Integrating Interdisciplinarity with the Toolbox Dialogue Initiative

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Agenda

1. Executive summary
2. The Toolbox and professional development
3. The Toolbox dialogue method
4. The Toolbox Dialogue Initiative
Executive Summary

The Toolbox Dialogue Initiative (TDI) and its method

• TDI is a facilitation and research group that has spent 20 years working to enhance communicative and collaborative capacity in crossdisciplinary research teams, typically through professional development experiences

• We conduct dialogue-based workshops designed to enhance mutual understanding among collaborators about their research perspectives

• These workshops are built around a philosophical approach to structured dialogue known as the “Toolbox dialogue method”
The Toolbox and Professional Development
Distinguish professional development from education

- Think of *education* as a systematic program of learning designed to instill a breadth of knowledge and a range of skills and sensitivities.
- Think of *professional development* as relatively brief, intense experiences that focus on skill development within specific professions.
Interdisciplinary Development

Enhancing interdisciplinary professionals with the Toolbox

- **Individual effect:** increase what we call *interdisciplinary consciousness*,¹ which is associated with reflexivity and perspective taking and is marked by “cultivated sensitivities” that facilitate the production of interdisciplinary outputs from disciplinary inputs²

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Interdisciplinary Development

Enhancing interdisciplinary professionals with the Toolbox

- Team effect: increase integrative capacity understood as a characteristic of teams that enables them to “build effective communication practices, a shared identity, and a shared conceptualization of a problem space”\(^3\)

The Toolbox Dialogue Method
One Challenge Facing Interdisciplinary Teams

Collaborators from different cultures (e.g., disciplines, organizations) can struggle to communicate because they understand their common problem differently\(^4\)

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The Root of the Challenge

The Problem of Unacknowledged Differences

You are different from one another, but you don’t necessarily know how, and we tend to assume we’re more alike than we are.


The Root of the Challenge

A related difficulty: The "Captain Obvious" Problem

• It would help to know each other’s core research beliefs and values, but these may seem obvious to us

• We are disincentivized from articulating things that seem obvious to us – no one wants to be Captain Obvious!
The TDI Response

IF

unacknowledged differences in language, belief and value compromise collaborative, interdisciplinary research

THEN

acknowledging differences and coordinating them can enhance communication and project integration
The Toolbox Dialogue Method

Structured dialogue in a workshop setting, with two parts:

1. Dialogue structured to make salient unacknowledged differences – specifically, core research beliefs and values

2. Co-creation activities leverage what is learned in dialogue
The Toolbox Dialogue Method

Structured dialogue

- Map the conceptual landscape of a project with dialogue prompts
- Encourage stance taking by using a rating response scale
- Collect prompts into a survey-style instrument divided into modules
- Discuss for 60-90 minutes
The Toolbox Workshop

Co-creation activity

• The dialogue should sensitize participants to differences in their research worldviews

• The co-creation activity captures these insights in a deliverable that can be used going forward (e.g., concept map, collaboration agreement, project glossary)
TDI Process: Facilitation

- Information Gathering
- Instrument Development
- Dialogue/Co-creation
- Report
- Reflection

WORKSHOP
Philosophical Background

Grounded in philosophical concepts and methods

- *Concepts* from epistemology and philosophy of science identify core dimensions of scientific practice

- *Methods* abstract away from project details to common ground shared as scientists
Philosophical Background

Grounded in philosophical concepts and methods

• The philosophical framing supports reflexivity and perspective taking, which are correlated with effective teamwork
Individual learning objectives

Reflect on one’s own norms, values, and core beliefs as they pertain to one’s collaborative project.

Recognize that things one takes to be obvious aren’t – they may even be points of disagreement among collaborators.
Learning Objectives

Team learning objectives

Identify and consider previously unacknowledged differences

Learn to take collaborators’ perspectives to appreciate how the common project looks to them

Enhance mutual understanding to leverage differences in expertise and improve communication
The Toolbox Dialogue Initiative
TDI: Who We Are

TDI is a consulting and research group based TDI Center at Michigan State University.

We facilitate collaborative capacity with partners around the world and investigate the practice of collaborative, crossdisciplinary research.
A History of TDI

TDI Past to Present

- An idea that emerged from graduate students in an IGERT project at the University of Idaho in 2005
- Received NSF funding in 2008 to develop the method
- Moved to MSU in 2012; funded by NSF, NASA, and others
- A diverse community of researchers from different universities in the US

A History of TDI

TDI Center – Co-Founders and Associate Directors

Edgar Cardenas, Ph.D.  
Chet McLeskey, Ph.D.  
Marisa A. Rinkus, Ph.D.
Workshop Experience

550+ workshops
Many Partners
Founding Partners

• Accelerating Research through International Network-to-Network Collaborations (AccelNet)
• Convergence Accelerator
• Growing Convergence Research
• Global Centers

• Heliophysics DRIVE Science Centers
TDI Process: Research

Study cross-disciplinary process

Evaluate workshop effectiveness

Determine Toolbox impact
Evidence of Impact

How to talk to strangers: facilitating knowledge sharing within translational health teams with the Toolbox dialogue method

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Abstract

Translational behavioral medicine involves experts from different disciplines and professions working in teams to translate research evidence into practical interventions that can be disseminated to the general public in areas of importance and by the various ways in which it affects different communities. We describe a method—the Toolbox dialogue method—to address these challenges in terms of a structured dialogue among team members concerning their specific approaches to achieving health-related outcomes. The Toolbox dialogue method is designed to foster productive discussions among individuals who may have different perspectives on complex issues. We describe the use of a set of tools to facilitate these discussions, which can be applied to any team involved in translational health research.

Keywords

Teamwork, communication, knowledge sharing, collaborative problem solving.

Background

Addressing complex issues in translational medicine increasingly involves formation of interdisciplinary teams. For example, development of strategies for addressing cognitive, brain cell dysfunction due to age-related factors is an interdisciplinary effort. However, effective cross-disciplinary research requires motivation, interaction, logistical, temporal, and conceptual challenges. We describe a method—the Toolbox dialogue method—to foster productive discussions among team members who may have different perspectives on complex issues. We describe the use of a set of tools to facilitate these discussions, which can be applied to any team involved in translational health research.

The Toolbox dialogue method is designed to foster productive discussions among individuals who may have different perspectives on complex issues. The method involves the use of a set of tools to facilitate these discussions, which can be applied to any team involved in translational health research.

Results

The Toolbox dialogue method is designed to foster productive discussions among team members who may have different perspectives on complex issues. The method involves the use of a set of tools to facilitate these discussions, which can be applied to any team involved in translational health research.

Discussion

The Toolbox dialogue method is designed to foster productive discussions among team members who may have different perspectives on complex issues. The method involves the use of a set of tools to facilitate these discussions, which can be applied to any team involved in translational health research.

Conclusion

The Toolbox dialogue method is designed to foster productive discussions among team members who may have different perspectives on complex issues. The method involves the use of a set of tools to facilitate these discussions, which can be applied to any team involved in translational health research.

WANT TO

LEARN MORE?

tdi.msu.edu

COMMUNICATION & COLLABORATION

The Toolbox Dialogue Initiative (TDI) workshops are an interactive, dialogue-based group experience. Workshops are intended for cross-disciplinary teams and those seeking to form new collaborations to address complex research topics. A recent survey highlights how former participants feel about communication and collaboration.

WHAT DID LAST PARTICIPANTS SAY AFTER A WORKSHOP?

I am more convinced that research is about mutual understanding...

I have more confidence to talk about research and collaborate with researchers outside of my group...

This has helped me understand and communicate with researchers on collaborative projects...

I have since developed an interest in collaborative problem formulation...

GROWTH DURING...

THE DIALOGUE SESSION

Our conversation was an open exchange of thoughts and ideas

The protocols were effective communication aids

It helped build a sense of community among my group

It improved my attitude toward team communication

The CO-CREATIVE ACTIVITY

Improved collaboration in my group

Improved communication in my group

AND AFTER THE TOOLBOX

I feel more capable of working with individuals from different backgrounds

I am better able to identify the research questions that are important to other people

I now have a better idea about how to form teams across disciplinary backgrounds

21% 62% 14% 8%
Thank you!

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