, critics are generally concerned about the creation of perverse incentives, the encouragement of system gaming and the consequences of excess burden. Assessment systems that are restricted to a narrow set of impact indicators are considered to be particularly vulnerable to such unintended consequences.

Perverse incentives in an assessment system may take the form of goal displacement. In an academic context, where assessment systems have real consequence for funding, this would likely involve researchers and administrators making research choices and funding decisions motivated by scoring well in the assessment system, displacing the motivation to achieve other goals, such as advancing knowledge for the benefit of society.<sup>13</sup> If decisions made to satisfy the assessment system differ considerably from those that would be taken to meet broadly accepted academic objectives, the incentives produced are indeed “perverse.”

For instance, goal displacement might occur in decisions about how resources are allocated. A researcher who is evaluated primarily based on the number of journal articles they can get published and cited would be understandably disinclined to invest too much of their time in other areas, such as teaching, participating in public forums, submitting evidence to government, or other activities that also help expand the positive social impact of academic work.<sup>14</sup>

The second significant negative consequence of a flawed assessment system is gaming — strategic behaviour designed to take advantage of a system’s rules. This consequence is closely linked to the first: a system that produces perverse incentives is likely to also incentivize gaming behaviour, which can damage the value of the evaluation system’s results. If participants in an assessment system find clever ways to game the results, these begin to lose their value.<sup>15</sup> Results begin to capture the skill with which participants exploit the rules rather than the state of the world they were designed to measure.

12. Wilsdon, J., et. al. (2015). *The Metric Tide: Report of the Independent Review of the Role of Metrics in Research Assessment and Management*. HEFCE <https://responsiblemetrics.org/the-metric-tide/>

13. Ibid.

14. Ibid.

15. For example, there have been concerns around the ability of U.K. universities to game the results of the Research Excellence Framework by, for instance, head-hunting new staff with recent high-profile publications which can be used as evidence of impact for the new hiring institution in the REF system (a practice known as “REF poaching.”) See, for instance, the *Times Higher Education* article “*Reach for the stars.*” <https://www.timeshighereducation.com/features/reach-for-the-stars/421623.article>. The ability of individual researchers to artificially inflate metrics around report downloads and social-media activity is regularly raised in discussions around the use of Alternative Metrics.

The third key concern is the burden an assessment system places upon the research community. Considering that researchers' time is already split between such responsibilities as teaching, conducting research, writing, participating in peer reviews, contributing to academic governance and being accessible to the public and media, issues of excess burden are understandably contentious. There is a concern in the scholarly community that while they are expected to devote time and effort to mobilize their research and otherwise maximize its impact, these efforts are too often undervalued by administrators and granting agencies.<sup>16</sup>

**There is a concern in the scholarly community that while they are expected to devote time and effort to mobilize their research and otherwise maximize its impact, these efforts are too often undervalued by administrators and granting agencies.**

A 2013 study of scholarly assessment approaches highlights the issue of burden as a key consideration, warning that assessment systems that place high technical demands on participants need to be matched by appropriate supports and incentives.<sup>17</sup> And there is reason to believe that researchers will need support. A 2015 Dutch study of researchers' attitudes toward impact assessment policies reveals that many researchers do not value impact maximization and reporting as highly as they do their research — particularly when incentives to achieve and report impacts are lacking. Furthermore,

**There is a pervasive risk that well-meaning attempts to assess impacts lead us to narrow definitions of valuable research to include only those elements that are easily measured.**

many researchers expressed confusion about their responsibilities to support impact assessment activities relative to their other scholarly responsibilities.<sup>18</sup>

The sorts of unintended consequences described above are likely to occur in assessment systems that focus too narrowly on a defined set of impact indicators. Jane Tinkler, the Senior Social Science Advisor at the U.K. Parliamentary Office of Science and Technology and member of the steering group for Independent Review of the Role of Metrics in Research Assessment and Management, observes that the greatest concern expressed by researchers regarding the U.K.'s national research-impact assessment exercise in 2014 was that "impact metrics focus on what is measurable at the expense of what is important."<sup>19</sup>

Submissions by U.K. universities to the 2014 Research Excellence Framework (REF) exercise employed highly diverse indicators of impacts, leading Tinkler and her colleagues on the review panel to conclude that the world of research is too varied and complex to be captured by any defined set of quantitative metrics. As Tinkler writes, there is a pervasive risk that well-meaning attempts to assess impacts lead us to narrow definitions of valuable research to include only those elements that are easily measured. To avoid such a scenario, Tinkler recommends employing an assessment system flexible enough to capture the diversity of scholarship it is meant to describe.

16. Wixted, B., Beadry, C. (2012). *Capturing the Impacts of Research*. Social Sciences and Humanities Research Council of Canada [http://www.sshrc-crsh.gc.ca/about-au\\_sujet/publications/Compendium\\_e.pdf](http://www.sshrc-crsh.gc.ca/about-au_sujet/publications/Compendium_e.pdf)

17. Guthrie, S., et. al. (2013). *Measuring Research: A guide to research evaluation frameworks and tools*. RAND Corporation ... <http://www.rand.org/pubs/monographs/MG1217.html>

18. De Jong, S., Smit, J., van Drooge, L. (2015). *Scientists' response to societal impact policies: A policy paradox*. *Science and Public Policy*, 43.1: 102-14. <http://spp.oxfordjournals.org/content/early/2015/05/25/scipol.scv023.abstract>

19. Tinkler, J. (2016). *Rather than narrow our definition of impact, we should use metrics to explore richness and diversity of outcomes*, The Impact Blog (London School of Economics) <http://blogs.lse.ac.uk/impactofsocialsciences/2015/07/28/impact-metrics-and-the-definition-of-impact-tinkler/>

# Case study: Policy impacts in a dynamic environment

***This case study is hypothetical, but based on actual Canadian research projects.***

Two pre-tenure researchers at a small Maritime university — an economist and a sociologist — have worked together for three years to study the potential social implications of a basic income system (where individuals are guaranteed a basic minimum income through the tax and transfer system). The two professors have published regularly in journals and have trained students on the research methods they employ. However, their research has attracted little public attention and the pair have not devoted much effort to expanding or assessing the impacts of their work.

They suddenly find themselves in the spotlight when a major provincial political party announces a basic income policy in its new campaign platform. The researchers are invited to provide expert advice for the platform, and they become regular commentators in the media as the issue gains prominence in the election campaign that follows. Eager to correct public misunderstandings about basic income systems, the pair write opinion pieces for local newspapers, participate in public lectures and become increasingly active on their blog and on social media.

After the next provincial election, a legislative committee is formed to explore the idea of basic income and the two are invited to provide testimony. Several months later a series of basic income pilot projects are launched in three cities across their province. The researchers accept an invitation to analyze the results of one of the projects.

While the researchers welcome these opportunities to increase the impact of their research, they are concerned about the implication on tenure decisions.

They feel the tenure committee may not recognize the value of this work, and the added pressure has strained their ability to take on new research projects. The university's communications and government relations offices help them track their interactions with media and public officials — indicators that can later be used by both the university and the researchers to demonstrate impacts.

## Outcomes

The two researchers are able to gather rich data in their work assessing the pilot project, resulting in the publishing of several articles in prominent journals. They are able to use both quantitative and qualitative accounts of their public contributions to demonstrate the impact of their work, which helps them attract students, funding and new international research partners. Their university's leadership team is able to use this story in interactions with public officials and members of the local community to demonstrate the university's contributions to important public matters. Upon doing a multi-year analysis, the university's communications office notices that the research continues to generate a consistent number of media mentions every year.

Years later, the two researchers participate on a panel at an academic conference and are asked how their work was able to achieve such impressive impacts. They admit that for the first three years of their partnership almost no one paid attention to what they were doing. They were surprised at how influential their work eventually became. Ultimately, external conditions changed, dramatically affecting the social relevance of their work.

## Lessons

- There can be a significant time lag between when research occurs and when it has a noticeable societal impact.
- The impacts of research are partly determined by external conditions outside the control of researchers, in this case a shift in political priorities.
- Tenure and promotion committees should develop approaches to assess the work involved in enhancing the impacts of research undertaken with partners outside the academy.
- Institutions can play an important role in contributing to impact assessment tasks.
- Engaging with external partners can enable new forms of research, in this case studying the results of a new pilot project.
- Powerful stories of research contributions can be used to attract funding, talent, students and research opportunities.



The following sections in this report explore this complexity by discussing important characteristics of HSS scholarship and the strengths and weaknesses of various assessment methods. This discussion identifies the key factors that are most likely to determine the success of a scholarly impact assessment system. An understanding of these factors will help to identify those approaches that are most likely to avoid the unintended consequences described above and most likely to support the vibrancy of the research system.

## 5. Key factors in assessing the impacts of HSS research

### 5.1 The search for impact indicators

Efforts to describe the impacts of academic research have centred on the search for appropriate impact indicators. To date, no standard, broadly accepted measurement systems have been identified. In fact, the language in this field has evolved to reflect an understanding that the impacts of scholarship are not conducive to precise, standardized measurement. The word “indicators” is therefore preferable to the term “metrics,”<sup>20</sup> and impacts are “demonstrated” rather than “measured.”

A common topic in the literature on impact assessment is the relative merits of quantitative data, such as bibliometrics, and qualitative techniques, including peer review. Typically, such studies find that neither approach provides a clear solution to the challenge of assessing the impacts of research; each has its own merits and drawbacks. For example, in its 2012 review of research assessment approaches, the Council of Canadian Academies finds that no single indicator or set of indicators offers an ideal solution to impact assessment,

and that quantitative measures are best used to “inform rather than replace” expert judgement.<sup>21</sup>

An analysis produced by RAND Europe for the Higher Education Funding Council for England (HEFCE) in 2013 noted that there are many reasons why a quantitative approach might be welcome. A standardized, numerical measure can help ensure transparency, consistency, comparability across disciplines, the creation of a longitudinal record, and impartiality at the evaluation stage. However, such measures are dependent on the availability of robust data, have a limited ability to reflect diversity across academic disciplines, and can place a high initial burden upon researchers who would be required to produce the required assessment data. Furthermore, the report finds that significant measurement challenges have not yet been solved, particularly how to attribute the societal impacts of scholarship accurately over long periods of time.<sup>22</sup>

Qualitative approaches, on the other hand — such as case studies, testimonials and peer reviews — can accommodate many of these challenges because of

20. Wilsdon, J., et. al. (2015). *The Metric Tide: Report of the Independent Review of the Role of Metrics in Research Assessment and Management*. HEFCE <https://responsiblemetrics.org/the-metric-tide/>

21. Council of Canadian Academies. (2012). *Informing Research Choices: Indicators and Judgment*. <http://www.scienceadvice.ca/en/assessments/completed/science-performance.aspx>

22. Guthrie, S., et. al. (2013). *Measuring Research: A guide to research evaluation frameworks and tools*. RAND Corporation. <http://www.rand.org/pubs/monographs/MG1217.html>

their high flexibility, allowing evaluators to account for diversity across disciplines and research contexts. However, evaluating the results of a qualitative impact assessment will always require human judgement, which raises subjectivity and transparency challenges. It also limits the ability to make large-scale comparisons among researchers, projects and institutions, both across disciplines and over time.

A 2015 review of the U.K.'s research assessment system showed that there was little consistency in the indicators presented as evidence in the 7,000 case studies submitted in 2014. Researchers described a broad range of non-academic impacts, using diverse, inconsistent numerical evidence, which impedes systematic statistical comparisons. The diversity of research disciplines was found to have major implications for the measuring of outputs, particularly in the arts and humanities. The report concludes that, "Neither research quality nor its impacts are straightforward concepts to pin down or assess. Differing views on what they are, and how they can be measured, lie at the heart of debates over research assessment."<sup>23</sup>

Ultimately, there is substantial support in the literature for using blended methods that combine quantitative measures with qualitative approaches. These approaches can convey complex relationships such as the emergent, non-linear pathways between research and its impacts on society.<sup>24</sup>

## 5.2 Bibliometrics as a means of impact assessment

The most commonly used indicator of scholarly impact used today are bibliometrics — quantitative measures of scholarly publication and citation. Bibliometric assessment tools such as Impact Factor and H-Index are frequently used in academic settings for hiring and promotion purposes. The appropriateness of bibliometric assessments is a subject of much debate among scholars, and the subject therefore warrants closer examination.

**There is substantial support in the literature for using blended methods that combine quantitative measures with qualitative approaches.**

On the one hand, advances in digital data management have made bibliometrics a rich source of performance data; on the other, this data suffer from well-recognized limitations that many argue make them inappropriate for many types of assessment. Resistance to the use of bibliometrics as an assessment tool is based on a few key limitations: the narrow scope of impact they represent, interpretation challenges and differences across disciplines.

The first point is that bibliometrics tell us only what is occurring within one of the five impact baskets described in the Federation's 2014 impact framework: Scholarship. They are a proxy for impact within the academic community only, and even here they are one-dimensional, ignoring such activities as teaching and scholarly contributions to non-academic sectors.<sup>25</sup> And their value as proxies, even within this narrow scope, is contested. In particular, the practice of treating a high citation count as evidence of research quality is subject to several challenges. For instance:

- An older publication is likely to attract more citations than a newer one of similar quality.
- Citation-based evaluation tends to favour established researchers and disadvantage early-career researchers.
- An article might be considered important in a field, attracting many citations, despite employing low-quality research.

23. Wilsdon, J., et. al. (2015). *The Metric Tide: Report of the Independent Review of the Role of Metrics in Research Assessment and Management*. HEFCE. <https://responsiblemetrics.org/the-metric-tide/>

24. Economic & Social Research Council. (2009). *Taking Stock: A Summary of ESRC's Work to Evaluate the Impact of Research on Policy and Practice*. <http://www.esrc.ac.uk/files/research/evaluation-and-impact/taking-stock-a-summary-of-esrc-s-work-to-evaluate-the-impact-of-research-on-policy-and-practice/>

25. Wilsdon, J., et. al. (2015). *The Metric Tide: Report of the Independent Review of the Role of Metrics in Research Assessment and Management*. HEFCE. <https://responsiblemetrics.org/the-metric-tide/>

- Citation practices have been found to reflect gender and ethnic biases.
- English-language articles are cited more often than those in other languages.
- Certain types of research that are broadly applicable, such as those dealing with research methods, may attract above-average citation rates relative to their quality.
- Citation patterns favouring discipline-specific journals can disadvantage inter-disciplinary work.
- The distributions in citation counts are frequently skewed by outliers that attract unusually high numbers of citations.<sup>26</sup>
- Multi-author articles, which are becoming increasingly common in the natural sciences, have the potential to generate a high numbers of total researcher citations relative to single-author articles.

For these reasons, researchers are urging caution in the use of bibliometric-based assessments. For instance, a recent review of bibliometric assessments by the University of Waterloo finds that substantial differences in research practices between disciplines means that cross-disciplinary bibliometric assessments are rarely reliable. The report concludes that “Assigning a major role to bibliometric measures for hiring, merit review, tenure, and promotion decision-making is strongly discouraged and using bibliometric measures alone as a measure for inter-departmental research activity comparisons, is not appropriate.”<sup>27</sup>

It is also widely acknowledged that the appropriate use of bibliometric assessment is significantly limited by differences in the publication and citation practices between disciplines. The difference in practices between HSS and STEM (the natural sciences, technology, engineering and mathematics disciplines) create particularly serious limitations. For instance:

- Scholars in the natural sciences publish most frequently in journals, which generally attract more citations than do monographs, which are more frequently used in the humanities. Furthermore, citations from monographs are not captured in many citation indexes.
- STEM articles tend to use more citations than do HSS articles.
- HSS scholars are more likely to publish research in region-specific journals, which tend to not be as highly cited as discipline-specific journals.
- More specialized journals, such as those focusing on regions or those in non-English languages, are less likely to be included in large citation tracking systems.

26. These points are drawn from:

Royal Statistical Society. (2016). *RSS response to Lord Stern’s review of the Research Excellence Framework*.

<http://www.rss.org.uk/Images/PDF/about/RSS-response-to-Stern-Review-formatted-version-March16.pdf>

University of Waterloo. (2016). *White Paper on Bibliometrics: Measuring Research Output through Bibliometrics*.

[https://uwspace.uwaterloo.ca/bitstream/handle/10012/10323/Bibliometrics%20White%20Paper%202016%20Final\\_March2016.pdf](https://uwspace.uwaterloo.ca/bitstream/handle/10012/10323/Bibliometrics%20White%20Paper%202016%20Final_March2016.pdf)

Wilsdon, J., et. al. (2015). *The Metric Tide: Report of the Independent Review of the Role of Metrics in Research Assessment and Management*. HEFCE.

<https://responsiblemetrics.org/the-metric-tide/>

27. University of Waterloo. (2016). *White Paper on Bibliometrics: Measuring Research Output through Bibliometrics*.

[https://uwspace.uwaterloo.ca/bitstream/handle/10012/10323/Bibliometrics%20White%20Paper%202016%20Final\\_March2016.pdf](https://uwspace.uwaterloo.ca/bitstream/handle/10012/10323/Bibliometrics%20White%20Paper%202016%20Final_March2016.pdf)

This is not to say that there are no roles for bibliometrics, merely that they cannot by themselves produce an accurate description of academic impact. They can, when used appropriately, support other forms of context-specific assessment. The University of Waterloo's report recommends that: "Bibliometrics are most useful when employed in combination with peer and other expert review to assess the categorical or non-comparative impact and volume of scholarly work."<sup>28</sup>

### 5.3 Challenges in attributing impacts: Timelines and collaboration

The sections above have described the complex nature of HSS impacts and how the impacts that result take diverse forms in many areas of society. Underlying this complexity is the fact that many of these impacts have indirect paths, are the result of the sum efforts of a number of scholarly activities and are often only apparent over long periods of time. Furthermore, the societal relevance of different research areas can change dramatically due to changing circumstances beyond the control of researchers and outside of the predictive capabilities of any assessment system — such as unexpected policy shift, crises or major discoveries.

All of these factors contribute to obscuring the causal links between scholarship and impact. Correctly attributing impacts is a challenge in all research disciplines, but there are reasons to believe it is particularly challenging in the humanities and social sciences because of the long timelines often separating the work from its impacts in broader society and because of the incremental, cumulative and/or collaborative nature of much of HSS research.

Neither the social sciences nor the humanities lend themselves to easily identifiable instances of major discoveries because progress in these disciplines —

**The University of Waterloo's report recommends that: "Bibliometrics are most useful when employed in combination with peer and other expert review to assess the categorical or non-comparative impact and volume of scholarly work."**

while substantial — is often incremental in nature and indirect in its influence. The social sciences focus on human-dominated systems, where the vagaries of human psychology are always at play. The findings of new research must therefore be treated cautiously. Accepted knowledge in the social sciences develops gradually under the accumulated evidence of emerging research. As Bastow, Dunleavy and Tinker (2014) articulate: "Social science research is generally 'collective' in character — it does not lend itself to the 'unique discovery' image of research."<sup>29</sup>

Advancement in humanities research is also highly incremental. While the humanities include a broad range of diverse disciplines, one element they have in common is the search for *understanding* rather than *knowledge*. Humanities scholars focus not so much on discovery of phenomena, but on exploring their significance and meaning. One of the key characteristics of this work is that conclusions remain perpetually contestable. The development of understanding therefore occurs in a gradual, incremental, collectivist fashion.<sup>30</sup>

28. Ibid.

29. Bastow, S., et al. (2014). *The Impact of the Social Sciences*. The London School of Economics and Political Science. <http://blogs.lse.ac.uk/impactofsocialsciences/our-books/>

30. Ainsley, D., et al. (2010). *Performance Indicators for the Humanities*, Humanities on Performance Indicators Working Group, University of Toronto.

# Case study: Collective impacts in immigrant skill development

*This case study is hypothetical, but based on actual Canadian research projects.*

A senior psychology professor at an Alberta university has spent 15 years studying the learning behaviours of people facing various cognitive difficulties. She has been asked to describe the impacts of her research at several points throughout her career when applying for research funding. Each time, she has relied mainly on bibliometrics that describe her contributions to scholarly literature. Despite the lack of any practical applications of her research, most of her funding applications have been successful, with funders recognizing the value of the scholarship she has produced.

One summer, she is contacted by an education scholar in British Columbia who asks if her work on learning behaviours might be applicable to new immigrants to Canada, who frequently face language and cultural barriers to skill development. Might her work on barriers to learning help inform new teaching methods? The psychology professor agrees this might be the case, and is connected with a well-established B.C.-based network that brings together researchers, community-based service providers and government department to help improve the economic integration of new immigrants.

The research network has been a long-term supporter of teaching services across the province, helping service providers incorporate knowledge from scholarly research into skills-training programs for new immigrants. The network routinely works with its partners in government and immigrant-service organization to track impact indicators, including testing results, course evaluations and long-term employment and income data.

The psychology professor becomes involved in the network and, working



together with a group of education scholars, she is able to develop a set of teaching techniques that are included in a new series of training courses. These courses begin generating some promising early results, and she is invited to continue working with the network to study and refine the teaching techniques informed by her theoretical framework on learning.

## Outcomes

The next time the professor is asked to describe the impact of her work during a funding application, she is able to include a case study describing her contributions to immigrant training that reinforces the bibliometric indicators she previously used to describe her scholarly contributions. She also provides data provided by the research network showing the improvements the immigrant service users are experiencing in the labour market. It is, of course, impossible to know the extent to which her individual contributions are responsible for these general benefits.

When the research network applies for a new round of government funding,

it is able to describe these same broad social and economic benefits, reinforced with case studies of select programs and testimonials from practitioners and service users. It is not, however, able to determine how much each researcher contributed to these overall benefits.

## Lessons

- Bibliometrics can be a valuable indication of scholarly contributions, which can be enhanced by narrative evidence.
- It is not always possible to find direct causal links between research and impacts in cases where there is a major time lag between research and application (in this case, 15 years passed before a possible practical application for the research was discovered) and/or when the impacts are the result of the combined efforts of many researchers.
- Networks can play a significant role in connecting researchers, practitioners and end-users. These networks can facilitate the use of sound pathways-based impact plans.



**This incremental knowledge-building is one reason why the impacts of HSS scholarship are frequently felt over long timeframes, extending even beyond the lifespans of individual researchers.**

This incremental knowledge-building is one reason why the impacts of HSS scholarship are frequently felt over long timeframes, extending even beyond the lifespans of individual researchers. Even where a compelling study seems to influence significant policy, discourse or institutional change, it is important to recognize the legacy of scholarly work that laid the necessary ground work, gradually shifting knowledge and understandings until the moment is right for change to occur. This is usually the case for breakthroughs in the natural and health sciences as well; they are made possible by the accumulated supporting research that came before.

In such cases, attributing the impact of any particular scholar's work with precision is simply not feasible. In recognition of the fact that the outcomes of their work is often indirect, some researchers prefer discussing "contributions" rather than "attributions."<sup>31</sup> Because of these attribution challenges, an impact assessment system should not be limited to assessing individual scholars. Rather, it should also take into account the collective and long-term impacts of research teams, fields of inquiry and institutions.

## 5.4 Pathways to impact

"Impact pathways" is an approach to planning and assessing impacts of research that relies on building an understanding of how research involves and affects non-academic partners and end users at various stages. As such, it is most relevant for tracking impacts outside academic settings. The pathways approach is closely related to the concept of knowledge mobilization, which has been employed in the granting application processes of Canada's research granting agencies since the early 2000s. Leading Canadian research-impact practitioners — notably those affiliated with the ResearchImpact network<sup>32</sup> of 12 universities — are employing pathways approaches to demonstrate impacts in a broad range of research projects. This section draws from their work to lay out key elements of the approach.

A pathways approach to achieving, assessing and communicating impacts begins with identifying a clearly articulated pathway from the start of the research project to its impacts. An impact pathway describes the causal linkages in the steps between research and impact and enables the collection of evidence of impact at each step. Many examples of how this approach is used in research settings are available at [researchimpact.ca](http://researchimpact.ca).<sup>33</sup> Several impact pathway templates are available, including the

**An impact pathway describes the causal linkages in the steps between research and impact and enables the collection of evidence of impact at each step.**

31. Morton, S. (2015). Progressing research impact assessment: A 'contributions' approach. *Research Evaluation* 24.4: 405-419. <http://rev.oxfordjournals.org/content/24/4/405>

32. See <http://researchimpact.ca/>

33. For example, this summary describes how Disability Rights Promotion International produced research to support disability-rights monitoring practices through a three-stage process involving more than 40 partners: [http://search.researchimpact.ca/\\_app/impact/files/tables/files.path.75.pdf](http://search.researchimpact.ca/_app/impact/files/tables/files.path.75.pdf)

Canadian Academy of Health Sciences Research Impact Assessment pathway,<sup>34</sup> the Payback Model<sup>35</sup> and the Co-produced Pathway to Impact.<sup>36</sup> These templates provide a starting point to guide development of a specific impact pathway.

A robust research-to-impact pathway typically seeks to accomplish five tasks:

- 1. Accommodate and enable collection of evidence for end-user benefit:** A specific pathway should instruct which indicators are needed.
- 2. Support engagement of end users (communities, policy makers, service providers) throughout:** The pathways approach emphasizes meaningful collaboration between academic and non-academic stakeholders at all stages of a research program, from inception to impact.
- 3. Work at the level of the project, the program, the organization and the system:** An impact pathway should be able to be used for a single project but be scaled for a portfolio of projects such as in a SSHRC Partnership Grant or a Network of Centres of Excellence.
- 4. Enable impact planning by providing a general impact model that can be adapted to specific projects:** A generic impact pathway is adapted to address the specifics of each research project, including its research process, the impact context and the indicators to be assessed at each stage.
- 5. Drive uptake and adoption of research by end-users:** Knowledge mobilization efforts support moving from research to uptake and adoption of research by a non-academic end user. Ideally collaboration occurs at all stages along the pathway.

Non-academic research partners are critical to all research-to-impact pathways in the impact areas of economy, society and culture, and practice and policy.<sup>37</sup> In these spheres it is external actors and partners, not academic researchers, who shape the impacts from research, whether that be through a company and its products (industry), public policies (government) or social services (community). The pathways approach to impact therefore supports forms of engaged scholarship that focus on collaborative research with the practitioners and end-users who are ultimately affected by the research.<sup>38</sup>

An important benefit of the pathways approach is that it helps to identify the indicators to be assessed at each stage. A pathway that flows from research towards a policy outcome will have indicators such as engagement with government committees, development of policy briefs and collaboration with policy makers. A pathway that flows from research towards a new social service program will have indicators such as collaboration with social service agencies, presentations to community town halls, engagement with target populations, and assessment by clients. Different pathways generate different indicators.

The pathways approach is a flexible tool that must be adapted to the specifics of the case. Ultimately, a specific pathway needs to be produced and tailored for each research-to-impact project, reflecting its unique research process, partners and relevant impact indicators.<sup>39</sup>

34. Especially as adapted by Alberta Innovates Health Solutions: Graham, K. E. R., Chorzempa, P. A., Valentine, P. A., & Magnan, J. (2012). Evaluating health research impact: Development and implementation of the Alberta Innovates — Health Solutions impact framework. *Research Evaluation*, 21(5), 354-367 <http://rev.oxfordjournals.org/content/21/5/354>

35. Foundational pathway forming the basis for the CAHS pathway and for U.K. Research Excellence Framework: Buxton, M., Hanney S. (1996). How can payback from health services research be assessed? *Journal of Health Services Research & Policy* 1(1):35-43

36. Phipps, D. J., Cummings, J., Pepler, D., Craig, W., Cardinal, S. (2016) The co-produced pathway to impact describes knowledge mobilization processes. *Community Engagement and Scholarship*, 9(1): 31-40 <http://bit.ly/2fCqTcw>

37. Morton, S. (2014). *Creating research impact: the roles of research users in interactive research mobilisation*. Evidence & Policy 11(1): 35-55(21).

38. Bowen, S. J., Graham, I. D. (2013). From knowledge translation to engaged scholarship: Promoting research relevance and utilization. *Archives of Physical Medicine and Rehabilitation*, 94 (1 Suppl 1), S3-8. <http://www.sciencedirect.com/science/article/pii/S0003999312009227>

39. By way of example, in the U.K. Research Excellence Framework's 2014 exercise there were 6,679 research impact case studies that demonstrated 3,709 unique impact pathways. [http://www.hefce.ac.uk/pubs/rereports/Year/2015/analysisREFImpact/Title\\_103621\\_en.html](http://www.hefce.ac.uk/pubs/rereports/Year/2015/analysisREFImpact/Title_103621_en.html)

# Case study: A university's mission to produce community-engaged research

***This case study is hypothetical, but based on actual Canadian research projects.***

A Quebec university is implementing a new strategic research plan that encourages community-engaged research. To support faculty, the university has created a working group with a mission to help broker relationships between researchers and community groups, to help collect impact data, and to develop and promote impact assessment tools that individual researchers can employ in their research projects.

A history professor at the university becomes an enthusiastic supporter of the new strategy and develops a new graduate course focused on matching students with community projects. The working group helps her connect with three community organizations that are looking for assistance to enhance, preserve and showcase local historical knowledge. Projects proposed by these community groups form the basis of the students' research assignments for the course and for paid summer co-op placements.

The professor and her students work with their partners to determine what needs in the community they can address, and what products or programs they can help create. As plans are developed, the partners are able to help identify opportunities to assess impacts. These include data on participation at community consultation sessions, attendance at events, visits to a website, and a short quiz designed to assess knowledge gains. These indicators help the professor complete the impact reports designed by the university's community-engagement working group. Furthermore, the community partners participate in interviews with the university's working group to help produce impact case studies and testimonials about the course.

## Outcomes

At the end of the five-year plan, the university is able to demonstrate successful partnerships with its community through case studies, testimonials and project evaluations. The professor is able to expand her network of local history enthusiasts who help her identify interview subjects for her research into how neighbourhoods adapt to technological change. Her research is published in several journals, and her new network becomes the initial audience for a blog devoted to community history.

The history professor's course has helped her students develop valuable project-management experience, and several graduates are able to secure jobs through the connections they have made. She asks her dean to help track the career paths of their graduate students.

Having led one of the university's most successful community-engagement programs, the professor is invited to join a committee tasked with developing a guide that highlights promising community engagement practices. This guide becomes a training tool used throughout the institution and inspires similar programs at other universities.

## Lessons

- Research impacts occur both at the level of an individual researcher and also at a collective level — in this case from a university research strategy involving many researchers over a multi-year timeframe.

- Institutional supports can be a vital part of achieving and assessing impacts. In this case, the university helped by brokering relationships, developing assessment tools and supporting knowledge sharing and learning. This can also be a two-way relationship: in this case, the researcher also contributes to the development of impact assessment guides.
- Co-op learning experiences can enhance students' readiness for job markets and extend the influence of research. Departmental and institutional support is needed to track student learning and employment outcomes in a systematic way.
- Practitioners and end users are intrinsically linked to research impacts. In this case, they not only helped maximize and assess the impacts of research but also helped generate valuable new scholarship.
- A pathways approach that considers how research interacts with practitioners and end users serves as a strong foundation for achieving, assessing and communicating impacts.



# 6. Conclusions and recommendations

This report is based on the premise that the use of impact assessments can bring substantial benefits to the research community, including enabling the community to better communicate its value, encouraging developments in research and teaching, and — fundamentally — helping the community find ways to increase its already substantial impacts across society. However, the potential unintended consequences of a flawed impact assessment system need to be taken seriously.

This report aims to help the HSS community capture the potential benefits and avoid the potential risks by highlighting the key factors that will underlie the success of any assessment system. This section includes a summary of these key factors, and presents a set of recommendations informed by these observations that describe positive approaches for assessing the impacts of HSS work.

The following are the key observations discussed in this report:

**Benefits of impact assessment:** Impact assessment has the potential to better communicate the value of scholarly work, to further increase its beneficial impacts across society, to improve collaboration between scholars and non-academic practitioners, to support the development of new forms of research and teaching, to improve administrative decision making, and to better demonstrate accountability to the public.

**Risks of a flawed assessment process:** A flawed assessment process has the potential to produce harmful unintended consequences. A flawed assessment process risks: undervaluing scholarly work, creating perverse incentives to distort research goals, creating gaming incentives that will undermine the meaningfulness of certain measurements, placing

undue burdens on participants, and prioritizing what is easily measurable above what is desirable.

**Indicators of impact:** No definitive set of indicators has been devised that can capture the impacts of scholarly research. Both quantitative metrics (such as citation counts) and qualitative indicators (such as case studies) have advantages and disadvantages. Capturing the impacts of diverse scholarly works will require the use of a broad range of indicators, which are expected to continually develop over time.

**Bibliometrics:** Bibliometrics are currently the most widely used indicator of scholarly impact; however, these metrics are subject to important limitations. Bibliometric comparisons across disciplines, for instance, are not recommended due to differences in citation practices. However, bibliometric data can be valuable when used in conjunction with other qualitative indicators.

**Attributing scholarly impact:** The effects of academic research and teaching are often felt only over long periods of time, and they are often the result of the cumulative efforts of many scholars. For these reasons, it is rarely possible to make precise causal connections between any particular scholarly work and its ultimate social impact.

**Non-academic partners and end users:** Many research impacts are fundamentally linked to the contributions and experiences of those outside the scholarly research community. Efforts to achieve, assess and communicate the impacts of research should take into account the contributions and experiences of the non-academic partners who help produce research, the practitioners who implement research findings and the end users who benefit from the impacts of research.

As these observations suggest, demonstrating the true impact of HSS work will be a challenging endeavour. However, this endeavour is a worthwhile one, considering the substantial benefits that may result from a balanced and effective impact assessment system. By recognizing important characteristics of HSS scholarship and by being attentive to the strengths and limitations of available assessment techniques, useful ways of demonstrating the true impacts of HSS scholarship can be found. The following recommendations are informed by the key observations listed above. Together, they describe an approach to impact assessment that can capture the rich impacts of HSS scholarship across society.

**Define impacts broadly.** As illustrated in the Federation’s 2014 working paper, HSS work is highly diverse, as are its impacts across society. Recognizing this complexity is essential to understanding the concept of impacts: it is inherently difficult to define, to attribute and to quantify. Using a broad, flexible understanding of impacts, which recognizes the many valid interpretations of the term across subject areas and disciplines, is appropriate. This understanding correctly encourages a flexible, pluralistic approach to impact assessment.

**Use diverse and flexible sets of indicators, including qualitative and quantitative methods.** One size will not fit all. No one defined set of indicators will be able to capture the complex and far-reaching impacts of diverse HSS scholarship. Instead, the impacts of HSS work in a given area should be assessed using a flexible and diverse set of indicators that should develop over time as the knowledge and practice of impact assessment evolves. Assessment systems should seek to make the best use of both quantitative and qualitative indicators. A pathways approach can be used to help determine useful impact indicators.

**Researchers should play a leading role in describing the impacts of their work, in collaboration with research partners and users.** Considering the diversity of research areas in HSS, the range of potential impacts the work can have and the number of potential indicators that can be utilized, scholars themselves will need to play a leading role in selecting the indicators that are best able to capture the impacts of their work.

As described in the pathways approach to impact assessment, research users and partners, including those outside the academy, also play an integral role in impact assessment.

**Assess collective impacts.** HSS scholarship has substantial impacts that are felt over long periods of time, resulting from the cumulative efforts of many researchers. This fundamental characteristic of scholarly work creates important limitations for attributing the impacts made by any individual scholar or particular scholarly work. Recognizing this, assessments of HSS work should include consideration of collective and long-term impacts, such as those by research teams, fields of inquiry and institutions.

**Develop institutional supports to enable effective impact assessment.** Assessing the impacts of scholarly work is a complex and challenging endeavour. The design of any impact assessment system should include mechanisms to manage the associated burden. While, as the above recommendation states, scholars should play a leading role in determining how their work is assessed, administrative actors within universities and public agencies must provide adequate supports to ensure that the demands of assessment do not unduly diminish a scholar’s ability to engage in other valuable activities.

**By recognizing important characteristics of HSS scholarship and by being attentive to the strengths and limitations of available assessment techniques, useful ways of demonstrating the true impacts of HSS scholarship can be found.**

**Academic institutions and research funders have a significant task to help develop tools and supports to allow scholars and institutions to perform robust impact assessments without creating undue pressures on researchers.**

## **Beyond this paper**

The above recommendations describe an approach to impact assessment that can capture the benefits of impact assessment and avoid potentially harmful unintended consequences. These recommendations are presented to help to inform a positive and productive dialogue within the HSS community about the development of impact assessment systems.

These recommendations, however, do not provide a comprehensive set of answers. To operationalize the approaches recommended in this report, significant work is required at the researcher level to identify the most relevant and useful indicators for assessing impacts in different fields of study. Academic institutions and research funders have a significant task to help develop tools and supports to allow scholars and institutions to perform robust impact assessments without creating undue pressures on researchers.

As this report illustrates, assessing the impacts of scholarship is a challenging endeavour, but there are approaches available to us to overcome those challenges. Through creativity and collaboration, impact assessments can help to strengthen Canada's research system, helping the scholarly HSS community to more clearly demonstrate the valuable work being done today and to learn how yet greater impacts can be achieved in the future.





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