



NETWORK FOR Advancing & Evaluating the Societal Impact of Science

14, 15, 16 October 2020

Welcome to the fourth international **AESIS** conference on

Impact of Social Sciences and Humanities



Future Skills Centre des Centre Compétences futures

The Impact of Social Sciences and Humanities Shifting the Discourse

October 2020

Wendy Cukier, MA, MBA, PhD, DU (hon) LLD (hon) M.S.C.

Founder & Academic Director, TRSM Diversity Institute Professor, Entrepreneurship & Strategy, Ryerson University wcukier@ryerson.ca

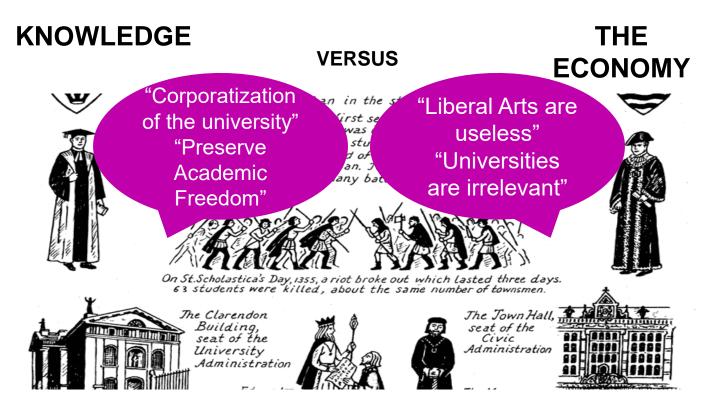
@CukierWendy

- > Context
- > Rethinking Innovation
- > Skills Gaps
- > Looking for Skills in the Wrong Places
- > Innovation <-> Inclusion
- > The Way Forward



- · Countries around the world are challenged
 - Innovation to drive economic growth and job creation
 - Skills gaps
 - Inequality
- Social Sciences and Humanities have intrinsic value but also are key to driving this agenda

End 500 years of cultural warfare



RETHINKING INNOVATION

Innovation is doing differently

- There is no innovation without users and adoption
- 40% of Ontario's SMEs do not have an internet presence
- Arts and Social Sciences are essential to understanding barriers and drivers

"Creativity is thinking up new things. Innovation is doing new things." –Theodore Levitt

BUSINESS INSIDER Microsoft believes that lessons from a liberal arts education are necessary for the proper development of AI. Justin Sullivan/2019"The Future Computed,"

Not Just Economic: The "World's to do list"



6

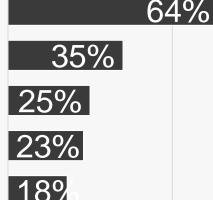
SKILLS GAPS: PLANNING WHEN YOU CANNOT PREDICT

Candidates with the technical skills we need

Management and/or leadership talent we need

Workers willing to relocate to another province

Candidates with the human skills we need



0%

Other



Bridge Gaps in Employer and Graduate Expectations

	% of employers expecting high skill competency	% of graduates perceived to have high skill competency
Ability to learn on the job	93%	53.3%
MS Office	74%	50.3%
MS Excel	61.7%	50.3%
Ethics ability	81.3%	48.2%

8

Bridge Gaps in Employer and Graduate Assessments

Student Perception

93% believe they are highly proficient in writing

91% in oral communication



Employer Perception 39% believe recent graduates are highly proficient in writing

47% in oral communication



LOOKING FOR SKILLS IN ALL THE WRONG PLACES

Access to Opportunities Program (ATOP) spent \$150 million over three years into Ontario universities to address these skills. "Our sustained growth ... requires large numbers of new Canadian graduates in computer science, electrical and computer engineering, physics, and mathematics." Roth, 1998

"Technological skills are not the only need. Marketers are harder to find than engineers." CATA, 2001

Assumptions About STEM

Field	2005 grad	2014 grad	
Dentistry	\$103,750	\$99,601	
Veterinary Medicine	\$70,714	\$77,440	
Law	\$75,376	\$72,412	
Medicine	\$68,333	\$72,875	
Computer Science	\$56,828	\$70,148	
Engineering	\$58,939	\$65,475	
Nursing	\$58,927	\$62,201 Lov	vest
Mathematics	\$50,814	\$58,718	
Business & Commerce	\$52,383	\$54,416	
Health Professions	\$51,410	\$51,061	
Therapy & Rehabilitation	\$50,313	\$52,500	
Other Arts & Science	\$49,954	\$44,736	
	Dentistry Veterinary Medicine Law Medicine Computer Science Engineering Nursing Mathematics Business & Commerce Health Professions Therapy & Rehabilitation	Dentistry\$103,750Veterinary Medicine\$70,714Law\$75,376Medicine\$68,333Computer Science\$56,828Engineering\$58,939Nursing\$58,927Mathematics\$50,814Business & Commerce\$52,383Health Professions\$51,410Therapy & Rehabilitation\$50,313	Dentistry \$103,750 \$99,601 Veterinary Medicine \$70,714 \$77,440 Law \$75,376 \$72,412 Medicine \$68,333 \$72,875 Computer Science \$56,828 \$70,148 Engineering \$58,939 \$65,475 Nursing \$50,814 \$58,718 Business & Commerce \$52,383 \$54,416 Health Professions \$51,410 \$51,061 Therapy & Rehabilitation \$50,313 \$52,500

Field	2005 grad	2014 grad
Physical Sciences	\$48,860	\$43,444
Education	\$47,992	\$43,550
Social Sciences	\$43,996	\$42,047
Kinesiology/ Recreation/Phys Ed.	\$42,647	\$38,948
Agriculture & Biology	\$42,038	\$38,660
Humanities	\$41,550	\$38,892
Journalism	\$40,870	\$40,190
Fine & Applied Arts	\$36,911	\$35,742
Average	\$49,669	\$49,636

STEM is necessary but insufficient



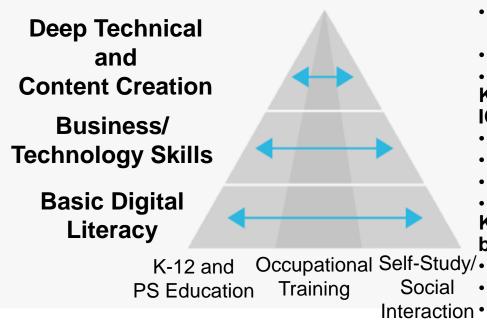




Alternative Narratives and Pathways: only 6 of these CEOs have STEM backgrounds



Alternative Pathways to Digital Skills



Knowledge, skills and awareness needed to:

- Develop innovative ICT infrastructure, products and services
- Grow the ICT industry
- Create digital media content advantage Knowledge, skills and awareness to use ICTS to:
- Build markets for ICTs
- Drive productivity and competitiveness
- Start up and build SMEs
- Capacity to innovate using digital technology
 Knowledge, skills and awareness needed
 by all Canadians to:
- y/• Participate in the digital Economy
- Enhance personal opportunities, life quality

tion • Use digital technologies to access products and services

4

INNOVATION <-> INCLUSION

- "Foreign" degree holders are more likely to be underemployed
- Despite reported shortages, there is untapped talent: A study found job applicants with a "foreign sounding last name" were 40% less likely to be called for an interview in SMEs and 20% less likely in large companies

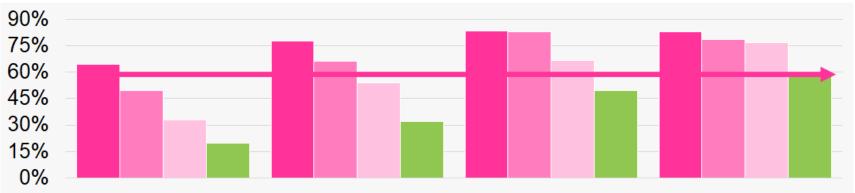
Women are under-employed and under-paid

- 50% of gender pay gap in is linked to occupational segregation – women in sectors with lower pay
- However, women in media, retail, and construction industries, as well as C-suite executives most likely to be underpaid compared to their equally qualified men
- Women are under-represented in the highest paid senior positions

Gender gap persists despite increase in educational attainment in 25 years: from **13.7%** women with university degrees to **35.1%.**



People with Disabilities



diploma

Less than a high school diploma

High school Trades certificate University degree or college diploma

- No disability
- Moderate disability

- Mild disability
- Severe or very severe disability

THE WAY FORWARD



- Nuanced understanding of skills gaps and shortages in terms of regions, sectors, occupations, skills and tools
- Link investment in skills development to innovation and growth
- Increase pipeline for in demand occupational groups – engineering, computer science, skilled trades
- Understand and apply diversity and inclusion lens to drive performance.



Define the Skills Needed

Skills needed for specific roles:

- founders and senior management teams
- skilled trades
- deep technical skills (engineering, computer science, etc.)
- sales and marketing skills



Skills gaps at the senior level are linked to SME performance and the prospects for start-ups.



Develop common language

- Important differences between skills, techniques, and tools
- Significant issues around measurement and comparisons
- Lack of common definition: undermines the ability of job-seekers to communicate their skills in relation to employers' requirements and employers in understanding and communicating the skills they need.

Skills = Developed **Capacities Techniques** = **Specific** Approach Tools = Software/ **Program**

Essential Skills

- skills needed to participate, adapt and thrive in learning, work and life.
- include foundational skills those skills on which all other skills are built, and socioemotional skills – the human skills required for effective social interaction.



 1% increase in literacy level could be associated with a 2.5% rise in labour productivity and a 1.5% rise in the per capita GDP

21

Embrace Innovation

- Increased awareness of training and upskilling as a competitive advantage
- Shared human resources
 platforms
- Defining and measuring skills
- New approaches to training
- New tools for recruitment
- Work-integrated learning
- New approaches to retention
- Outreach to diverse populations



Work Integrated Learning and ADaPT

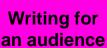
Finance







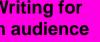


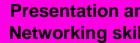


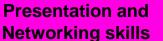
Adobe

Creative

Suite











Google **Analytics**

Search Engine Optimization

Coding

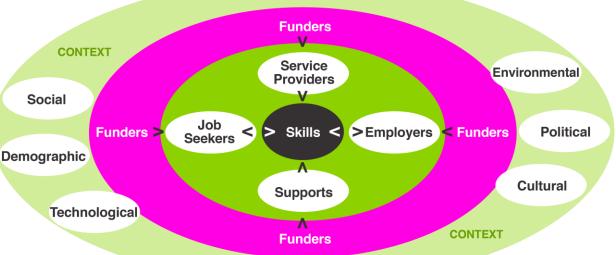


Business &

Marketing

Strengthen the Skills and Employment Ecosystem

- Address supply (job seekers and workers) but also demand (employers)
- Technology can support:
 - Development of skills
 - Innovative approaches to recruitment
 - Upskilling
 - Reskilling
 - Inclusive work environments



Wendy Cukier, Academic Director, Diversity Institute

wcukier@Ryerson.ca



ryerson.ca/diversity

diversityinstitute@ryerson.ca

@RyersonDI

416-979-5000 x6740

Studying the Use of Research in Policy & Practice

Vivian Tseng

@VivianT88
@wtgrantfdn

AFT



to inform policy and practice Supporting Research to Improve the Lives of Young People

\$20M in grants

55 studies

- Half in education
- Half in child welfare, health, mental health



Rigorous Scientific Inquiry

- Early research
- > Theory
 - Explanatory frameworks
 - Testable propositions
- Empirical Rigor
 - Research design
 - Methods
 - Measures



Improve

Outcomes

A COMPANY AND A MARK MARKA

Implement What Works

Identify What Works

Research





Research Agenda on Research Use

1) Strategies to improve use of research

- 2) Strategies to improve production of useful research
- 3) How and under what conditions using research improves outcomes





Thinking Through the Impact Lifecycle

David Budtz Pedersen PhD Professor of Impact Studies & Science Communication Aalborg University Copenhagen

15 October 2020 AESIS |Social Science and Humanities Impact Conference 2020



AALBORG UNIVERSITET

The four I-s of Research Impact

- 1. INVESTING IN IMPACT. Alignment of mission statement (strategy/values) impact profile and indicators.
- 2. INCENTIVES. Without emphasis on incentives, recognition, and impact awards, most research-2-business activities in SSHA will not occur.
- 3. INTERMEDIARIES. Roles and skill-sets needs to be cultivated and updated with on-demand services, training and knowledge hubs/brokers.
- 4. INFRASTRUCTURE. Better, more robust data about impact activities used to learn from best practices and inform new strategies and instruments.



Humanomics Research Centre 2020

Build 'productive interactions'

- Throughout the research process
- Skips knowledge dissemination and linear notions of 'uptake'.
- Continuous involvement.
- No gap to bridge
- Build boundary skills / promote knowledge brokers / organisations







Establish an impact culture

Co-creation based on mutual understanding and trust

Collaboration with stakeholders needs alignment of different motivations, values, 'languages' and goals

Importance of communication: build a 'joint problem space' with partners and end-users (no 'gap' to bridge)

Need for knowledge translation

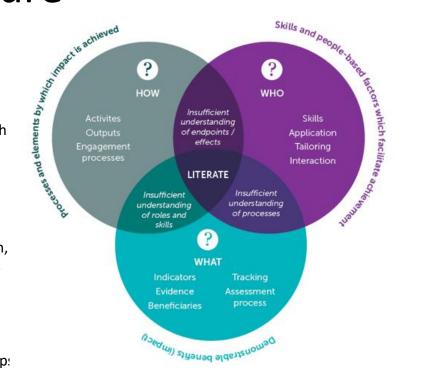
Good co-creation pays off in more than one way

Integrative knowledge environments include skills for translation, synthesis and implementation of resaerch in real-world settings.

Conducive institutional contexts

Alignment of mission, strategy and indicators

Organise impact pathways and 'theory of change' for partnership:



Thank you for the attention

David Budtz Pedersen: davidp@hum.aau.dk Twitter: @HumanomicsMap Website: http://mapping-humanities.dk

Supported by

VELUX FONDEN



Research Evaluation, 29(1), 2020, 4-21 doi: 10.1090/reseval/rvc000 Special section

Methods for mapping the impact of social sciences and humanities—A literature review

David Budtz Pedersen*, Jonas Følsgaard Grønvad and Rolf Hvidtfeldt @

Humanomics Research Centre, University of Aalborg, A.C. Meyers Vænge 15, Copenhagen DK-2458, Dermark

*Corresponding author: Email: davidp@hum.aau.dk.

Abstract

This article explores the current literature on 'research impact' in the social sciences and humanities (SSH). By providing a comprehensive review of available literature, drawing on national and international experiences, we take a systematic look at the impact agenda within SSH. The primary objective of this article is to examine key methodological components used to assess research impact comparing the advantages and disadvantages of each method. The study finds that research impact is a highly complex and contested concept in the SSH literature. Drawing on the strong methodological pluralism emerging in the literature, we conclude that there is considerable room for researchers, universities, and funding agencies to establish impact. assessment tools directed towards specific missions while avoiding catch-all indicators and universal metrics.

Key wards: research evaluation; impact assessment; social sciences and humanities; iterature review

Introduction

Across the international research and intervation community there is a growing interest in how to assess and communicate the diverse impacts of scholarly work. Being able to demonstrate the societal uttake and value of social sciences and humanities (SSH) research is increasingly seen as a crucial component in ensuring accountability and transparency (Desfield et al. 2014; Morton 2015; Greenhalgh et al. 2016; Ravenacodt et al. 2017). In moret years, the notion of 'research impact' has gained significant traction within the science system, and has been embedded in rmrarch policies, funding instruments, and evaluation regimes (e.g. Rip 2000; Holbrook and Fedeman 2011; Bornmann 2011; Buchanan 2013; Langfeldt and et al. 2007). In this article, we provide an overview of the existing methods for broader impact assessments across SSH.

European SSH community and beyond. The diversity of the impact (Monton 2015). However, rather than being paralyzed by the lack

For parminations, plance email: journals permissionedbug; con-

anonda in SSH reflects a broader toreal within impact studies. The evolution of impact studies has shown that public research organizations do not just release their benefits to society following a linear model of mowth and application. Instead, real-world effects of rewarch occur at different stages in the research process, extending from knowledge desermination and knowledge mobilization to longterm applications and dynamic effects.

Much progress has been made in measuring both the outcomm of ensurch and the processes and activities through which these are achieved (Greenhaleh et al. 2016). However, as we demonstrate in this article, there exists a multitude of approaches to impact anemment reflecting the contrilex and multi-dimensional wave in which Scordato 2015; Devick and Samuel 2017; Holbook 2017; Reale mwarth is taken up by society. As Rafids (2017) mored at the Science, Technology, and Innovation Indicators Conference in 2017: The contributions of science to society are so varied, and mediated A key finding of the literature review is that different funding by so many different actors, that indicators used in impact anew agencies, policy-makers, and meanch organizations operate with ment cannot be universal. Instead, they need to be developed for different models and methods for impact assessment. Impact simply given contexts and used alongside qualitative assessment'. Assessing does not mean the same thing across institutions, grographies, and the impact of social science and humanities is indeed challenging. research cultures. This conceptual diversity is selfected in the manber of methods and frameworks which are used to mack, demon-world settings mean that linking research processes or outputs to strate, assess, and incentivize the impact of research across the wider changes is difficult, and timescales are hard to preder

© The Authorid 2026 Published by Oxford University Press. All rights reserved.