



**Carnegie Foundation**  
for the Advancement of Teaching

# Theory of NIC Development

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# Session Overview

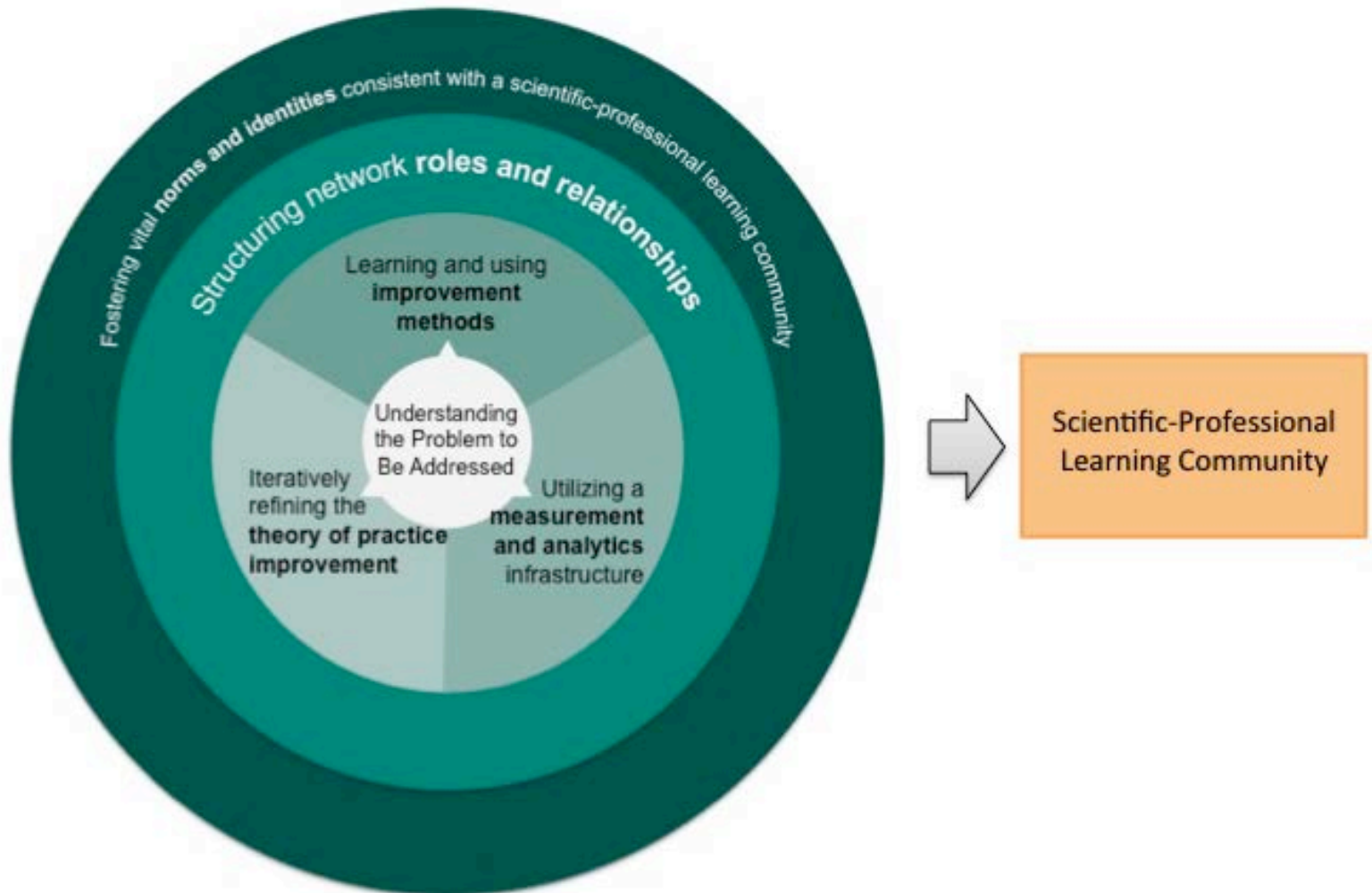
- What are the distinguishing features of a networked improvement community (NIC), and how do NICs change over time?
- In this session, NIC scholars and coaches will share Carnegie's current theory of NIC development.
- Methods and findings will be explored through a case study of the Better Math Teaching Network (BMTN), a NIC which aims to improve student engagement in algebra.
- You will also practice applying the framework to your own organization

# Session Agenda

- Presentation on NIC Development Framework
- Practice applying the NIC development framework to your own organization

# NIC DEVELOPMENT FRAMEWORK

# NIC Development Framework

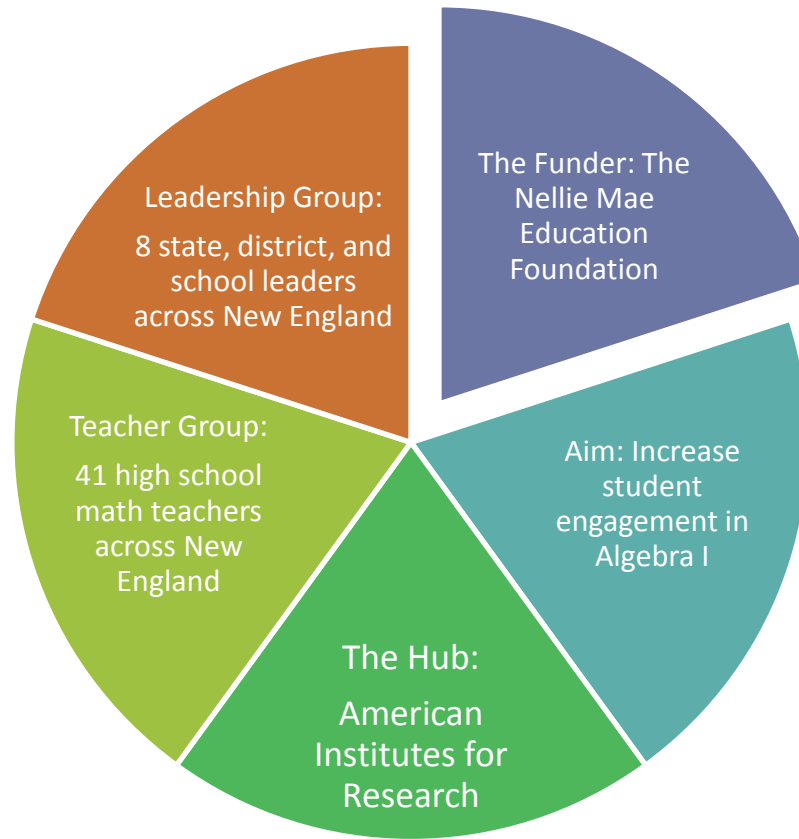


# Catalyzing the development of a scientific-professional learning community

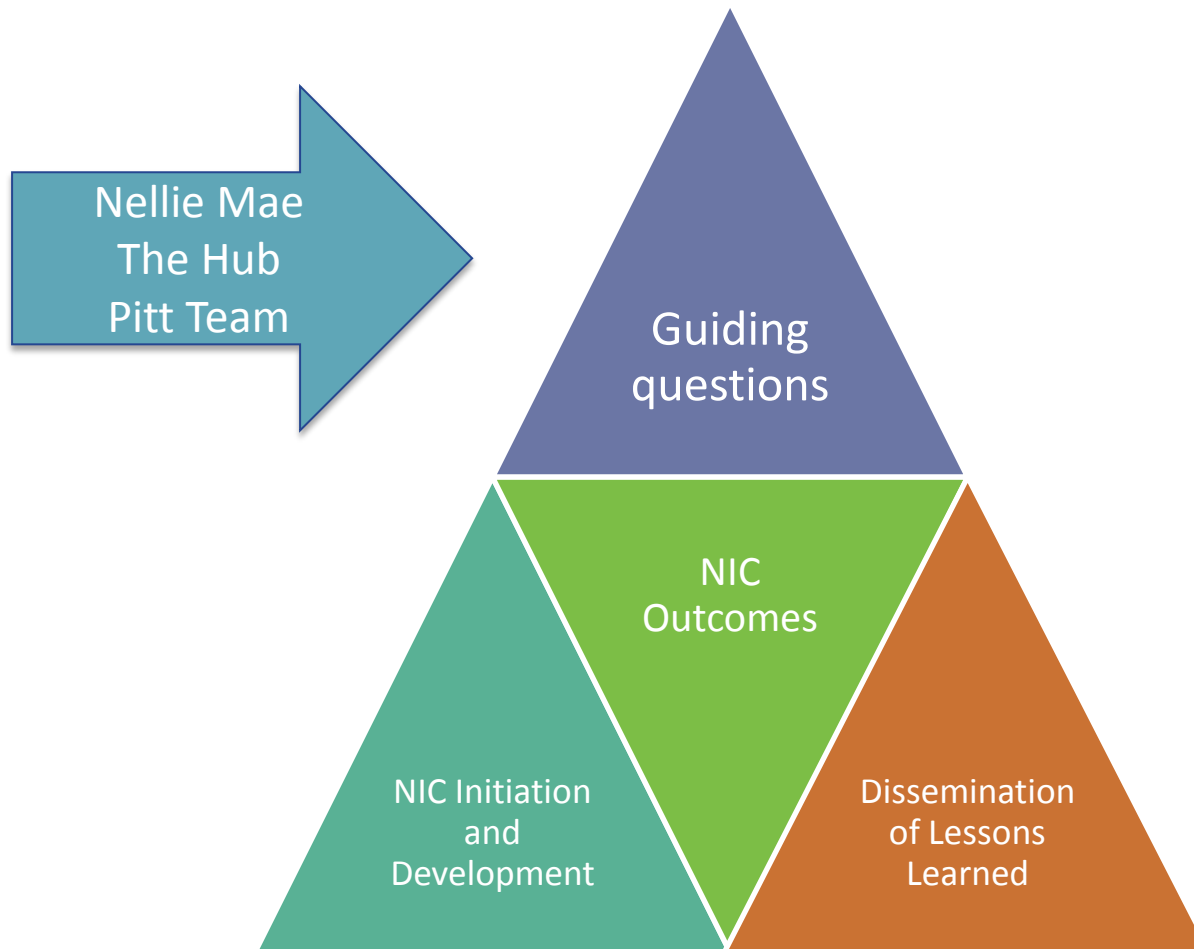
## **Scientific-Professional Learning Community**

- NICs are communities grounded by shared goals, norms, theories, and practices
- NICs are professional communities engaged in disciplinary inquiry
- NICs coordinate and accelerate learning through strategic knowledge management

# The Better Math Teaching Network

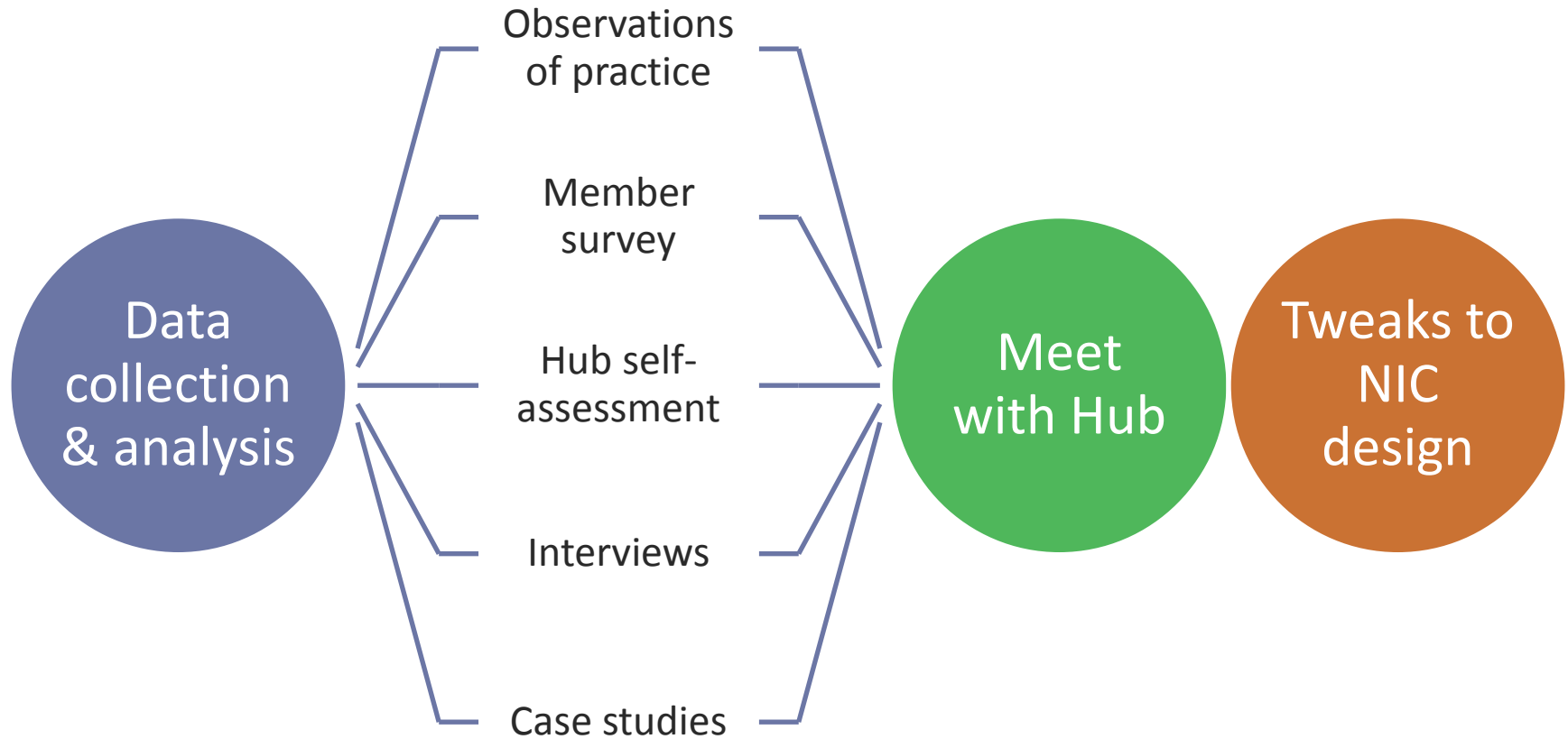


# The Pitt Developmental Evaluation

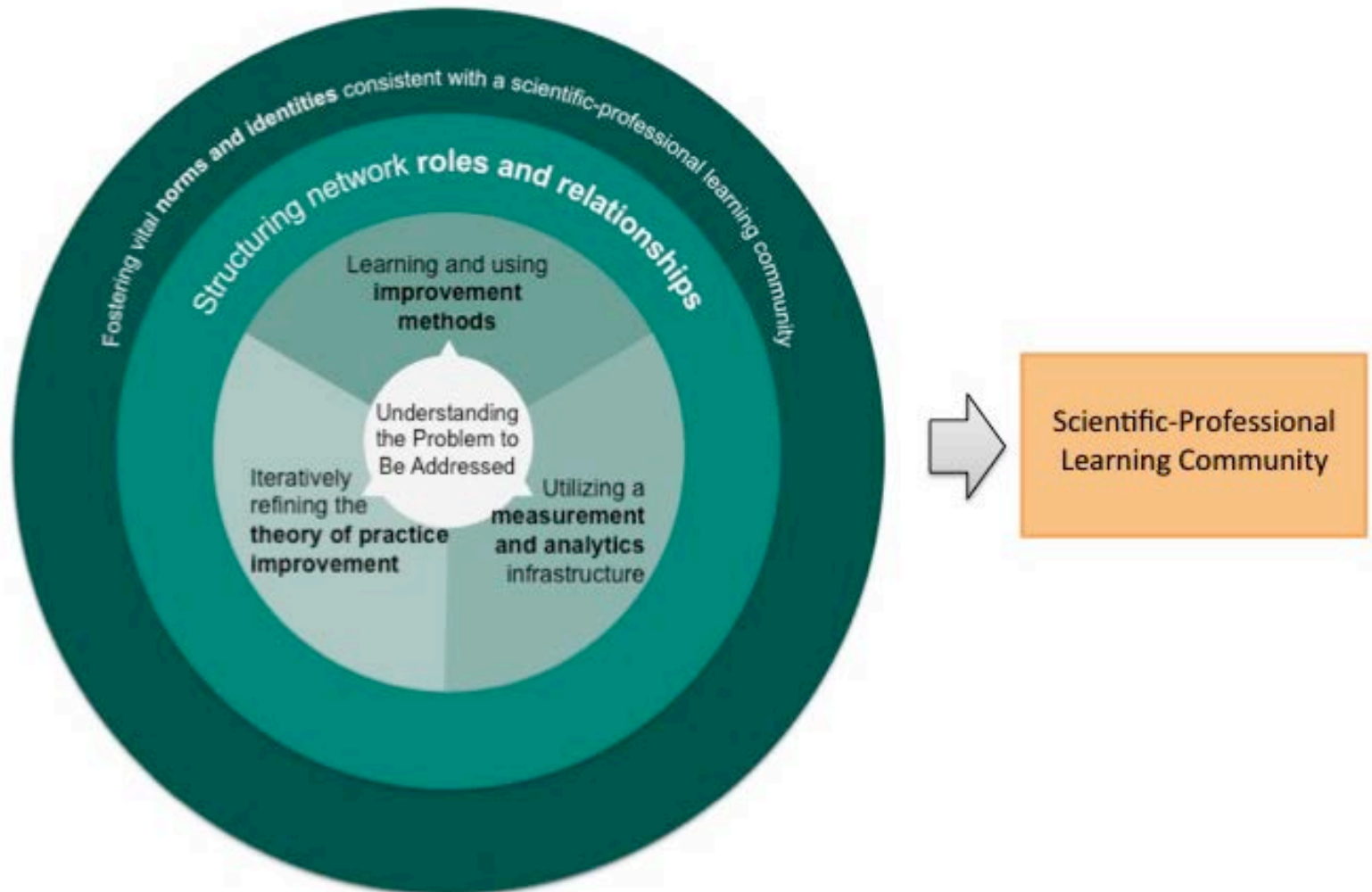




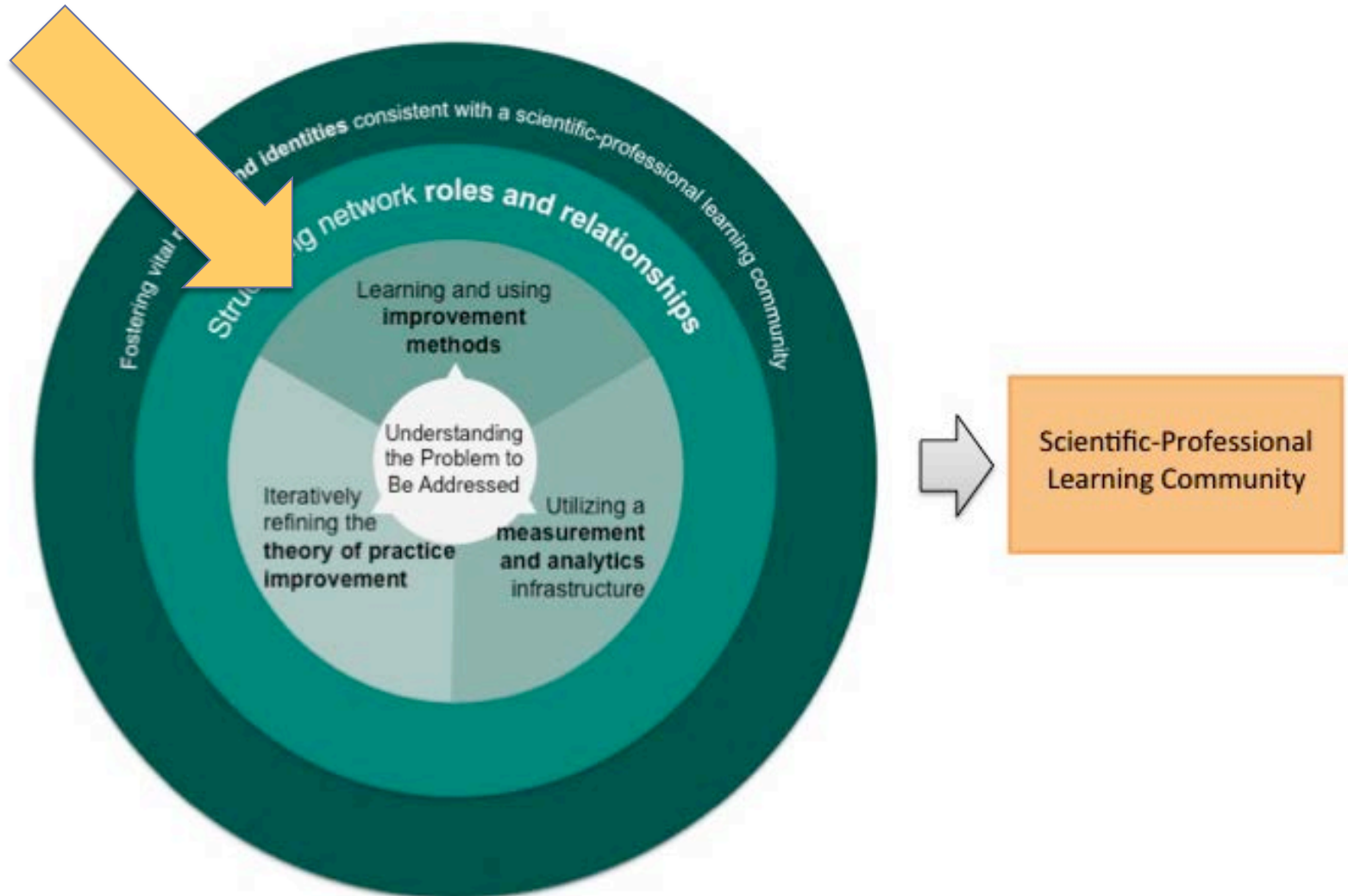
# Our Process



# Critical domains of effort for operating a NIC



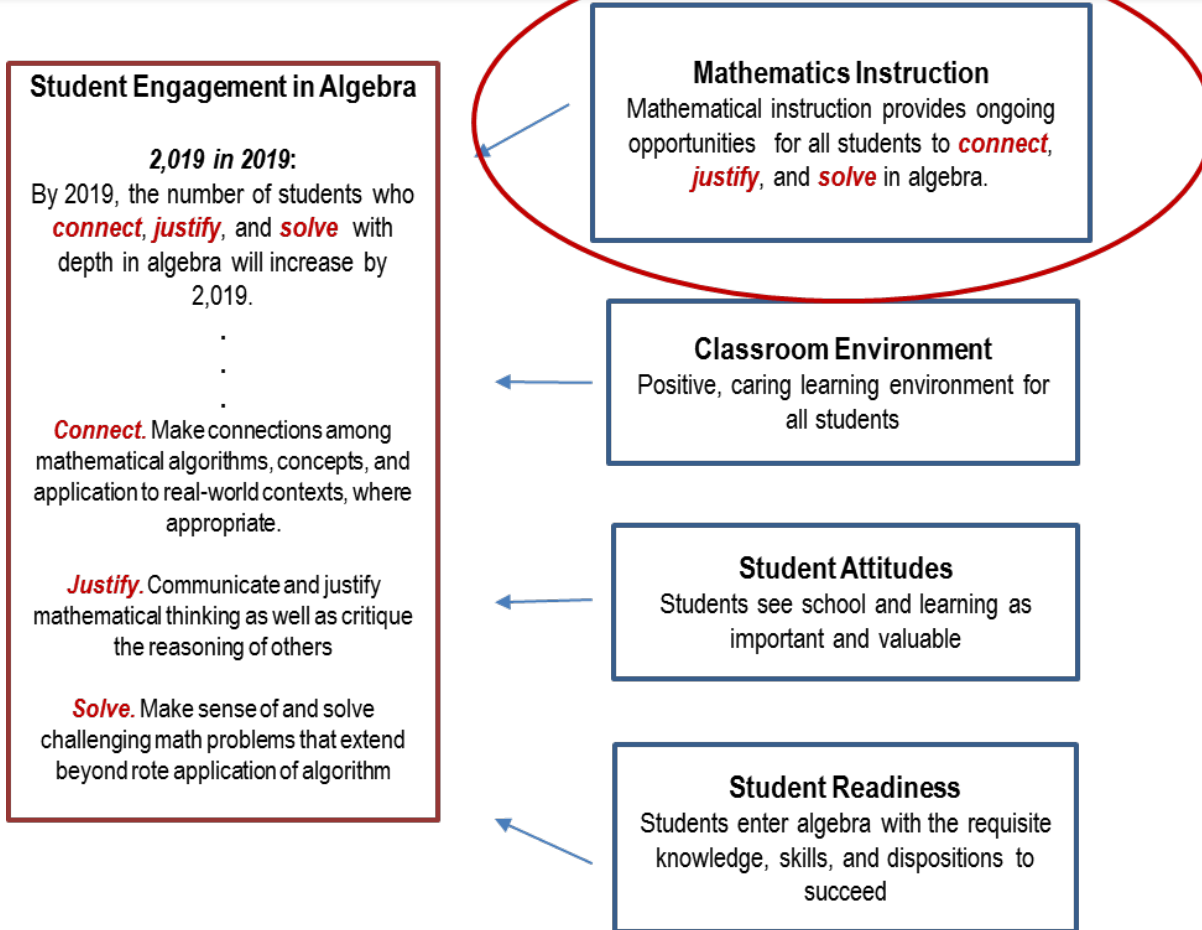
# The NIC Core Technology



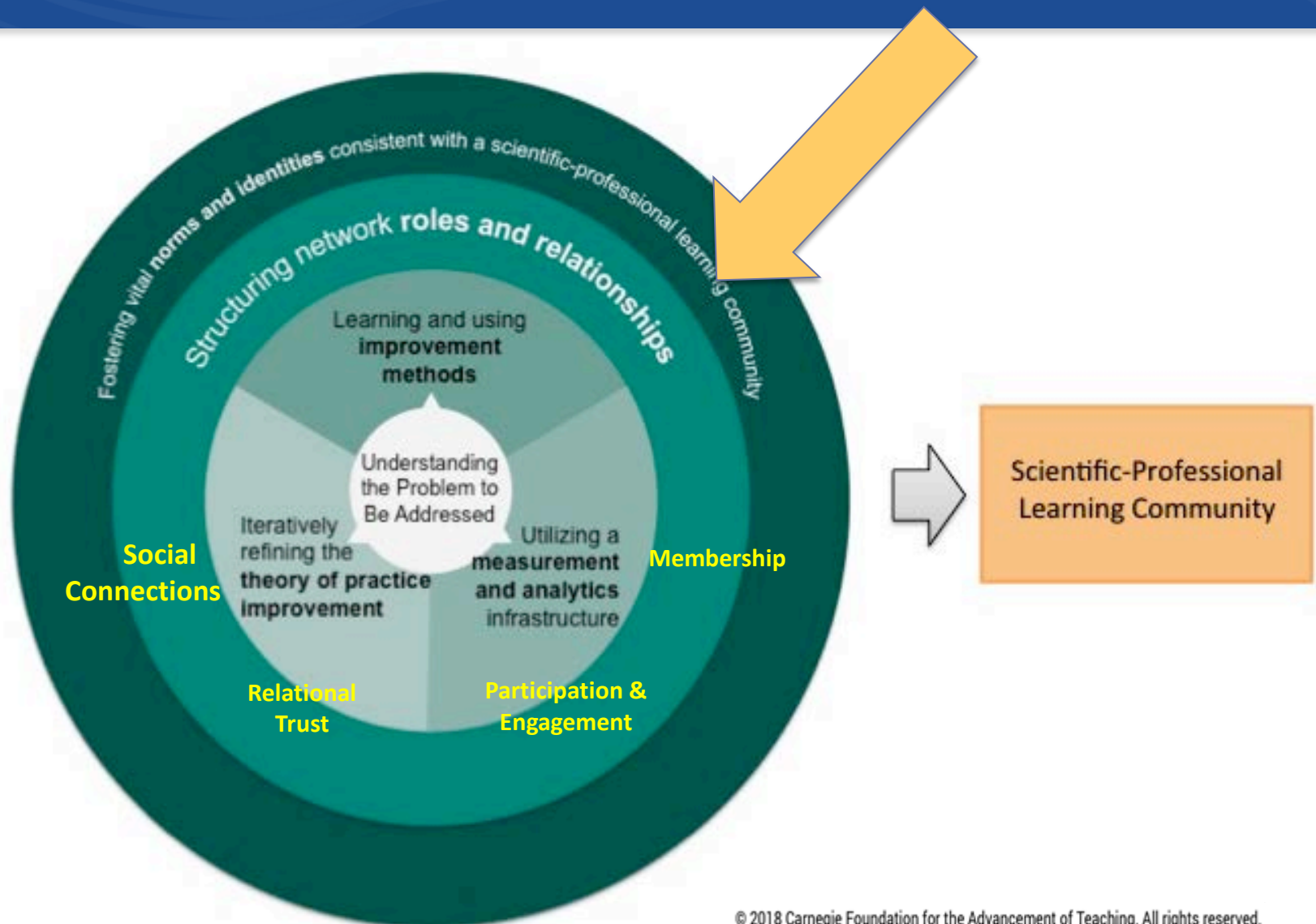
# The BMTN Driver Diagram

AIM Statement

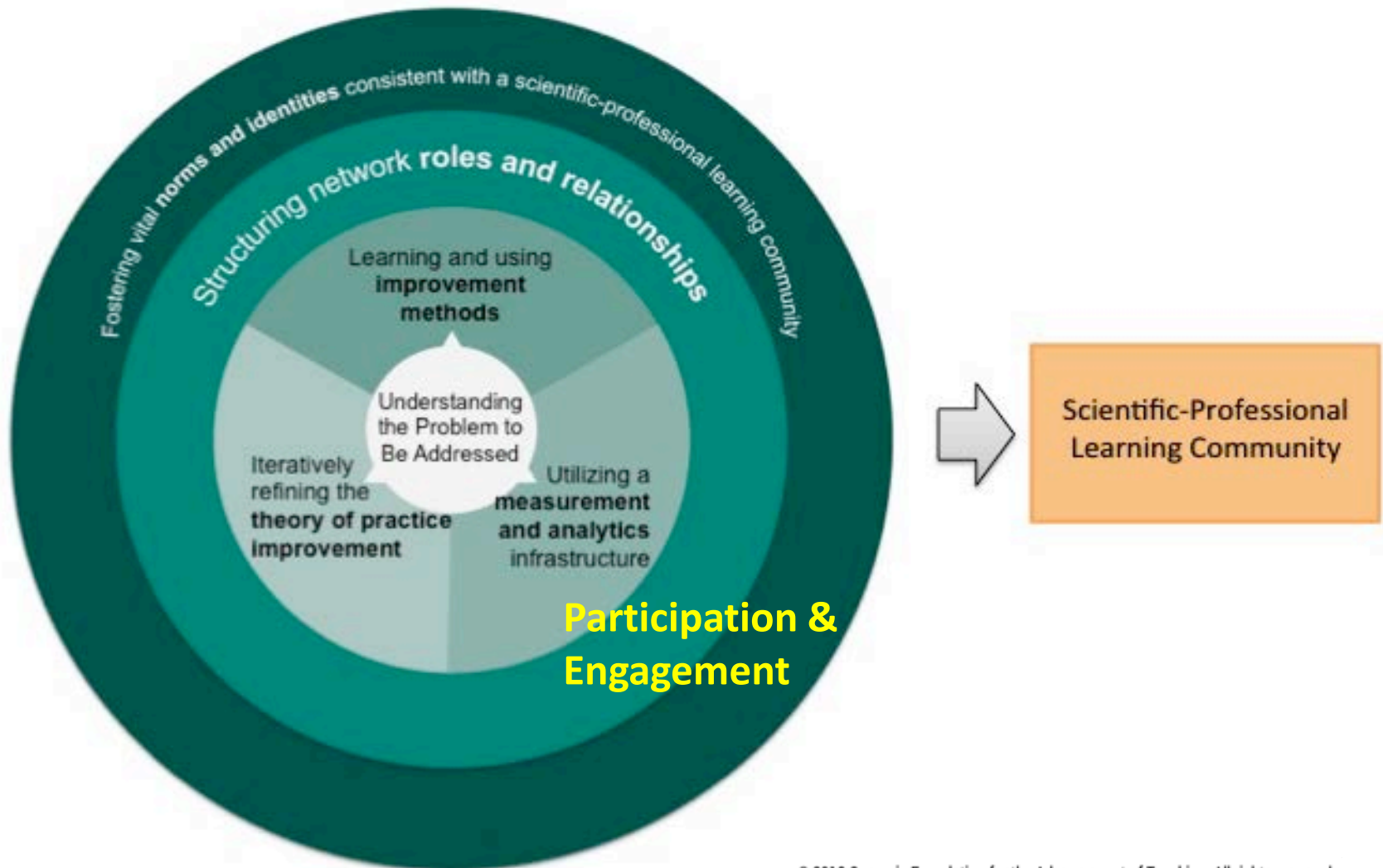
Primary Drivers (WHAT?)



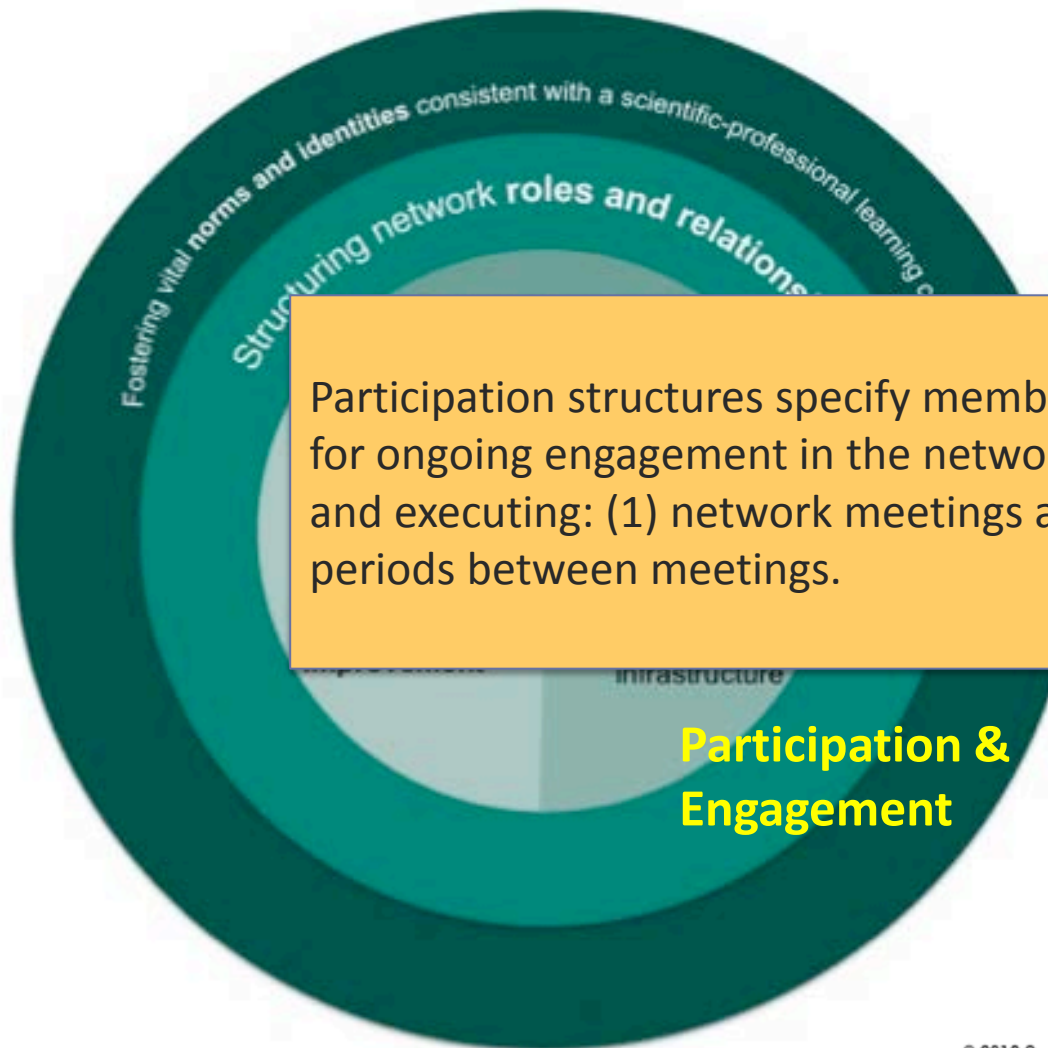
# Structuring network roles and relationships



# Structuring network roles and relationships: Participation and engagement



# Participation and engagement



Participation structures specify members' roles and clear expectations for ongoing engagement in the network. This likely includes planning and executing: (1) network meetings and (2) activity during action periods between meetings.

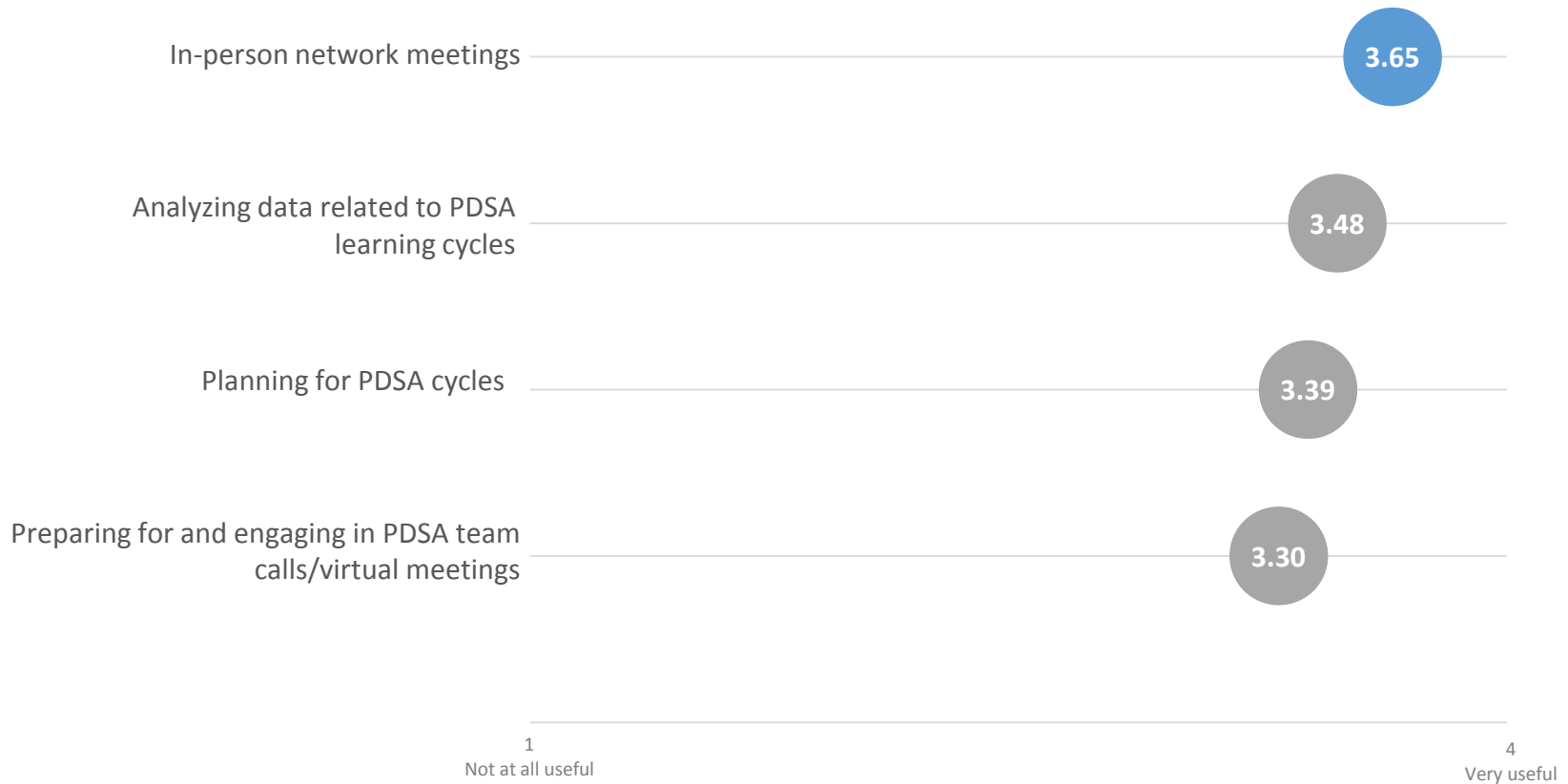
## Participation & Engagement

# Participation & engagement in BMTN



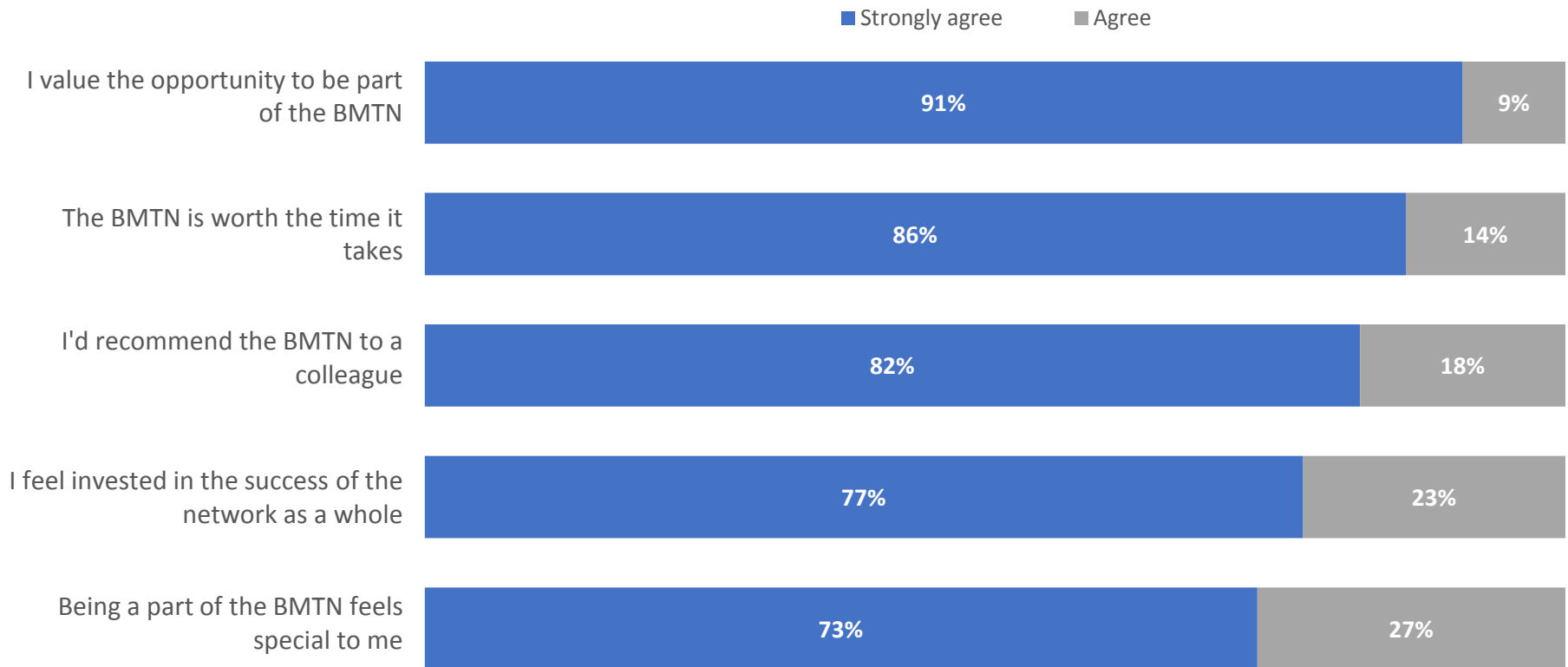


# Teachers find BMTN activities useful



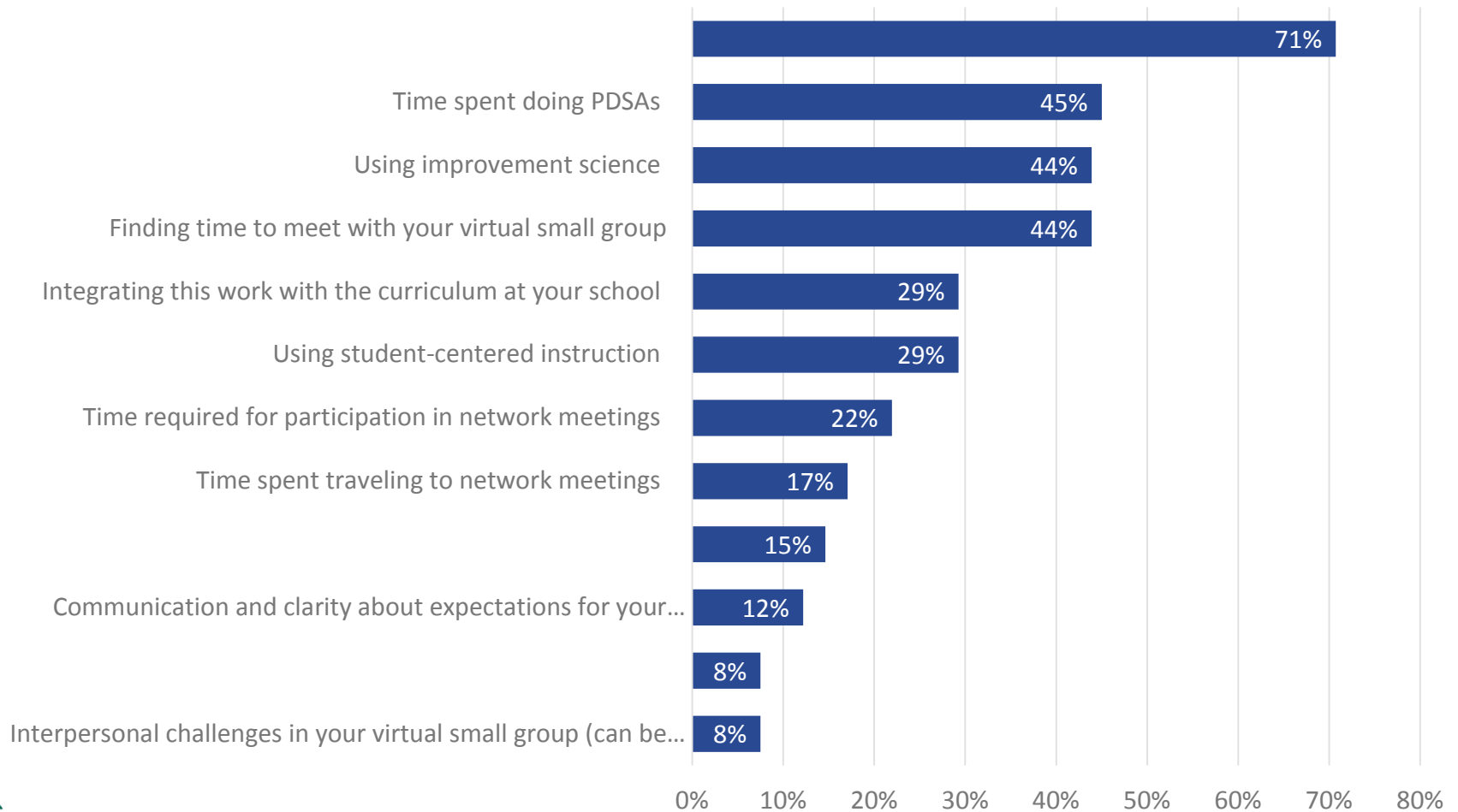
# Teachers value participation

The majority of teachers **strongly agree** there is value in participation in the network

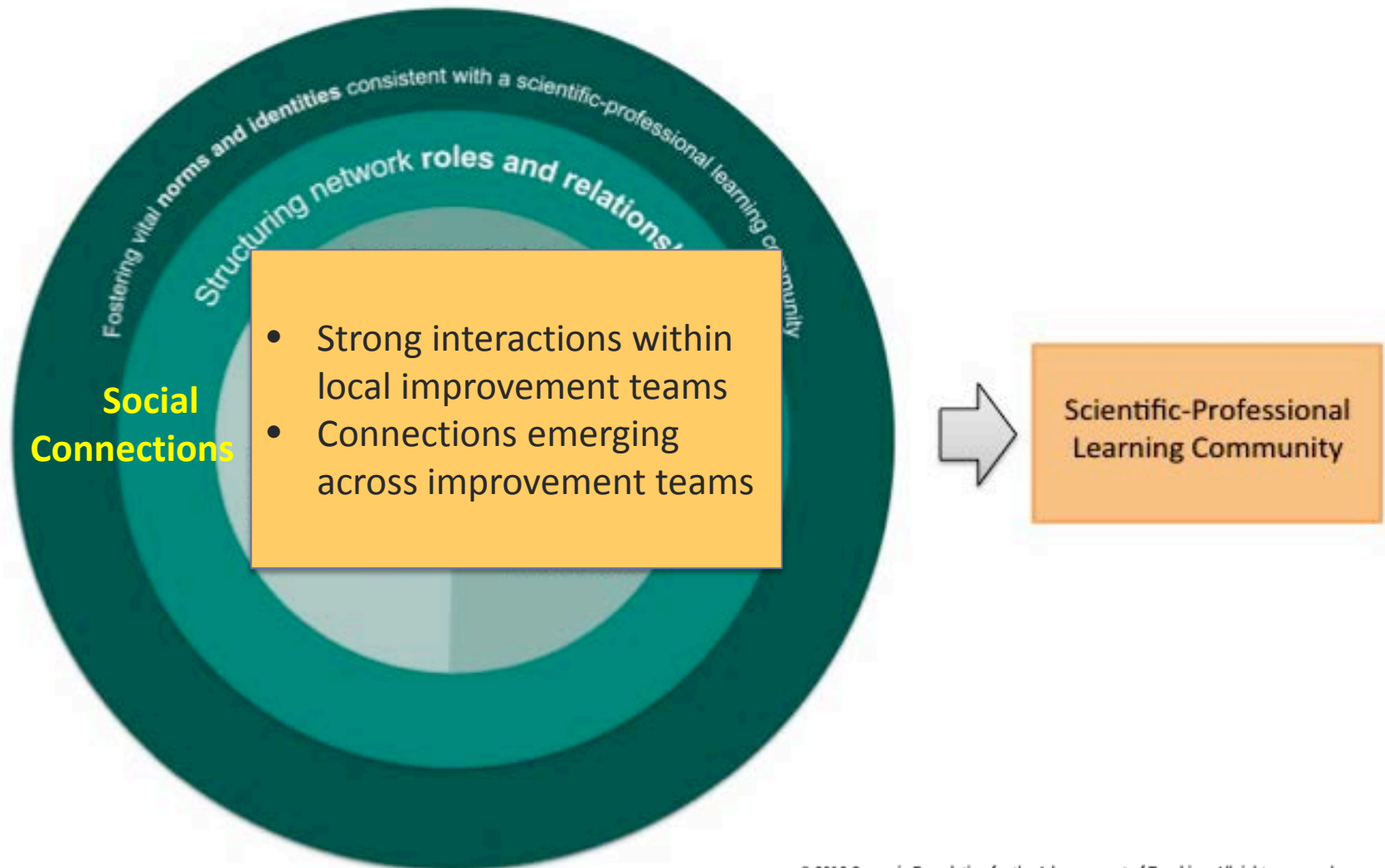


# Participation challenges

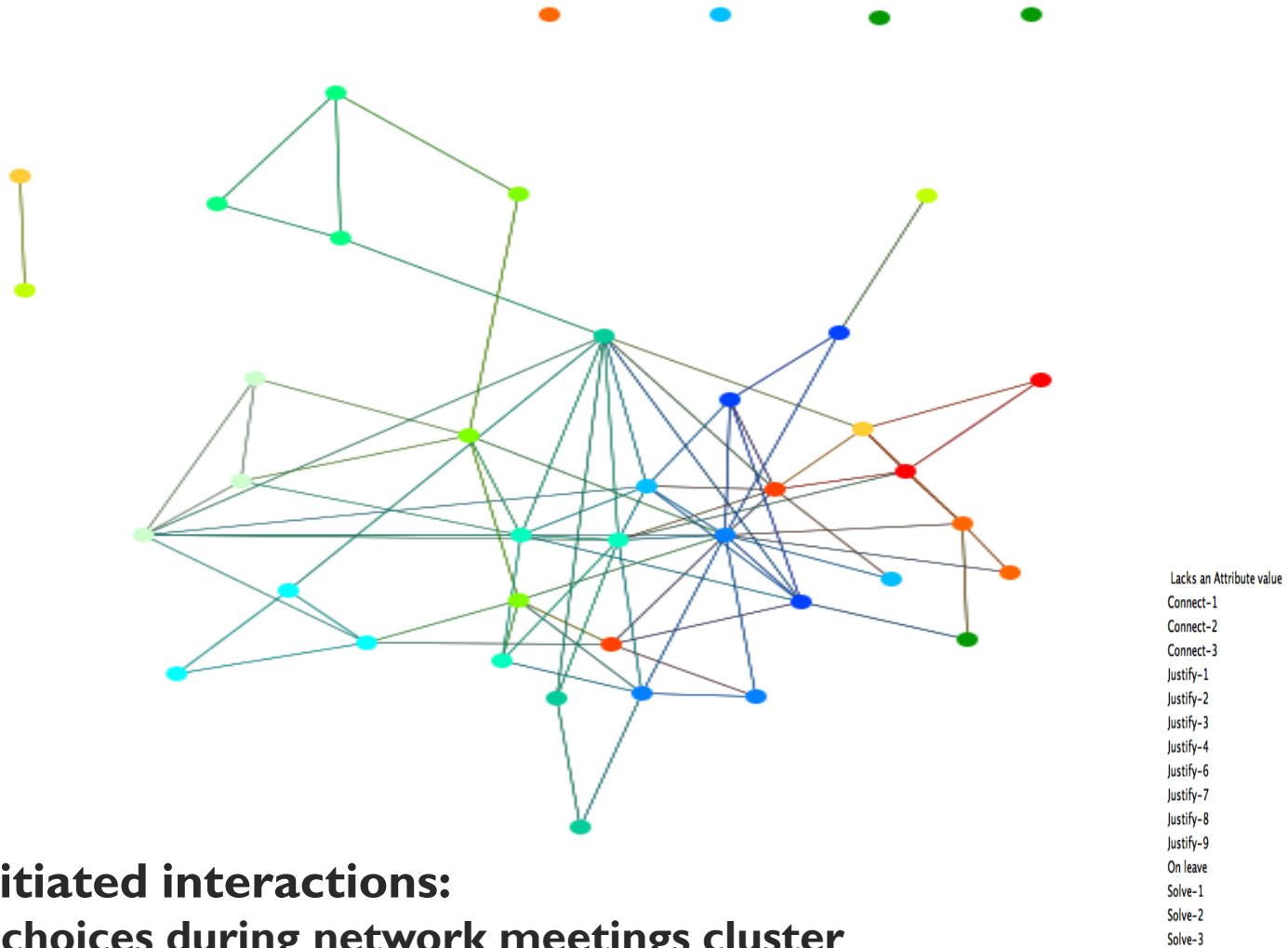
## Challenges (Survey)



# Structuring network roles and relationships: Social connections

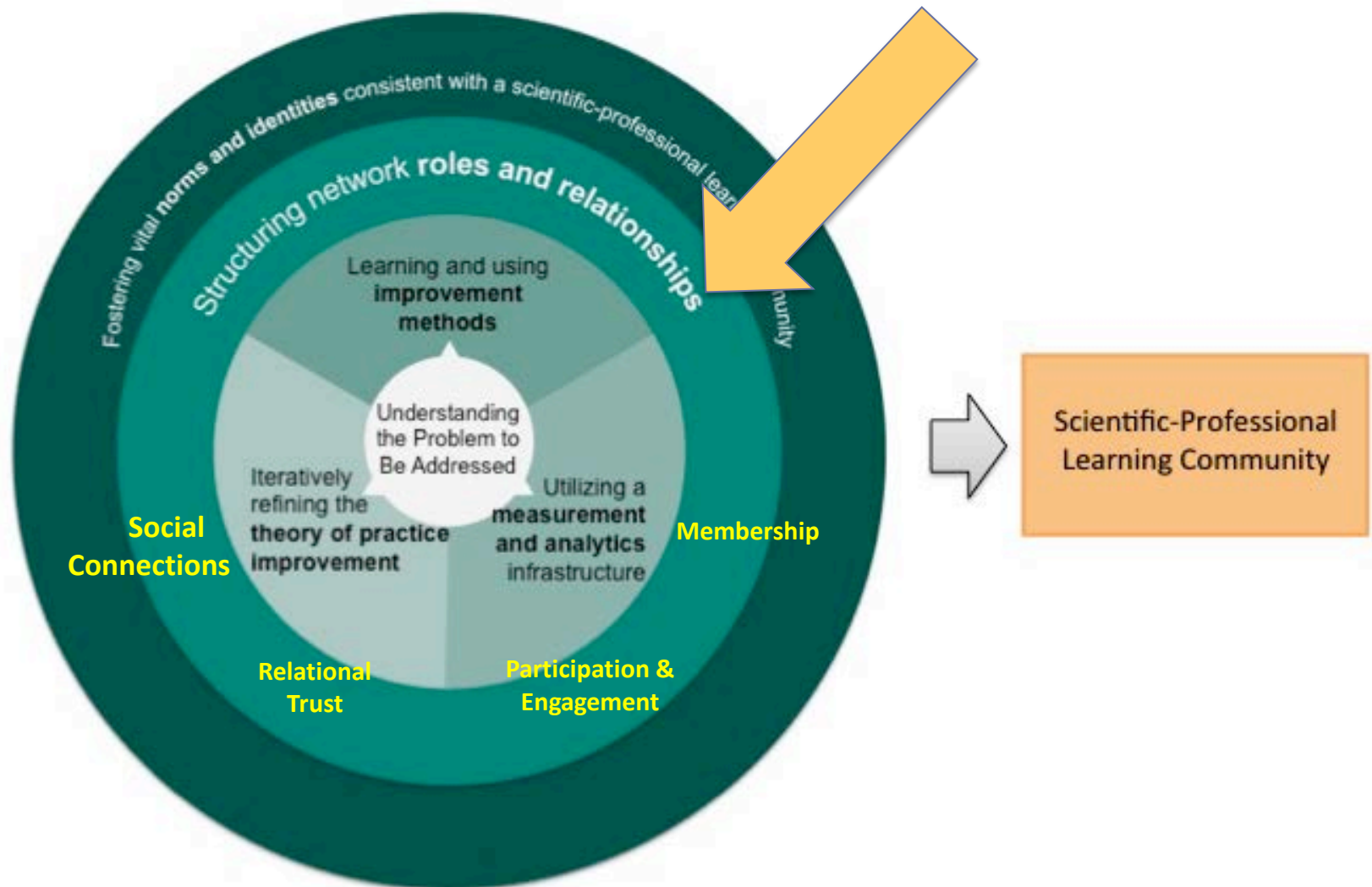


# Emerging network of connections in the BMTN

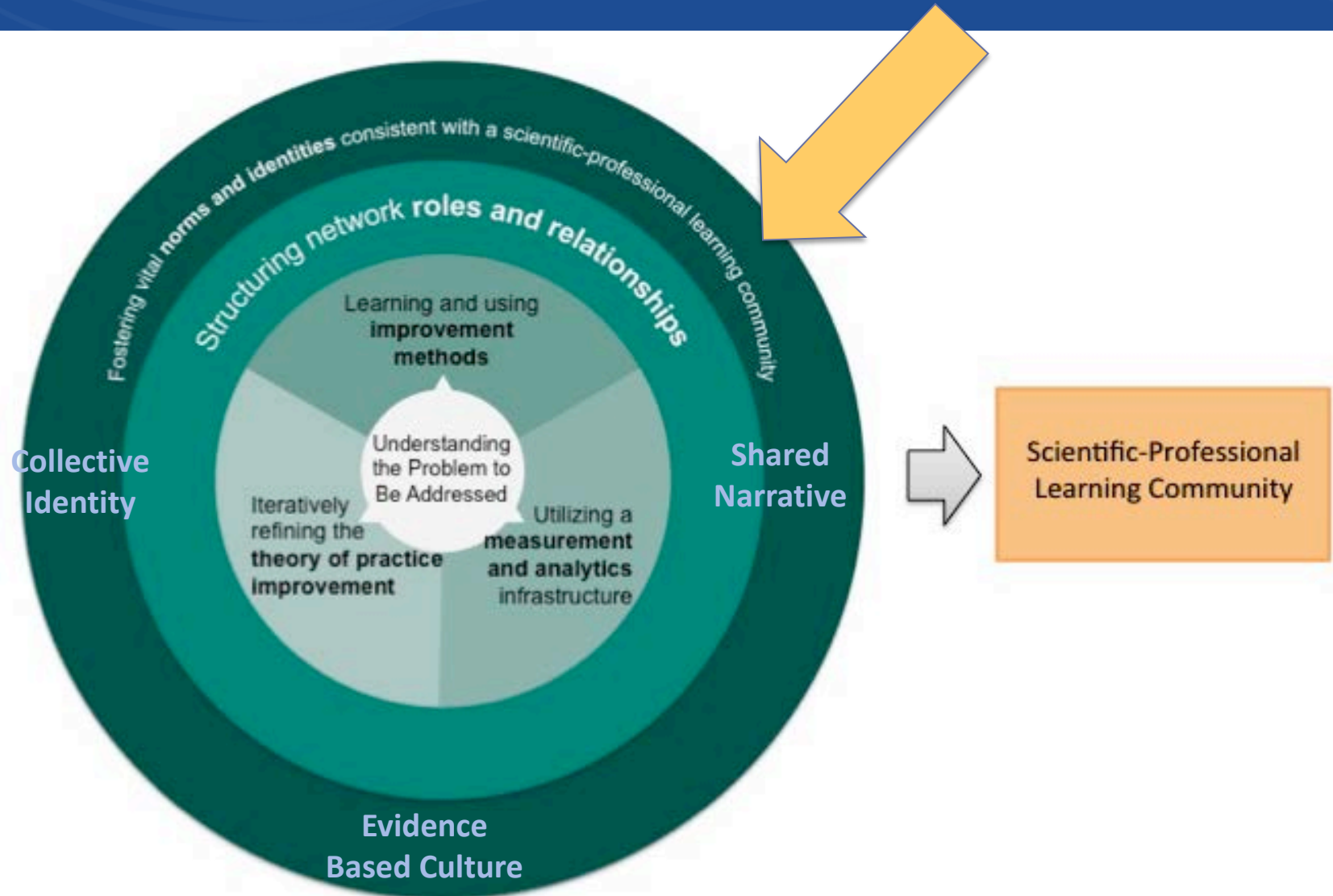


**Teacher-initiated interactions:**  
**Work time choices during network meetings cluster**  
**by small group and joint work structures**

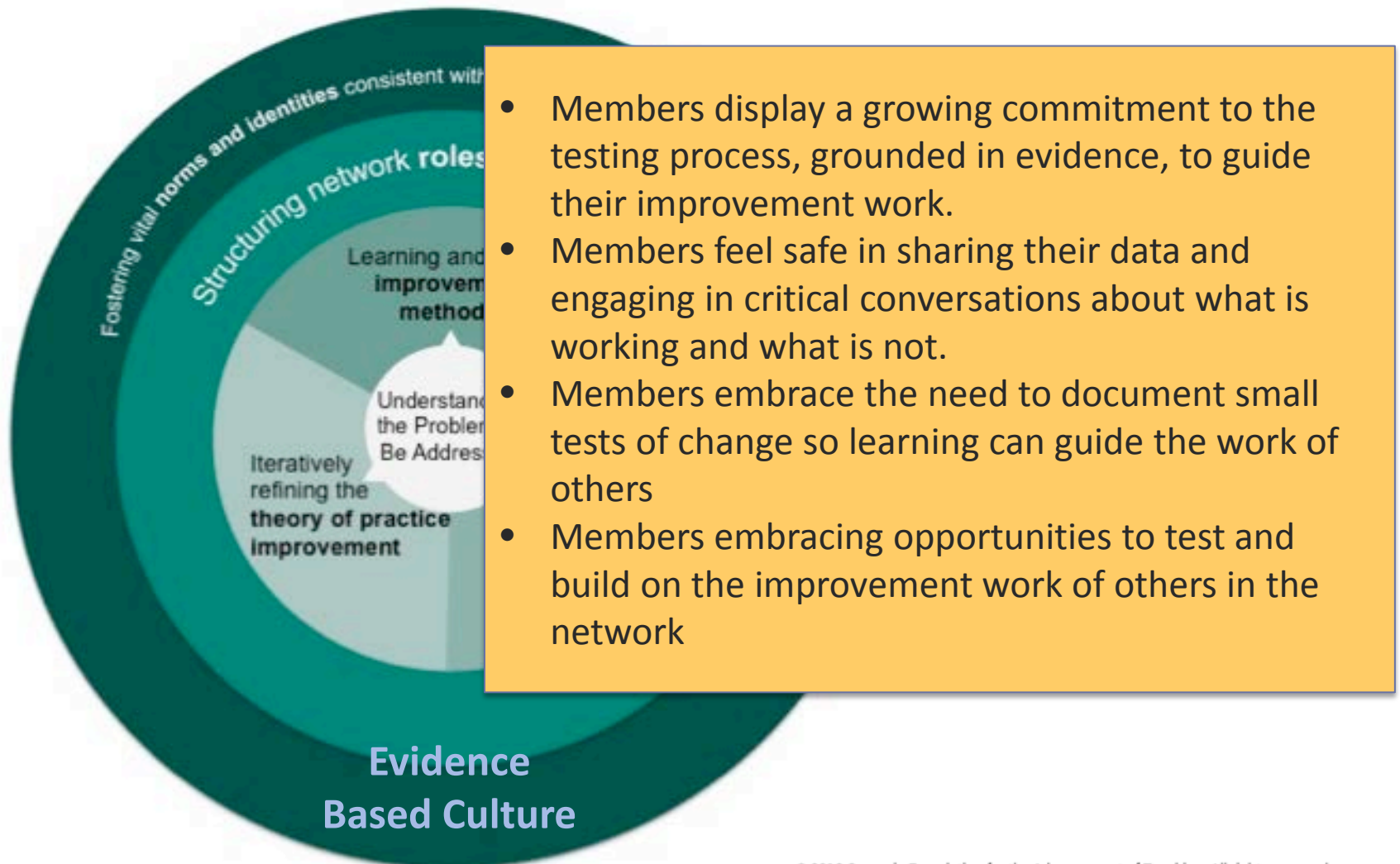
# Structuring network roles and relationships



# Fostering vital norms and identities



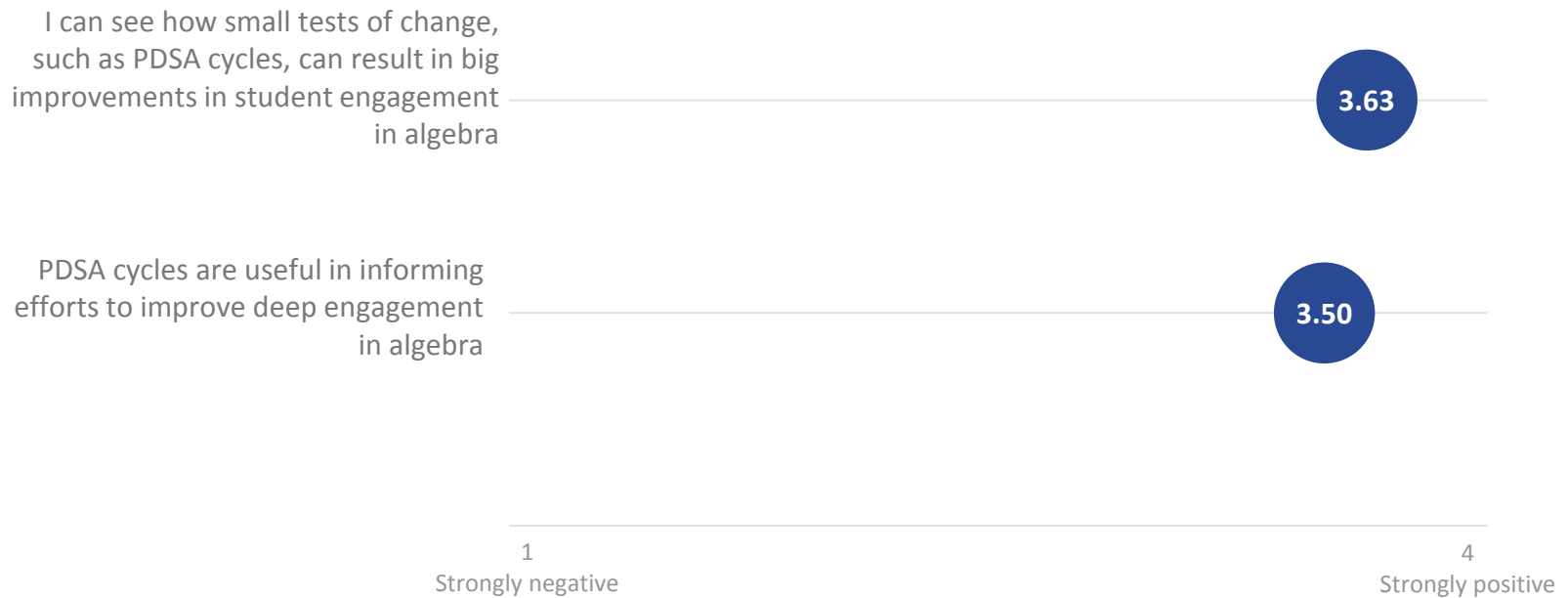
# Fostering vital norms and identities: Evidence-based culture





# Developing an evidence-based culture in the BMTN

Teachers are enthusiastic about the use of PDSA cycles to improve their practice



# Developing an evidence-based culture in the BMTN

## Active engagement in PDSA cycles

All teachers engaged in PDSA cycles and small group meetings

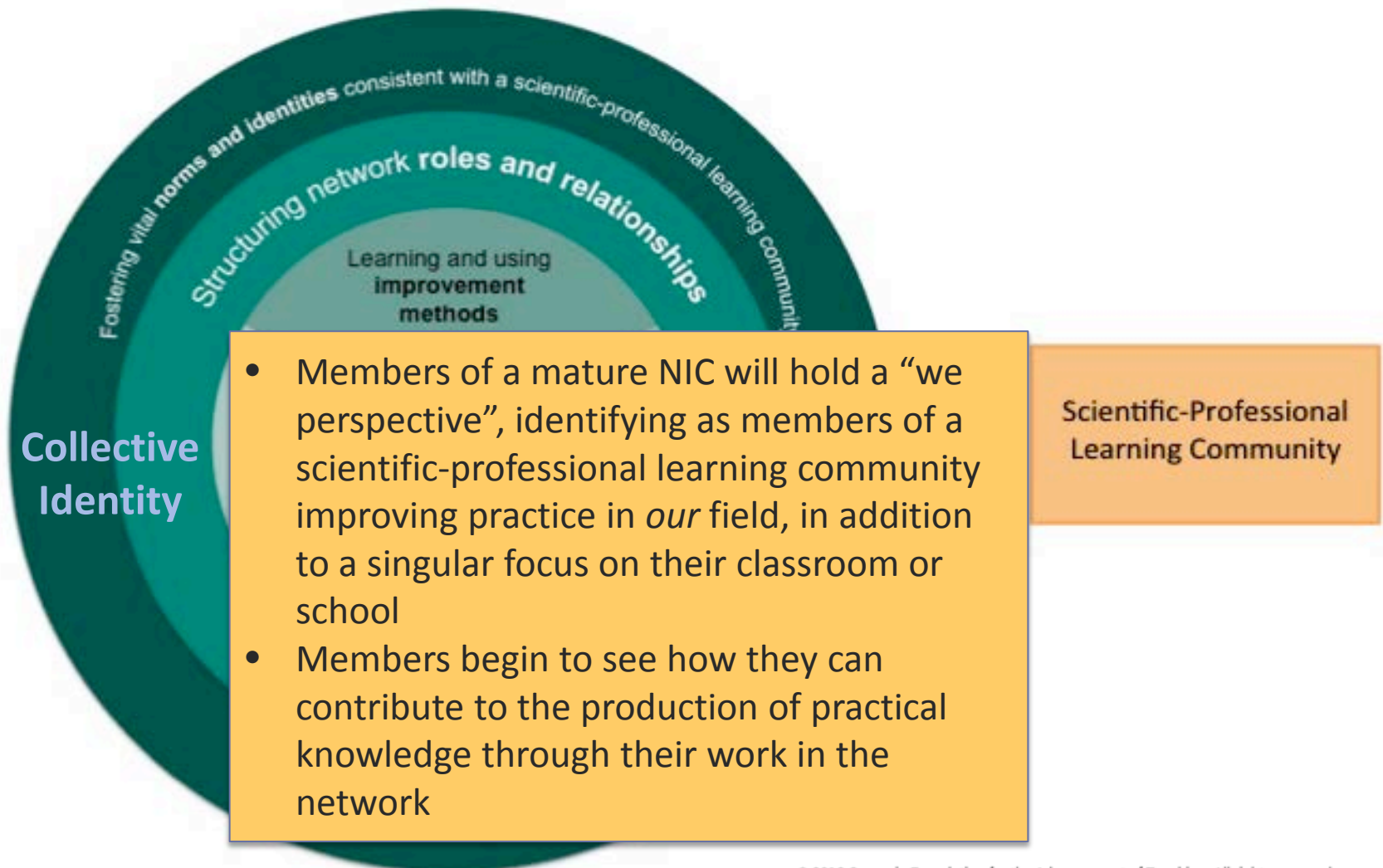
### Challenges we are seeing with PDSAs

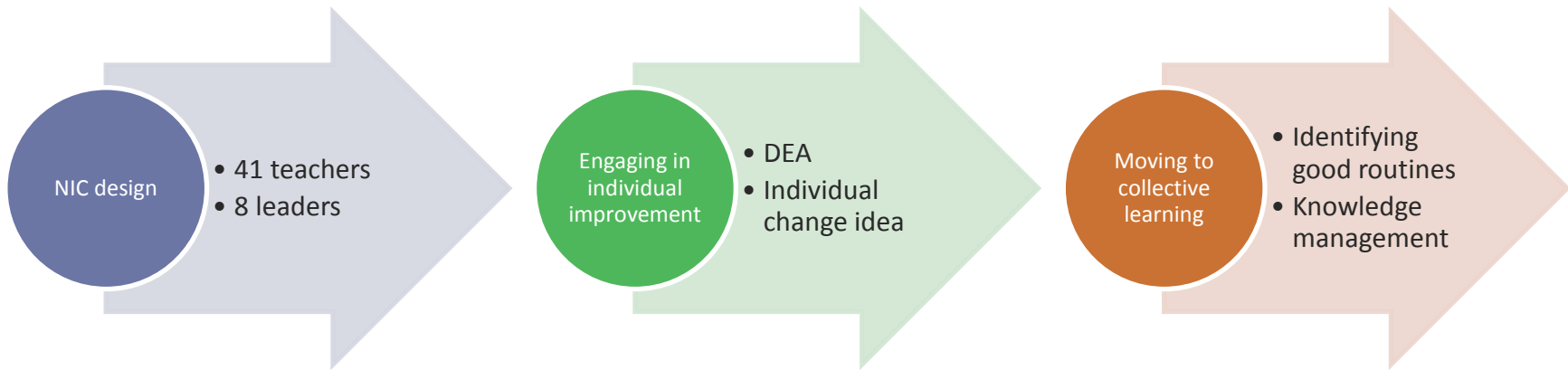
Documentation not capturing the work

Relying on intuition about outcome of test versus data-driven next steps

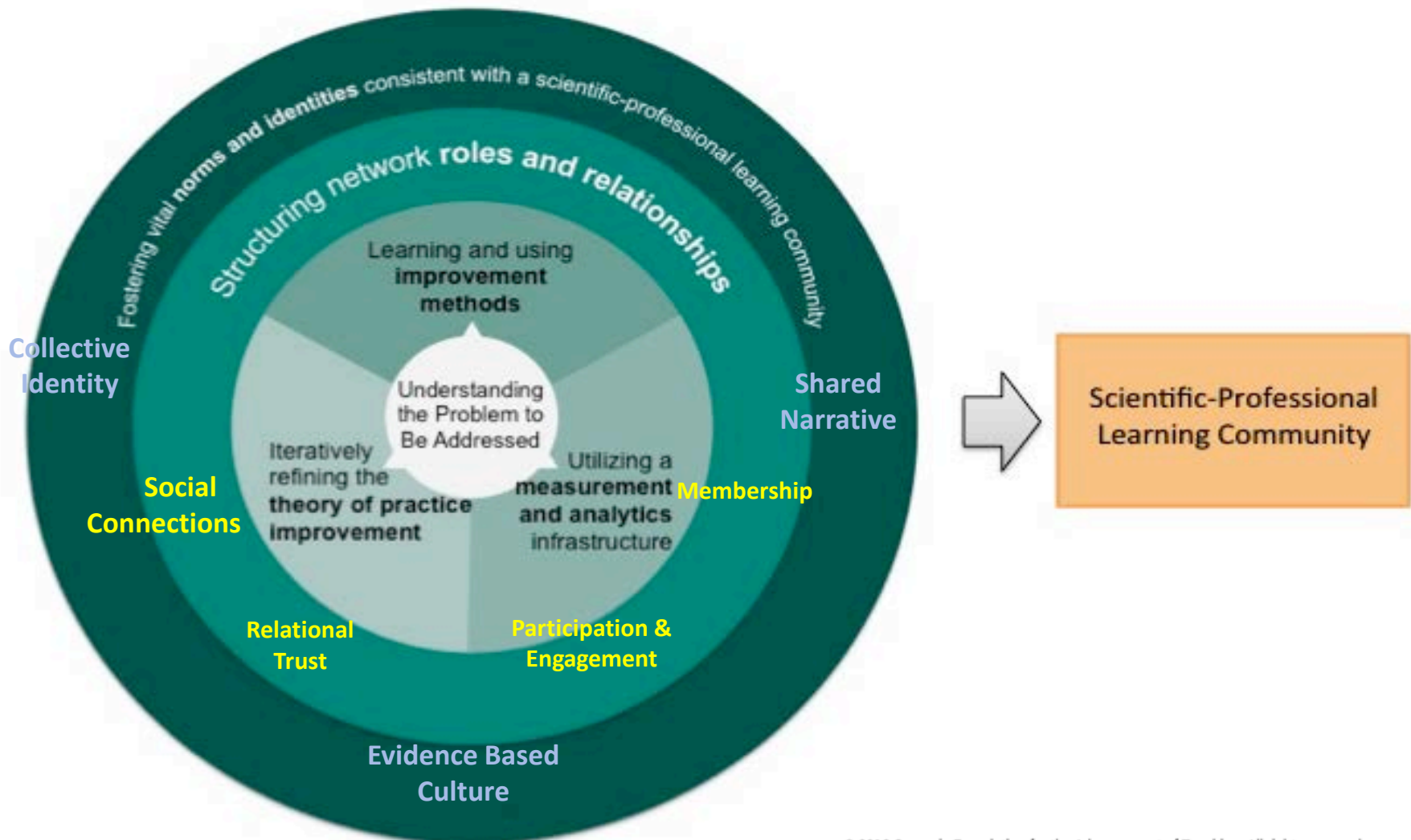
Connected to challenges with practical measurement

# Fostering vital norms and identities: Evidence-based culture





# NIC Development Framework



# Back to end goal...scientific-professional learning community

## **Scientific-Professional Learning Community**

- NICs are communities grounded by shared goals, norms, theories, and practices
- NICs are professional communities engaged in disciplinary inquiry
- NICs coordinate and accelerate learning through strategic knowledge management

# Applying the framework

- Think about your own organization.
- How does it approach problem solving and collective learning?
- In what ways does it look like a scientific professional learning community?
- Purpose of this activity:
  - Help you deepen your understanding of the framework by applying it.
  - Generate some ideas about how your organization might develop the characteristics of a scientific professional learning community.

# Activity

- Read the handout, rate your own organization on the three components of a scientific professional learning community, and reflect on the provided questions (10 minutes).
- Discuss your responses with a table partner or a group of three. (15 minutes)
- Full group share out (10 minutes)
  - What are your organization’s areas of strength? Weakness?
  - What action steps might you take and why?
  - What other questions do you have about the NIC development framework?



# Thank You!

## For more information on the framework

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