



# AESIS

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



Work Wellness Institute  
L'institut de bien-être au travail



FEDERATION FOR THE  
HUMANITIES AND  
SOCIAL SCIENCES | FEDERATION  
DES SCIENCES  
HUMANAINES

**Di**VERSITY  
INSTITUTE



Future Skills  
Centre



National Research  
Council Canada



THE COLLABORATIVE



RESEARCH  
**IMPACT**  
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RECHERCHE  
CANADA



CIFAR



**Future Skills**  
Centre

Centre des  
**Compétences futures**

# The Impact of Social Sciences and Humanities

## Shifting the Discourse

October 2020

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



# CONTEXT

- 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

KNOWLEDGE

VERSUS

THE ECONOMY



“Corporatization of the university”  
“Preserve Academic Freedom”

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“Liberal Arts are useless”  
“Universities are irrelevant”



*On St. Scholastica's Day, 1355, a riot broke out which lasted three days. 63 students were killed, about the same number of townsmen.*



*The Clarendon Building, seat of the University Administration*



*The Town Hall, seat of the Civic Administration*



# 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,"

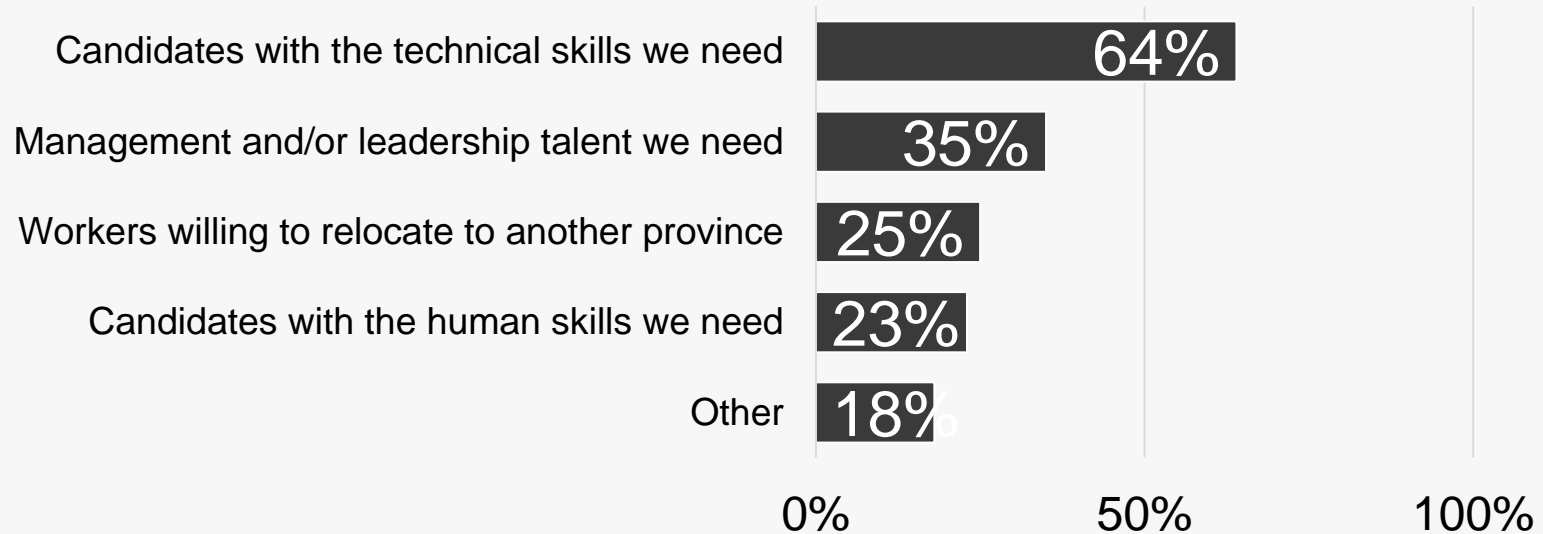


# Not Just Economic: The “World’s to do list”

<b>1</b> NO POVERTY 	<b>2</b> ZERO HUNGER 	<b>3</b> GOOD HEALTH AND WELL-BEING 	<b>4</b> QUALITY EDUCATION 	<b>5</b> GENDER EQUALITY 
<b>6</b> CLEAN WATER AND SANITATION 	<b>7</b> AFFORDABLE AND CLEAN ENERGY 	<b>8</b> DECENT WORK AND ECONOMIC GROWTH 	<b>9</b> INDUSTRY, INNOVATION AND INFRASTRUCTURE 	<b>10</b> REDUCED INEQUALITIES 
<b>11</b> SUSTAINABLE CITIES AND COMMUNITIES 	 <b>THE GLOBAL GOALS</b> For Sustainable Development			<b>12</b> RESPONSIBLE CONSUMPTION AND PRODUCTION 
<b>13</b> CLIMATE ACTION 				<b>14</b> LIFE BELOW WATER 



# SKILLS GAPS: PLANNING WHEN YOU CANNOT PREDICT





# Bridge Gaps in Employer and Graduate Expectations

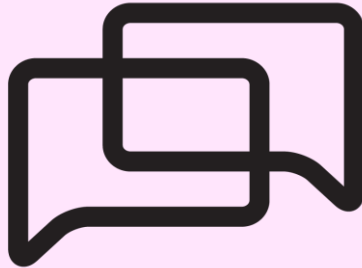
	% of employers expecting high skill competency	% of graduates perceived to have high skill competency
Ability to learn on the job	93%	53.3%
MS Office	74%	50.3%
MS Excel	61.7%	50.3%
Ethics ability	81.3%	48.2%

# 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	<b>\$99,601</b>
<b>Veterinary Medicine</b>	\$70,714	<b>\$77,440</b>
<b>Law</b>	\$75,376	<b>\$72,412</b>
<b>Medicine</b>	\$68,333	<b>\$72,875</b>
Computer Science	\$56,828	\$70,148
Engineering	\$58,939	\$65,475
Nursing	\$58,927	\$62,201
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

Highest

Lowest

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

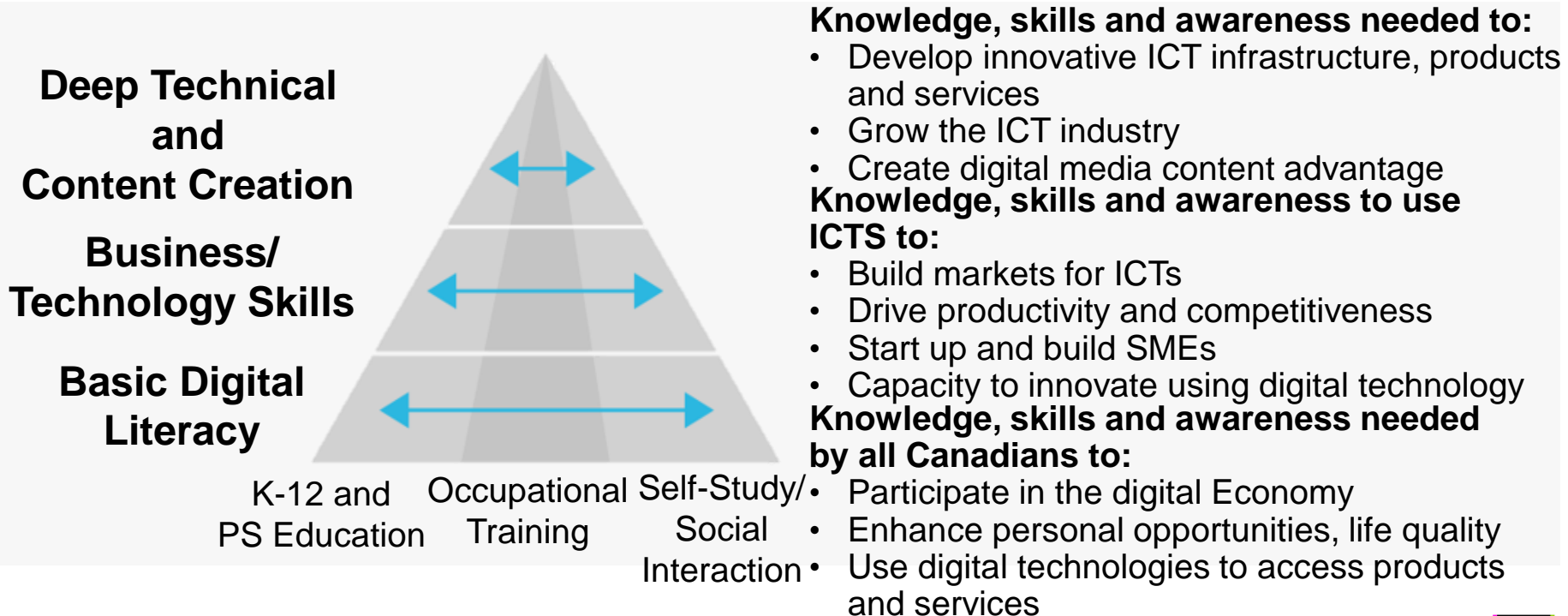
# STEM is necessary but insufficient



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



# Alternative Pathways to Digital Skills



# 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



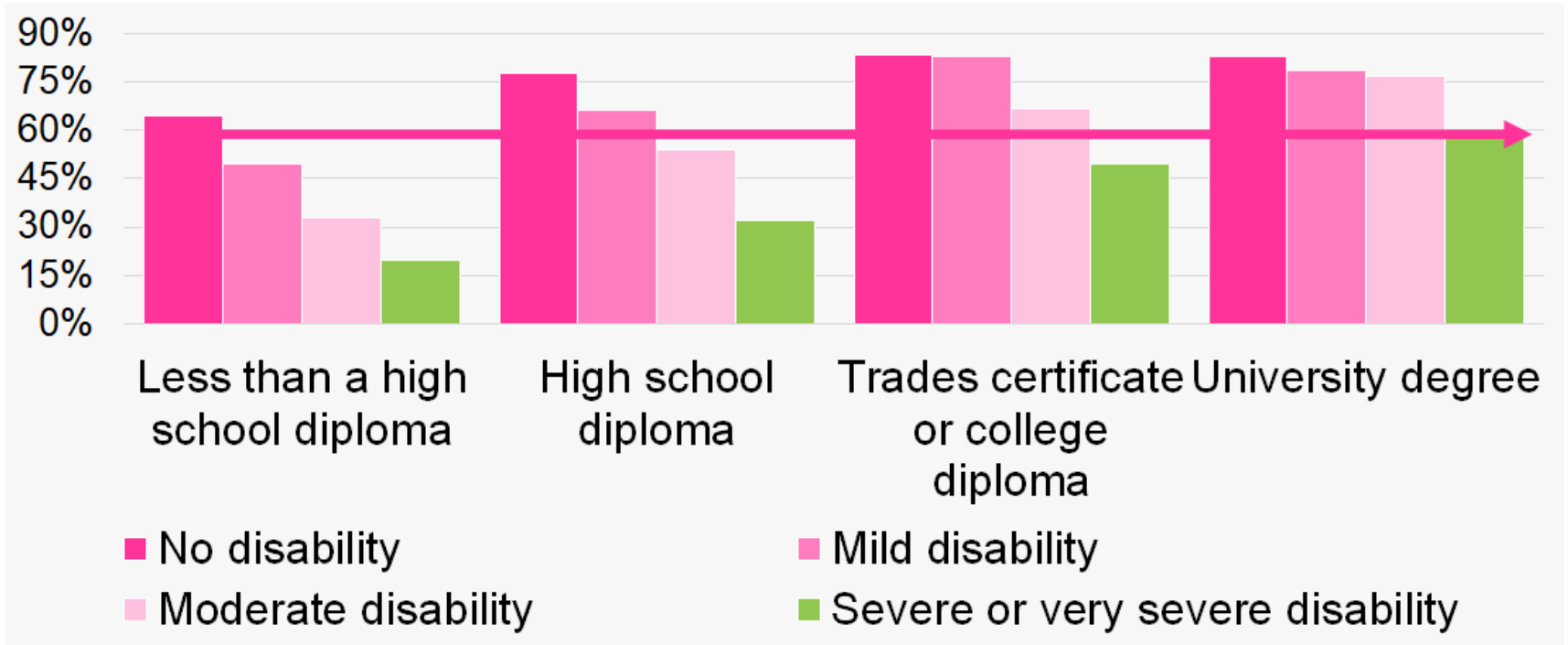
# Women are under-employed and under-paid

- **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



# THE WAY FORWARD



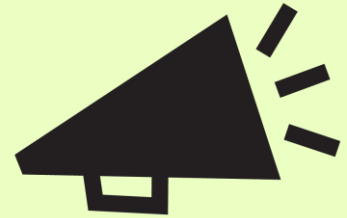
- Nuanced understanding of skills gaps and shortages in terms of regions, sectors, occupations, skills and tools
- Link investment in skills development to **innovation and growth**
- Increase pipeline for in demand occupational groups – engineering, computer science, skilled trades
- Understand and 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 socio-emotional 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



# 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



**Microsoft  
Excel**



**Adobe  
Creative  
Suite**



**Finance**



**Business &  
Marketing**



**Applied  
Research**



**Writing for  
an audience**



**Presentation and  
Networking skills**



**Personal Branding  
& Communication**



**Google  
Analytics**



**Search Engine  
Optimization**



**Coding**



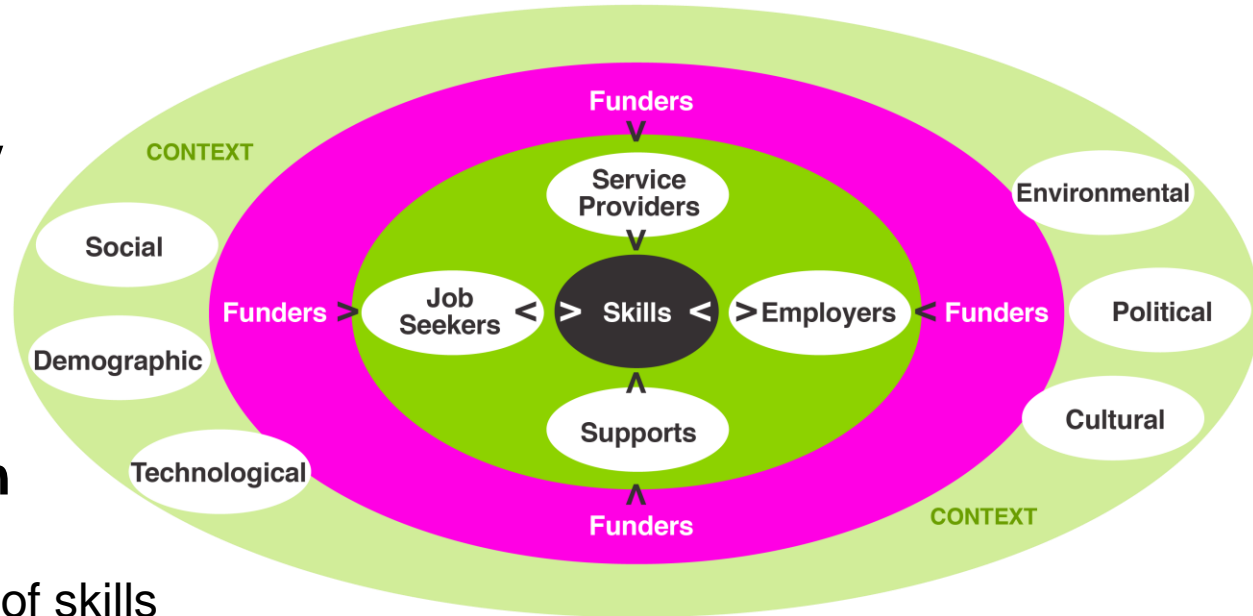
**Big Data Analytics**





# 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



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# Studying the Use of Research in Policy & Practice

Vivian Tseng

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*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

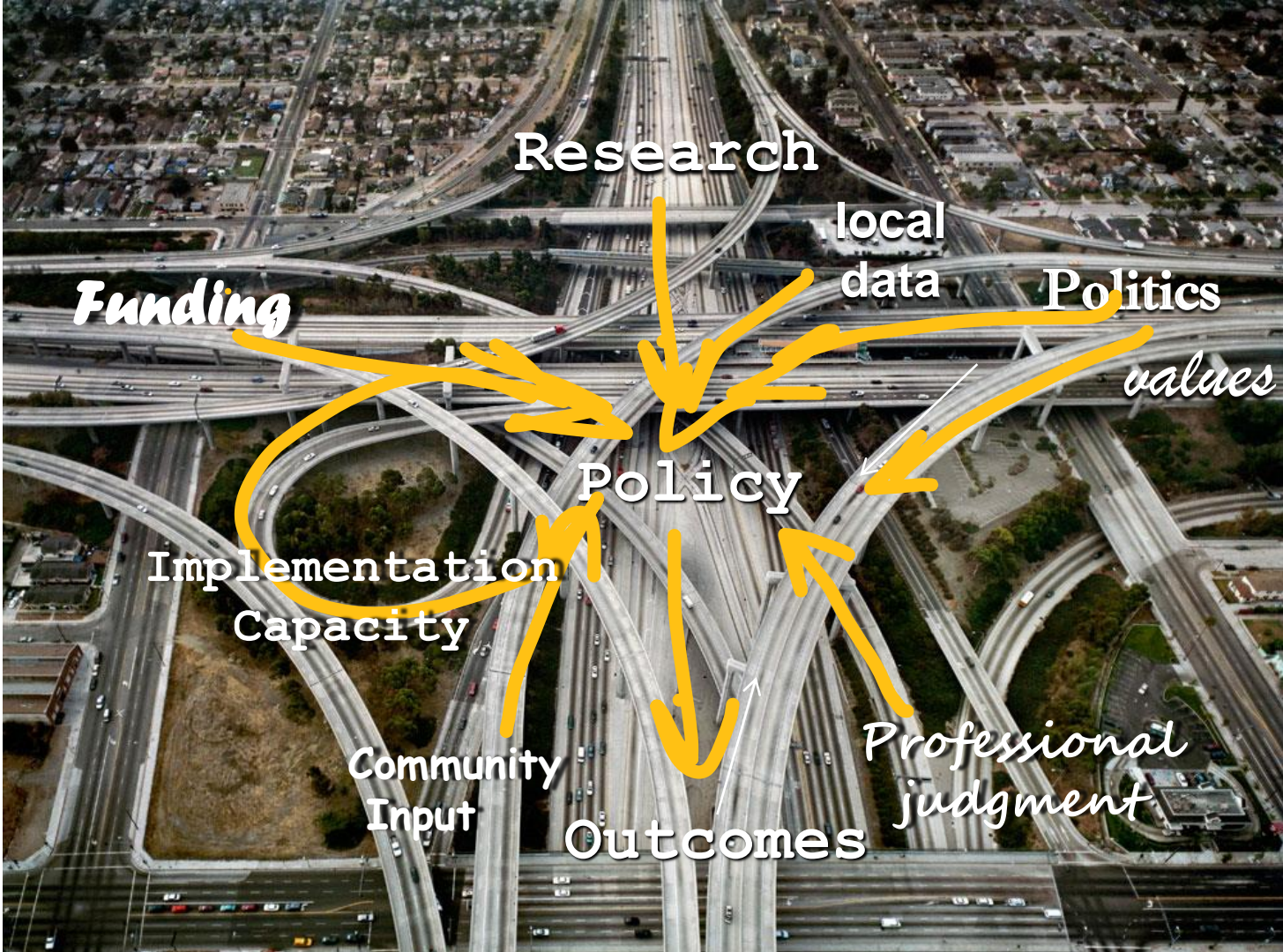
An aerial photograph of a rural landscape featuring a paved road and a railway track running parallel to each other through green fields. The image is overlaid with a process flow diagram consisting of four text labels and three white arrows pointing upwards from bottom to top. The labels are: 'Research' at the bottom, 'Identify What Works' in the middle, 'Implement What Works' above it, and 'Improve Outcomes' at the top. The background shows a clear blue sky and a small town in the distance.

Improve  
Outcomes

Implement  
What Works

Identify  
What Works

Research



Research

Funding

local data

Politics

*values*

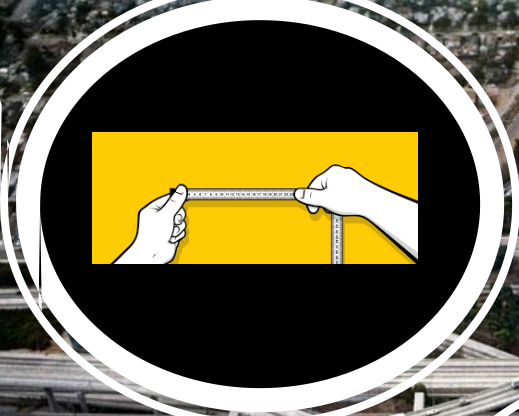
Policy

Implementation  
Capacity

Community  
Input

Professional  
judgment

Outcomes





# 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



@HumanomicsMap

# Thinking Through the Impact Lifecycle

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



AALBORG UNIVERSITET



# 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

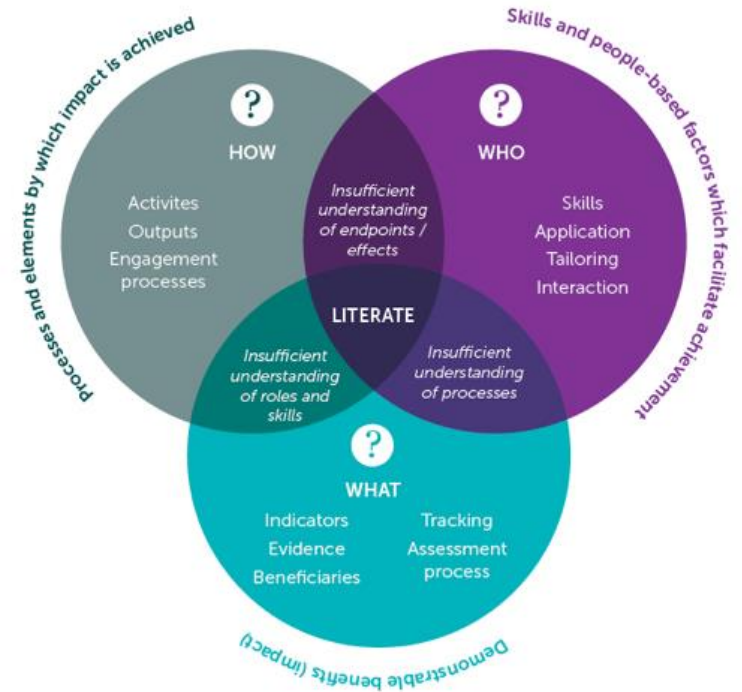
Good co-creation pays off in more than one way

Integrative knowledge environments include skills for translation, synthesis and implementation of research 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

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