i2S News

November/December 2020, #53

Australian National University

WELCOME

Welcome to the November/December i2S News, our last for 2020. It has not been the year any of us expected and we hope you have been able to navigate it successfully.

For us, it has been a big year for the i2Insights blog (http://i2Insights.org). The blog celebrated its 5th birthday in November and in recent months there have been record numbers of views and viewers. In May, we gave the blog a new 'look,' particularly focused on the home page. In November, we added an advanced search function. We've been active all year in re-indexing every blog post and we are well over half-way.

Both the blog and the i2S website (http://i2s.anu.edu.au) provide information about research integration and implementation resources, with i2S News providing a bi-monthly update of new resources added to each of them.

The blog welcomes contributions from the wide international community of researchers developing concepts and methods for systems thinking, inter- and trans- disciplinarity, action research, team science, co-creation, research implementation and much more.

In contrast, the resources on the i2S website are compiled by us. While there is a small amount of overlap between the resources on the blog and the website, the website tends to feature resources that are less amenable to being captured in a blog post.

Between them, the blog and website aim to keep the research community working on complex societal and environmental problems abreast of new tools, with the website also providing information about useful journals, professional associations and networks, and the latest conference news. Contributions and feedback are welcome.

Wishing you all the best for 2021,
Gabriele Bammer and Peter Deane

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FEATURED TOOLS

Collaboration planning

Purpose: To lay the groundwork for effective team functioning by assessing a range of factors that influence the likelihood and degree of collaborative success.

Description: Ten key influences on the likelihood and degree of collaborative success have been identified by reviewing the literature. Team members are encouraged to develop a collaboration plan that addresses these influences on teamwork (the following is taken, often verbatim, from Hall *et al*, 2019):
1. Rationale for team approach and team composition
2. Collaboration readiness
3. Technological readiness
4. Team functioning
5. Communication and coordination
6. Leadership, management and administration
7. Conflict prevention and management
8. Training
9. Quality improvement activities
10. Budget/resource allocation

1. Rationale for team approach and team composition
The collaboration plan should:
- justify why the particular scientific questions and goals require a team approach
- describe how the team configuration meets the proposed research objectives (*eg.*, how each team member contributes uniquely)
- discuss considerations for assembling the team (*eg.*, what expertise is needed, history of collaboration)

- specify key stakeholders and relevant contributions of team members across the research phases.

2. Collaboration readiness

The collaboration plan should provide evidence for collaborative readiness associated with:
- intrapersonal skills and characteristics of individual members
- interpersonal skills and capacity of the team as a unit
- institutions and organisations involved, especially
  - alignment of rewards and recognition for team-based research
  - availability and planned use of shared resources
  - strategic planning.

3. Technological readiness

The collaboration plan should:
- document the availability and planned use of technological resources to facilitate:
  - data sharing and collaborative data analysis
  - communication
  - coordination
- provide evidence for institutional support related to:
  - interoperability of proposed technology systems
  - policies
  - physical space designed for collaboration.

4. Team functioning

The collaboration plan should document strategies for supporting team functioning, including:
- general strategies
  - identify gaps in team functioning processes and competencies
- behavioural processes
  - develop shared vision, mission and goals; facilitating dialogue
- cognitive processes
  - externalize group cognition throughout the collaboration
  - create shared mental models of the team structure and collaborative scientific project
  - foster team-level understanding of each team member's areas of expertise, roles on the team, and contributions to science
  - encourage perspective taking
- affective/motivational processes
  - engage in on-going iterative reflection
  - clarify roles and expectations
  - foster team cohesion
  - provide a psychologically safe environment
  - engender confidence in team's ability to attain shared goals
  - bolster trust among team members
- fostering interdisciplinarity
  - develop critical awareness of the strengths and weaknesses of contributing disciplines

- o create shared understanding of key disciplinary-specific terms and develop shared team vocabulary
- o foster cross-disciplinary orientation
- o share knowledge
- o integrate and co-produce knowledge
- o integrate knowledge across stakeholders (*eg.*, non-academic and academic)
- o embrace opportunities for serendipity.

5. Communication and coordination
The collaboration plan should provide plans and strategies for:
- communication across the team and among team members
- co-ordination of day-to-day operations and the on-going achievement of scholarly benchmarks.

6. Leadership, management and administration
The collaboration plan should provide descriptions of:
- leadership approaches to address the components in the collaboration plan; include the ways all team members will serve to lead (*eg.*, within roles/expertise) and how the team will work/lead together to achieve mission/vision/goals
- management approaches to address the components in the collaboration plan; include ways all team members will contribute to and support overall management
- strategies for recruitment, hiring, and daily administration of the team.

7. Conflict prevention and management
The collaboration plan should describe strategies for:
- preventing conflicts
- managing conflicts.

8. Training
The collaboration plan should provide description of, and implementation strategies for:
- training plans for the team and team members at the start of the collaboration and throughout, including strategies to identify gaps in competencies and skills relevant to the team
- training approaches to enhance the relevant competencies and skills of the team
- type of training format and how it incorporates the needed training content and proposed approaches.

9. Quality improvement activities
The collaboration plan should:
- describe the processes and metrics that will be put in place to ensure continuous quality improvement.

10. Budget/resource allocation
The collaboration plan should:
- allocate funds in the budget for activities that facilitate the success of the team, as identified in components 1-9.

- **Reference**:
  - o Hall, K. L., Vogel, A. L. and Crowston, K. (2019). Comprehensive collaboration plans: Practical considerations spanning across individual collaborators to institutional supports. In: Hall, K. L., Vogel, A. L. and Croyle, R. T. (eds.). *Strategies for team science success: Handbook of evidence-based principles for cross-disciplinary science and practical lessons learned from health researchers.* Springer: New York, United States of America: 587-612. (Online) (Open access): https://link.springer.com/chapter/10.1007/978-3-030-20992-6_45

Location of this resource on the i2S website:
https://i2s.anu.edu.au/resources/collaboration-planning

Additional tools can be found at: http://i2s.anu.edu.au/resources/tools

FEATURED VIDEO

System dynamics: qualitative maps

Purpose: To demonstrate how a qualitative system dynamics map is constructed, along with its value in identifying leverage points, as well as to develop principles for qualitative mapping.

Description: This 28-minute video by George Richardson describes his perspective on how a systems thinker and modeler approaches the problem of extensive evil. He builds a qualitative map and derives leverage points both for an evil regime and resistance to it.

In the second half of the presentation he reflects on the methods used, demonstrating the advantages of stocks and flows diagrams over causal loop diagrams for conceptualization.

He argues for the development of "explicit, widely known principles for excellent qualitative work" in the system dynamics field and proposes the following:
- using mental simulations to reveal strengths and weaknesses
- using empirical and time series data
- deducing behaviours and using these to test the model
- finding thinking aids for analysis and understanding
- developing new diagramming and descriptive tools.

- **Reference**:
  - o "Why we need better qualitative system dynamics maps: the case of extensive evil" was a video presentation by George Richardson. Delivered at the online 2020 System Dynamics conference as "Can systems thinking be an antidote to extensive evil?" Video (28-minutes); online at YouTube: https://youtu.be/CMgmvRxY9Rc

Location of this resource on the i2S website:
https://i2s.anu.edu.au/resources/system-dynamics-qualitative-maps

LATEST i2INSIGHTS BLOG POSTS

The i2Insights blog (http://i2insights.org) has recently published the following posts:

Navigating paradoxical tensions through both/and thinking
By Faye Miller
https://i2insights.org/2020/11/17/navigating-paradoxes/

The "ABC's" of interdisciplinarity
By Stephen Fiore
https://i2insights.org/2020/11/10/interdisciplinary-collaboration-issues/

Effectively leading interdisciplinary and transdisciplinary research organisations
By Global Leaders of Interdisciplinary and Transdisciplinary Research Organisations
https://i2insights.org/2020/11/03/leading-research-organisations/

Systems transdisciplinarity as a metadiscipline
By Vladimir Mokiy
https://i2insights.org/2020/10/27/systems-transdisciplinarity-metadiscipline/

Interdisciplinarity and synergy in collaborations
By Loet Leydesdorff
https://i2insights.org/2020/10/20/interdisciplinarity-versus-synergy/

Integration: The IPO model
By Stephen Crowley and Graham Hubbs
https://i2insights.org/2020/10/13/ipo-model-of-integration/

FEATURED JOURNAL AND JOURNAL NEWS

Knowledge Management for Development Journal

The *Knowledge Management for Development Journal* (KM4D Journal) "focuses both on knowledge management in development and knowledge societies in developing countries. It includes diverse knowledge management approaches in development organizations, large and small, in the South and in the North, and aims to facilitate cross-fertilization between knowledge management and related fields."

Further, KM4D Journal "offers peer-reviewed practice-based cases, analysis and research concerning the role of knowledge in development processes, and provides a forum for debate and exchange of ideas among practitioners, policy makers, academics and activists world-wide."

"By challenging current assumptions, it seeks to stimulate new thinking and to shape future ways of working. The journal is strongly related to the KM4Dev community of practice but aims to promote KM knowledge and approaches in the wider professional development community. Wherever possible, [the journal links] up with existing kindred communities or networks."

"The KM4D Journal is produced by the KM4Dev-community (http://www.km4dev.org/) and appears three times a year."

Journal impact factor (2019): N/A

- **Website**:
  - https://www.km4djournal.org/index.php/km4dj

> **Location of this resource on the i2S website**:
> https://i2s.anu.edu.au/resources/knowledge-management-for-development-journal

Call for papers by Environment, Development and Sustainability journal for special issue on 'Transformative Learning for Urban Sustainability: Futures of Transdisciplinary Educational Models, Structures and Tools'

"The aim of this Special Issue is to explore to what extent and how inter- and trans-disciplinary research, methods, tools and practices of education and transformative learning can contribute to address the future developmental and societal challenges in the realm of urban sustainability transitions. Contributions to this Special Issue may address any of the following topics:

- Exercises for 'thinking outside the box' involving students, business, NGOs and citizens at various educational levels (local, national or global learning communities, online learning communities) to bear fruitful largely in the present, question dominant axioms and assumptions and deal largely with complex, interconnected problems.
- Novel interdisciplinary and transdisciplinary methods and tools introducing the concept of transformative learning in foresight and co-design scenarios.
- Discussions of what kind of inter/trans-disciplinary educational tools and approaches can support and improve sustainability in the realm of urban transitions.
- Analyses of the post-COVID19 educational needs in the anticipation and the management of sustainability issues such as the ruling of global educational in a remote mode, in context-based and future-oriented perspectives."

- **For more detail see**:
  - https://www.springer.com/journal/10668/updates/18519950
    - Submission deadline is 31st March 2021

> **Additional journal information can be found at**: http://i2s.anu.edu.au/resources/journals

FEATURED PROFESSIONAL ASSOCIATION

Academy of Transdisciplinary Learning and Advanced Studies (The ATLAS)

The Academy of Transdisciplinary Learning and Advanced Studies (The ATLAS) seeks "to develop new transdisciplinary research frameworks and strategies with a strong focus on joint efforts by researchers from diverse disciplines to contribute to the co-design of a global sustainable future." In order to support this goal, The ATLAS aims:

- "To take leadership in developing the fundamentals of the transdiscipline;
- To provide leadership in the development of new models of learning and innovative teaching environments to complement transdisciplinary curricula;
- To foster global perspectives on education, research and training activities;
- To provide a forum for improving the links between science, technology, and the arts by fostering research and educational collaborations among the nations;
- Enlighten the world with hope for green engineering and science;
- To inspire global peace and;
- To promote global information exchange through innovative publishing."

It is not a membership organisation. It is a "non-profit organization providing services to students around the world." A variety of educational resources are provided by The ATLAS including a journal, books and learning modules. They also support an educational research institute: the ATLAS-R&B TD Research Institute (http://www.rb-tdinstitute.org/).

The ATLAS was founded in 2000.

- **Website**:
  - o http://www.theatlas.org/index.php

Location of this resource on the i2S website:
https://i2s.anu.edu.au/resources/academy-of-transdisciplinary-learning-and-advanced-studies

Additional professional associations and networks can be found at:
http://i2s.anu.edu.au/resources/associations_networks

FEATURED CONFERENCES

12th Annual International Science of Team Science Conference: Science of Team Science and the Human Condition

This conference "aims to advance our understanding of collaborative initiatives that address multidimensional complex societal problems" and to "rethink how science of team science research and practice may serve as a foundation for positive change and justice."

Submissions can cover any pertinent topic relevant to the science of team science (SciTS) but also befitting the theme of the SciTS 2021: *Science of Team Science and the Human Condition*. There is a focus on three particular topic areas. "As a point of convergence between science and practice, the conference will provide a platform to investigate contributions that team science research can make to addressing urgent contemporary challenges." The conference "will highlight the interface of the science of team science with challenges such as:

1. Responding to megadisasters (e.g., the COVID pandemic; hurricanes and fires),
2. Curtailing systemic racism and the need to create and implement anti-racist policies and practices, including technologies, and

3. Grappling with challenges in large growing metropolitan regions, such as equitable economic growth, affordable housing, education, and healthcare, food scarcity, infrastructure systems (including IT systems), and the impacts of climate change."

The conference will be fully online with a wide variety of ways to interact, including individual pre-recorded splash talks, interactive and participatory sessions, collaborative panels, SIG panels, workshops, an early career colloquium and a graduate student colloquium.

The conference audience is broad, including "team science academics, leaders and members of cross-disciplinary teams, institutional leaders and administrators, and funding agencies" from across the globe.

The conference is being held virtually, hosted by Virginia Tech, Blacksburg, Virginia, United States of America, on 7-11 June 2021.

- **For further details see**:
  - https://www.inscits.org/2021-scits-conference
  - Call for abstracts open until 28 February 2021:
    - https://www.inscits.org/cfa2021

2021 International Transdisciplinarity Conference (ITD): Creating Spaces and Cultivating Mindsets for Learning and Experimentation

The ITD conference will provide "a platform for engagement, discussion, and action that links transdisciplinary research (TD), (un)learning, and practice". "The goal is to advance TD concepts and methodologies, as well as strengthen their potential for addressing societal needs by connecting lecturers, researchers, practitioners, and students. This forum will cover the following themes:

- **Integrative TD**: To advance TD concepts and methodologies, how can we increase capacity to integrate expertise from multiple fields of knowledge including humanities and arts across disciplines, interdisciplinary fields, and occupational professions? How can imagination help us to build new/other futures?
- **TD on-the-ground**: To connect diverse communities and practices, what are processes and practices being carried out in the name of TD, how can TD facilitate inclusive and equitable research and how can we better understand the impact and effectiveness of these processes and practices? How can we improve based on these practices?
- **Global and virtual TD**: How can we expand the potential contributions of TD in both real and virtual environments? What are the opportunities and challenges in applying TD in diverse geographical, social, political, and cultural contexts?
- **TD learning for transformation**: How can we reimagine education, and how can TD concepts contribute to personal transformation and development? What is the role of collective learning in TD research and practice? How can we navigate potential roles, between neutrality, activism, emancipation?
- **Institutionalizing and funding TD**: What greater role can TD play in institutes of higher education and in society at large? What are means to enhance the role of TD in decision making processes? How can TD career paths be developed in existing institutions? What are appropriate funding schemes, program designs and management structures for TD research?"

"As a virtual forum, the ITD Conference 2021 will bring together individuals, communities, and institutions from across the globe."

"The conference is co-organized by the Transdisciplinarity Lab (TdLab), ETH Zurich in Switzerland and the Network for Transdisciplinary Research (td-net) of the Swiss Academies of Arts and Sciences."

The conference will be held virtually on 13-17 September 2021.

- **For further details see**:
    - http://transdisciplinarity.ch/td-net/Aktuell/ITD-2021.html
        - Call for contributions opens January 2021; submissions possible until end of March 2021 (see above URL for how to obtain updates)

Additional conference information can be found at:
http://i2s.anu.edu.au/resources/conferences

ABOUT i2S NEWS

The aim of this newsletter is to provide regular (bi-monthly) updates about new resources added to the Integration and Implementation Sciences website (http://i2s.anu.edu.au/resources) and the Integration and Implementation Insights blog (http://i2Insights.org). It also provides occasional conference and other news items. These resources are useful for researchers interested in Integration and Implementation Sciences (i2S), which underpins the investigation and tackling of complex real world problems, by:
- Synthesizing knowledge from different disciplines and stakeholders,
- Understanding and managing diverse unknowns, and
- Providing integrated research support for policy and practice change.

In general, each issue features tools (concepts and methods), either a useful compilation or one or more examples of note. We also provide information about journals, professional associations & networks and conferences where researchers can learn from others, report their findings and interact with like-minded peers.

i2S News is archived at: http://i2s.anu.edu.au/what-i2s/i2s-publications/i2s-news.

Useful links:
- i2S website: http://i2s.anu.edu.au
- i2Insights blog: http://i2Insights.org
- i2S on YouTube: https://www.youtube.com/user/i2sTalks
- LinkedIn group "Global Network for Research Integration and Implementation": https://www.linkedin.com/groups/4888295/

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