Do We Need a New Discipline to Document and Transmit Problem-based Learnings?

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My answer

- Yes!
- Integration and Implementation Sciences (I2S)
- www.anu.edu.au/iisn
Overview

- Why do we need Integration and Implementation Sciences?
- What are the core concepts and methods?
- Issues for application and institutionalization
Why do we need Integration and Implementation Sciences?

- Boost contribution of university research
- No well-established institutional structures
- No core methodological underpinning
- Recurrent methodological challenges that are no-one’s mandate
Core concepts and methods...1

1. Compiling work of others through an ‘integration and implementation’ lens

2. Application in projects
Core concepts and methods...2

Primary areas:
- population health
- environment
- policing and security
- technological innovation

ARACY
LWA
GECAFS
(SDPS)
Core concepts and methods...3

Fresh thinking for intractable problems

Integrating disciplinary and practice (stakeholder) knowledge

Understanding and managing ignorance and uncertainty

Providing research support for decision making and practice change
Fresh thinking for intractable problems ...

Range of methods to promote creative thinking
Focus on Executive Sessions methodology
  • Harvard University
  • 17 completed since 1984
  • Around 30 innovative and influential participants
  • 2/3 practitioners, 1/3 researchers
  • Ideological diversity
  • 6 x 3 day meetings over 3 years
  • ‘Ripe’ topic
Fresh thinking for intractable problems ...

- America’s Juvenile Justice System 1984
- Policing 1985 – 1993
- State and Local Prosecutors 1987 – 1990
- Making the System Work for Poor Children 1988 – 1990
- Future of Philanthropy 1999 – 2002
- Domestic Preparedness 1999 – 2003
- American Indian Constitutional Reform 2001 – 2003
- Faith-based and Community Approaches to Urban Revitalization 2002 – 2003
Core concepts and methods

Fresh thinking for intractable problems

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Integrating disciplinary and practice knowledge ...

Systems approach

- View of the whole
- Systems principles and methods
Integrating disciplinary and practice knowledge ...

Scoping, problem framing and boundary setting

- Better methods

- Can't do everything:
  - Importance of knowing that what is included, excluded and marginalised
  - Importance of understanding, managing and communicating uncertainty better
Importance of collaboration = harnessing difference

- Integrating relevant differences
- Managing incidental differences
Integrating disciplinary and practice knowledge …4

Integration Framework:

1. For what and for whom?
2. Of what?
3. By whom?
4. How?
5. Context?
6. Impact?
For what and for whom?

What are the aims of the integration and who is intended to benefit?

Differentiate integration aims from project aims and big picture aims
Integration of what?

- Disciplines
- People Affected
- Influential People
Integration of what – more detail

Knowledge

Disciplines

Judgements

Interests

Geographical scales

Temporal scales

Epistemologies

Power

Cultures

Values

People Affected

Influential People

Knowledge

Disciplines

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People Affected

Influential People
Integration by whom?

Whole group

Subgroup

Individual

Integration ‘specialist’
How?

No existing toolkit

Models

Dialogue

Common metric

Product

‘Vision’
Toolkit especially for matching ‘of what’ and ‘how’

**Disciplines**
- Epistemologies
- Cultures
- Values

- Temporal scales
- Geographical scales
- Power

People Affected
- Influential People

LWA
- Models
- Dialogue
- Common metric
- Product
- ‘Vision’
Dialogue tools

- Principled negotiation
- Nominal group technique
- Deplhi method
- Soft systems
- Strategic assumption surfacing and testing
- Open space technology
- Appreciative enquiry
- Citizens’ juries
- Search conference
Context?

Relevant political context, history of the problem, institutions involved, etc

Anything that might affect the integration approach
Impact?

Success of the integration processes?

Did the integration contribute to the project success?
Core concepts and methods

Fresh thinking for intractable problems

Integrating disciplinary and practice (stakeholder) knowledge

Understanding and managing ignorance and uncertainty

Providing research support for decision making and practice change
Understanding is comparatively unsophisticated

Problems include multiple types of ignorance and uncertainty

Decisions require strong appreciation of ignorance and uncertainty

Nobody’s mandate to pull different approaches together
Ignorance and uncertainty...2

STATISTICS - probability theory

Music – essential for creativity

History – moral dimension

Intelligence – gaps or overload

Art – certainty and uncertainty are a continuum, not opposites

Complexity - irreducible

Futures – unknown unknowns

Religion – desirable vs fundamentalism
### Ignorance and uncertainty

<table>
<thead>
<tr>
<th>Known knowns</th>
<th>Known unknowns</th>
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<tbody>
<tr>
<td>Unknown knowns (tacit knowledge)</td>
<td>Unknown unknowns</td>
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Ignorance and uncertainty...4

Typologies eg Smithson, 1989

- Ignorance
  - Error
  - Irrelevance
    - Untopicality
    - Taboo
    - Undecidability
  - Incompleteness
    - Uncertainty
    - Absence
      - Vagueness
      - Probability
      - Ambiguity
        - Fuzziness
        - Nonspecificity
Core concepts and methods

- Fresh thinking for intractable problems
- Integrating disciplinary and practice (stakeholder) knowledge
- Understanding and managing ignorance and uncertainty
- Providing research support for decision making and practice change
Decision support

1. understanding decision making processes, eg government policy making or business commercial decision making

2. appreciating the attributes of influential research

3. delineating different types of researcher-decision maker engagement – ranging from one-way communication to the co-production of knowledge – and their strengths and weaknesses

4. understanding how institutions can influence which research is taken up by decision makers

5. developing more effective ways to evaluate research support for decision making
Practice Change

Effective change – what can we learn from

- Advertising
- Organisational change
- Agricultural extension
- Health promotion
- Counselling
- Diffusion of innovation
- Social entrepreneurship
- Community organising
Overview

- Why do we need Integration and Implementation Sciences?
- What are the core concepts and methods?
- Issues for application and institutionalization
- Academic orphans
- Cross-cutting discipline
Application and institutionalization ...

- Graduate Courses
- Courses for Research Managers
- Integration and Implementation Sciences Network
  www.anu.edu.au/iisn

Join us!
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Post-amble

- “Multidisciplinarity is the way of the future”
- How to operationalize research that crosses disciplines
- 1991-1997 The ACT Heroin Trial
- Systematize process