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Using social network analysis for collaborative design in a NIC

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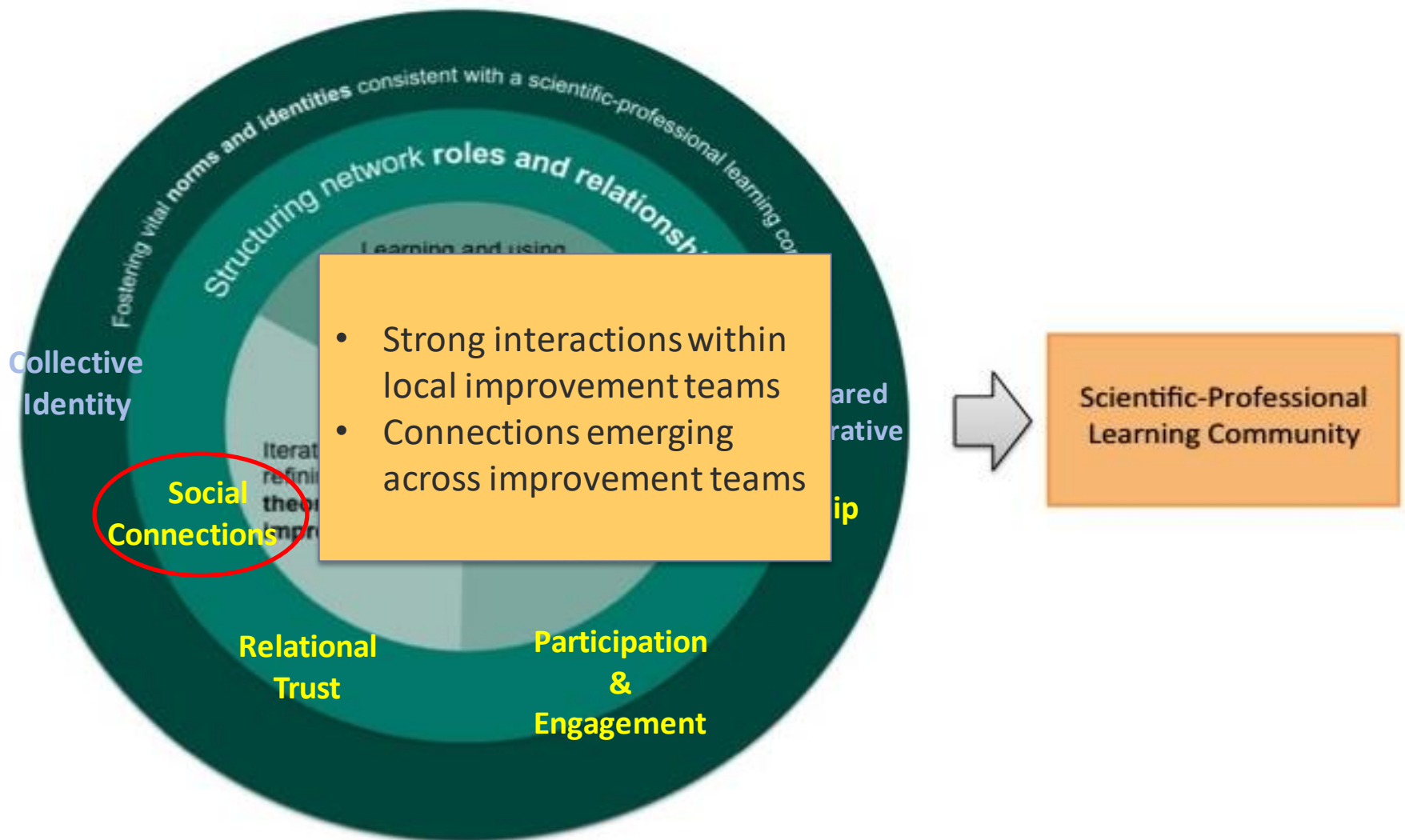Networked Improvement Science Fellow, Carnegie Foundation for the Advancement of Teaching

Background

- The social network perspective tells us that:
  - important things flow through network ties
  - The structure of a network matters
- Networked Improvement Communities (NICs) are fundamentally about bringing people together in new ways.
- Thus, social network analysis (SNA) may be a particularly good fit for NICs.
- But how can leaders use SNA to inform the design of their organizations?

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Using SNA to inform collaborative design

- SNA can be used for identifying:
  - Unsung heroes
  - Bottlenecks
  - Problematic silos (Cross & Parker, 2004)
- SNA helps us **target** our efforts at fostering collaboration.
- How might SNA be used to guide design decisions in a NIC?

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NIC Development Framework

Fostering vital norms and identities consistent with a scientific-professional learning co...

Structuring network roles and relationsh...

Learning and using

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Collective Identity

Social Connections

Relational Trust

Participation & Engagement

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- Strong interactions within local improvement teams
- Connections emerging across improvement teams

Scientific-Professional Learning Community

Central Valley Network Improvement Communities

8 School Districts   15 Schools

1091 Students   41 teachers

33% English Learners   75.2% Socioeconomically Disadvantaged

California
CVNIC
Mathematics

Tulare County
Office of Education

AIM

Improve 5th grade math proficiency from 17% to 51% in CVNIC by 2019

Classroom Culture & Mindset

- Launching the Math Year
  - Classroom Norms + iMath Curriculum
  - Exit Slips
- Beliefs about Mathematics Learning
- Cooperative Learning
  - Rich Task Teaching Routine
  - Student groups and work space

Mathematics Instruction: sense-making productive struggle

- Mathematical Tasks
  - Tools for Opening Tasks
  - Problem Solving Package
  - Student Question Stems
- Whole Class Debrief
- Formative Assessment
  - Analysis of student work

Aligning Supports for Instructional Improvement

- Teacher Access to Personalized Coaching
  - Hub Site visit
  - Consolidation Meetings
- Planning Process
  - PDSA with a partner/coach
- Lesson Observation with Debrief
  - Lesson Study
- Site Team Improvement Routines
  - Coach/teacher contact process

Collective Learning & Shared Knowledge

- School Culture of Teaching & Learning
  - Content training from Hub
  - External IS support
- Professional Learning
  - Jo Boaler PD
  - Adults doing math
- Network Meetings
  - Cross-site/district visits
  - Network Facebook group
- Cross-district collaboration

CVNIC Driver Diagram
*iteration 30   FEB 2018

California
CVNIC
Central Valley Networked Improvement Communities
Mathematics

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Office of Education
Jim Vidak, County Superintendent of Schools

AIM

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Collective Learning & Shared Knowledge

Site Team Improvement Routines

PDSA with a partner/coach

Network Meetings

Cross-district collaboration

Cross-site/district visits

Network Facebook group

CVNIC Driver Diagram
*iteration 30   FEB 2018

Initial Social Network Analysis of CVNIC

- Focused on one SNA Question:
  - In the last six months, how often have you had network-related interactions with other network members via email, phone, or face-to-face?
    - No interaction
    - Once or twice
    - Monthly
    - Weekly
    - Daily
- Used UCINET software (Borgatti, Everett, & Freeman, 2002) to look for:
  - Central actors
  - Problematic silos
  - Match between the formal and informal organization

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Social Network Map #1:
Sizing nodes by degree centrality

HUB

Improvement specialists highly central

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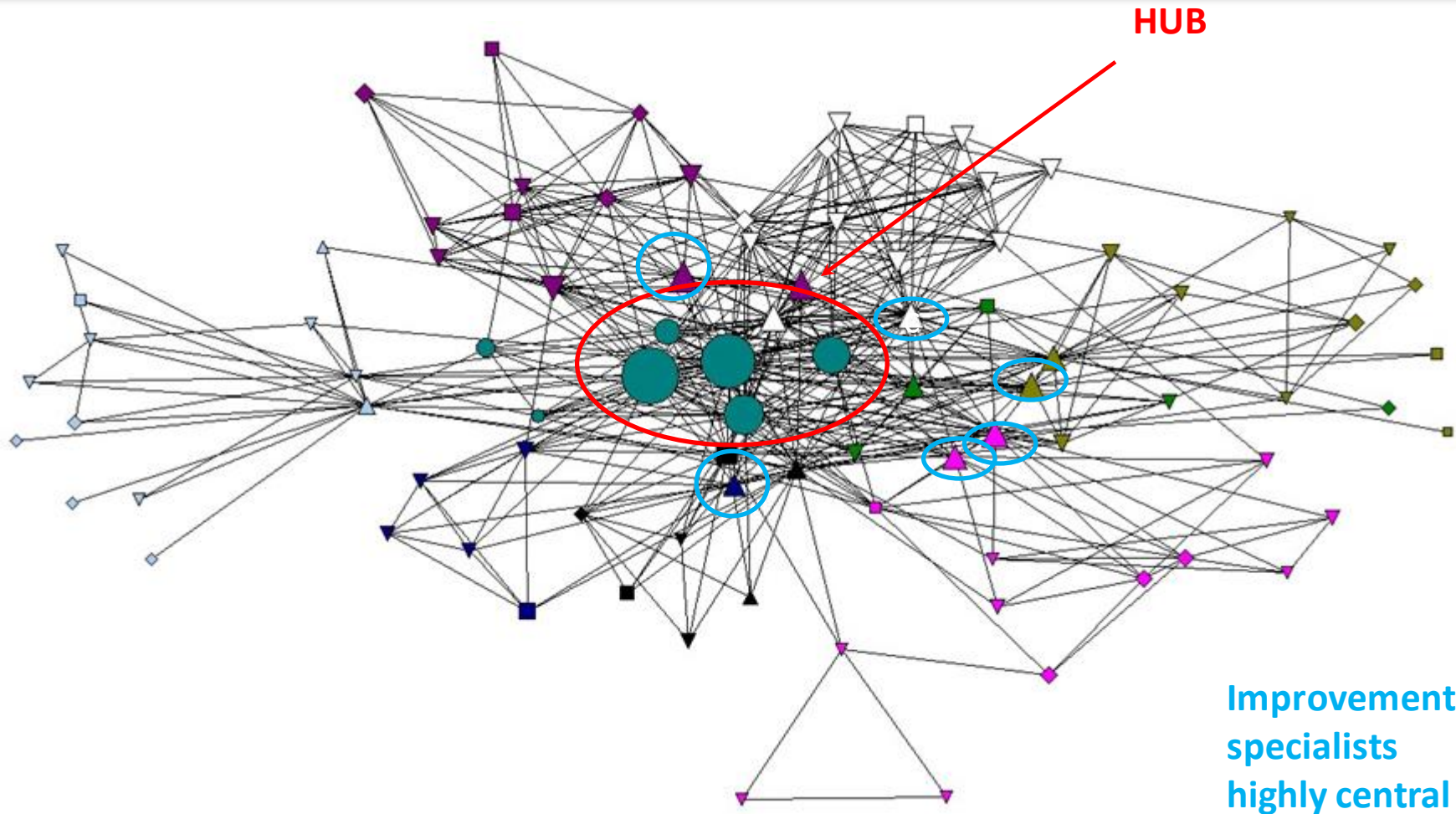
Your Turn!

See Handout

- What do you notice? (5 mins)

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Social Network Map #2:
Visualizing only school-level staff (principals and teachers)

Bridges depend on single actors

Isolated districts
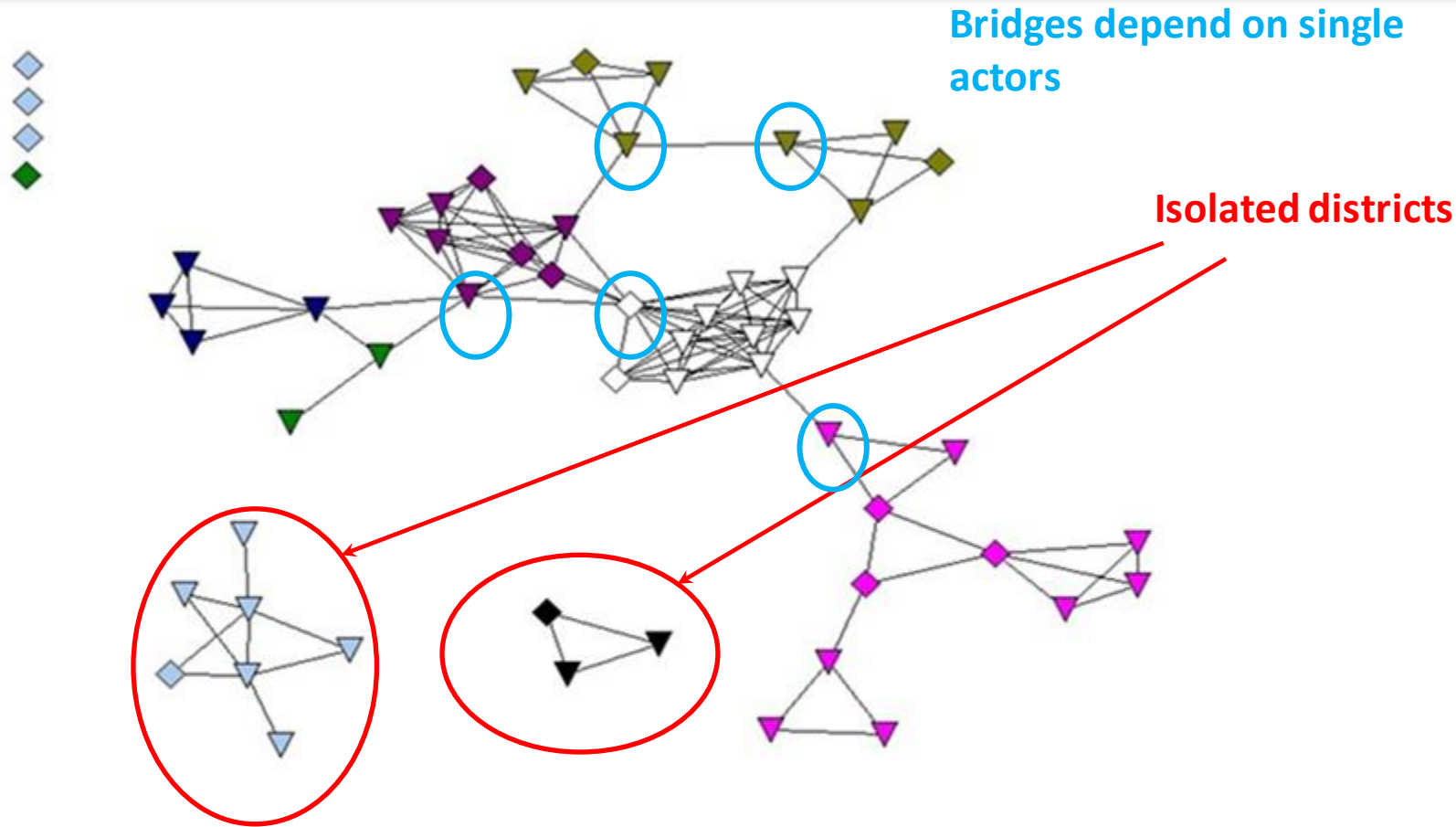
# Changes made related to the social network findings

- To build connections within the districts:
  - Network Facebook Group
  - PDSA with site-partners
  - Site visits from the hub/Consolidation of learning
- To build connections across districts:
  - Network Facebook Group
  - Cross District Visits/Collaborative PDSA Testing
  - District Showcase at network meetings

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MAY 2017
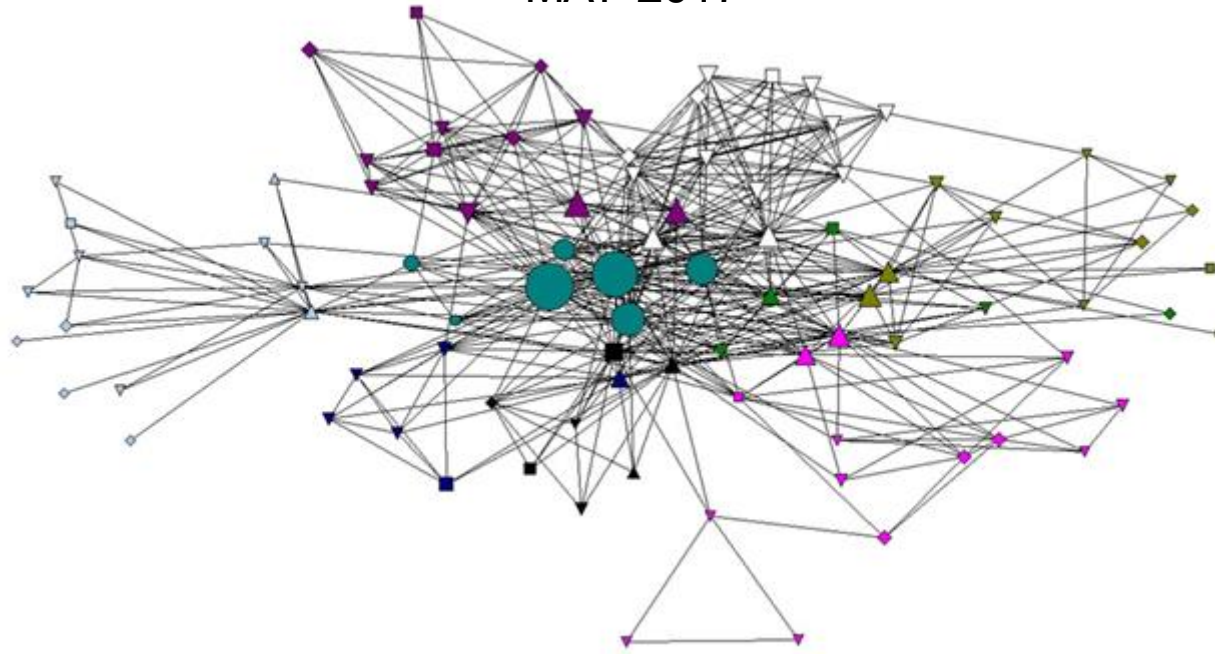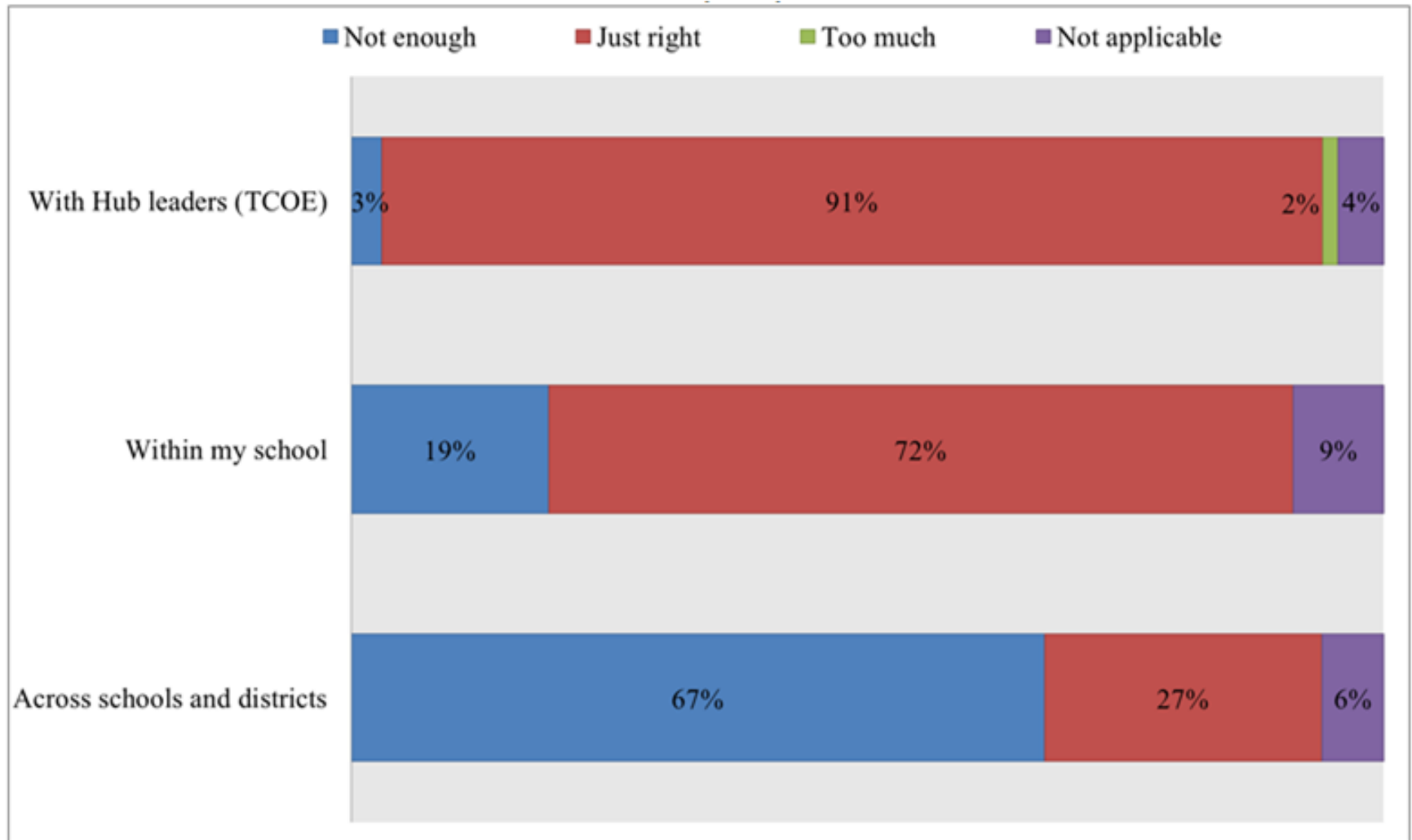

FEBRUARY 2018
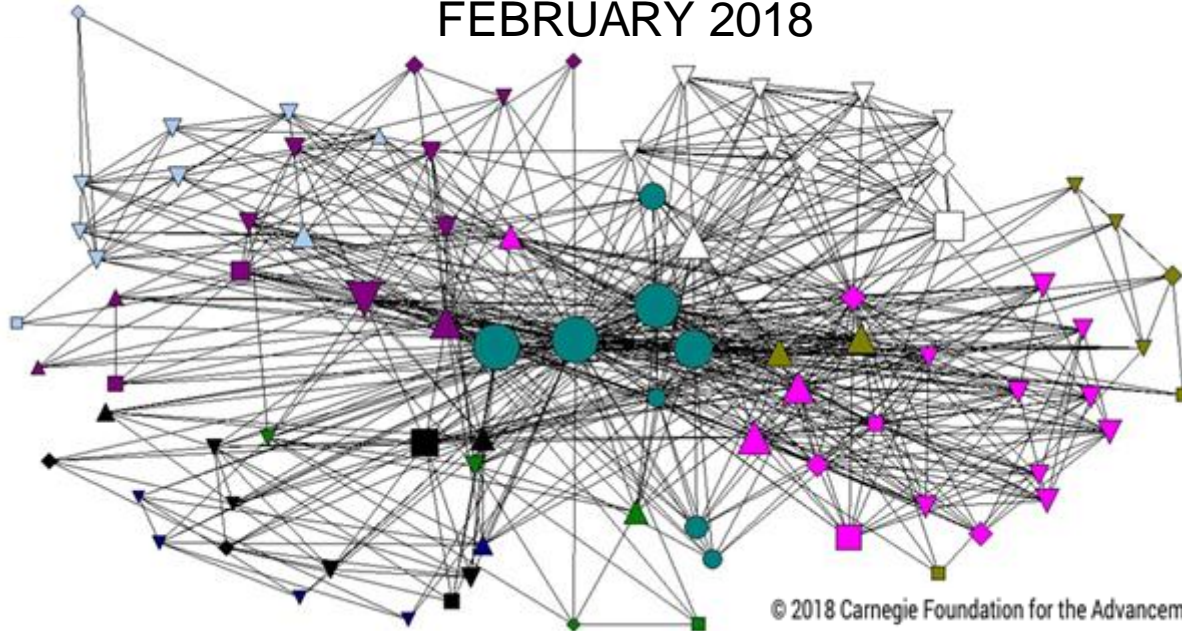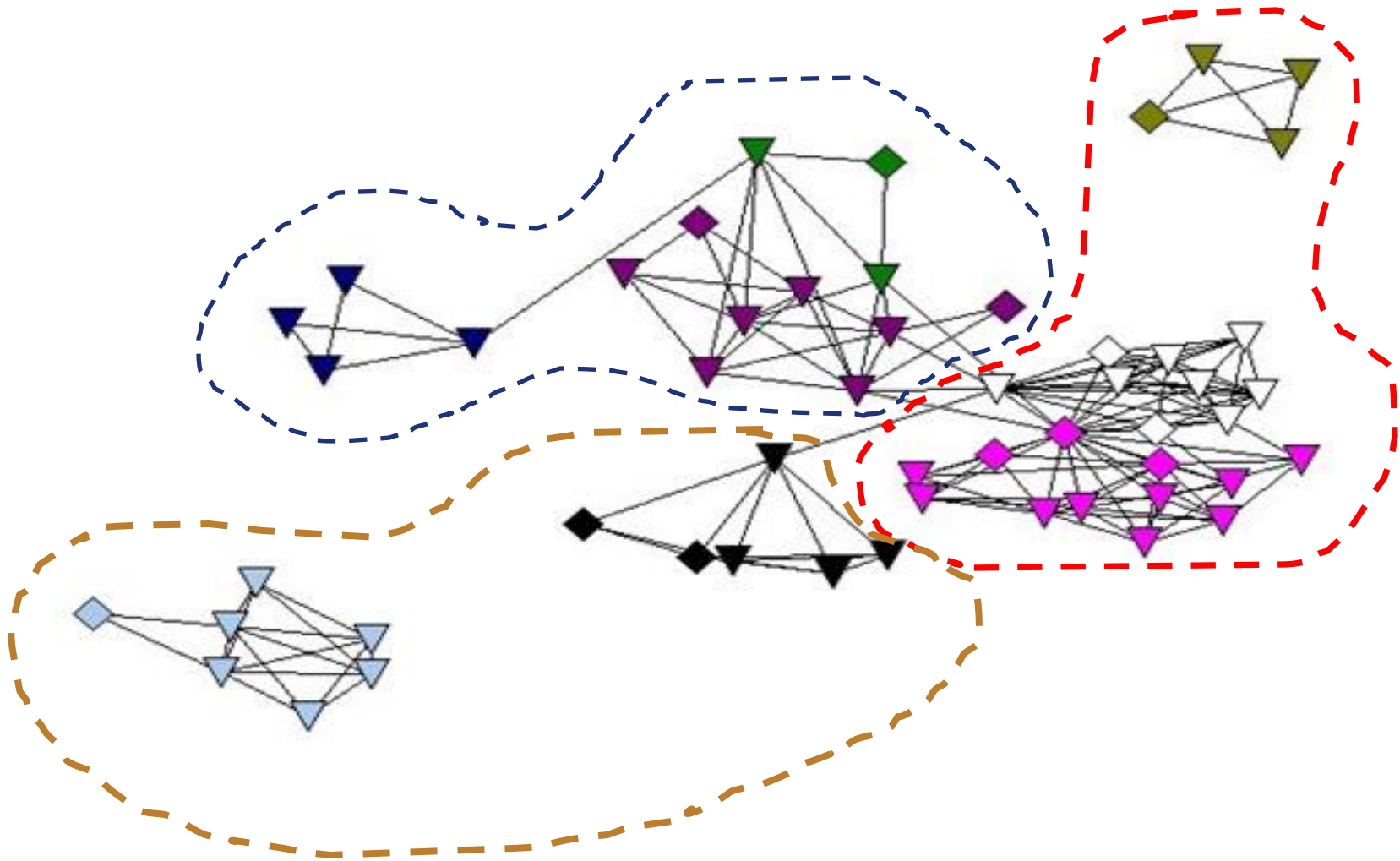
What's next for CVNIC?

- Continue to test collaboration change ideas for the network.
- Principal connectedness change ideas:
  - principals to join coaches' meetings
  - common problem of practice -"scale"
  - principal cohort meetings

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Summary

- SNA can be a useful **practical tool** for educational leaders, especially those who are trying to foster new forms of collaboration.
- CVNIC used SNA to **diagnose** areas in which they wanted to strengthen social connections, **plan** new collaborative structures, and **assess** the effects of their efforts.
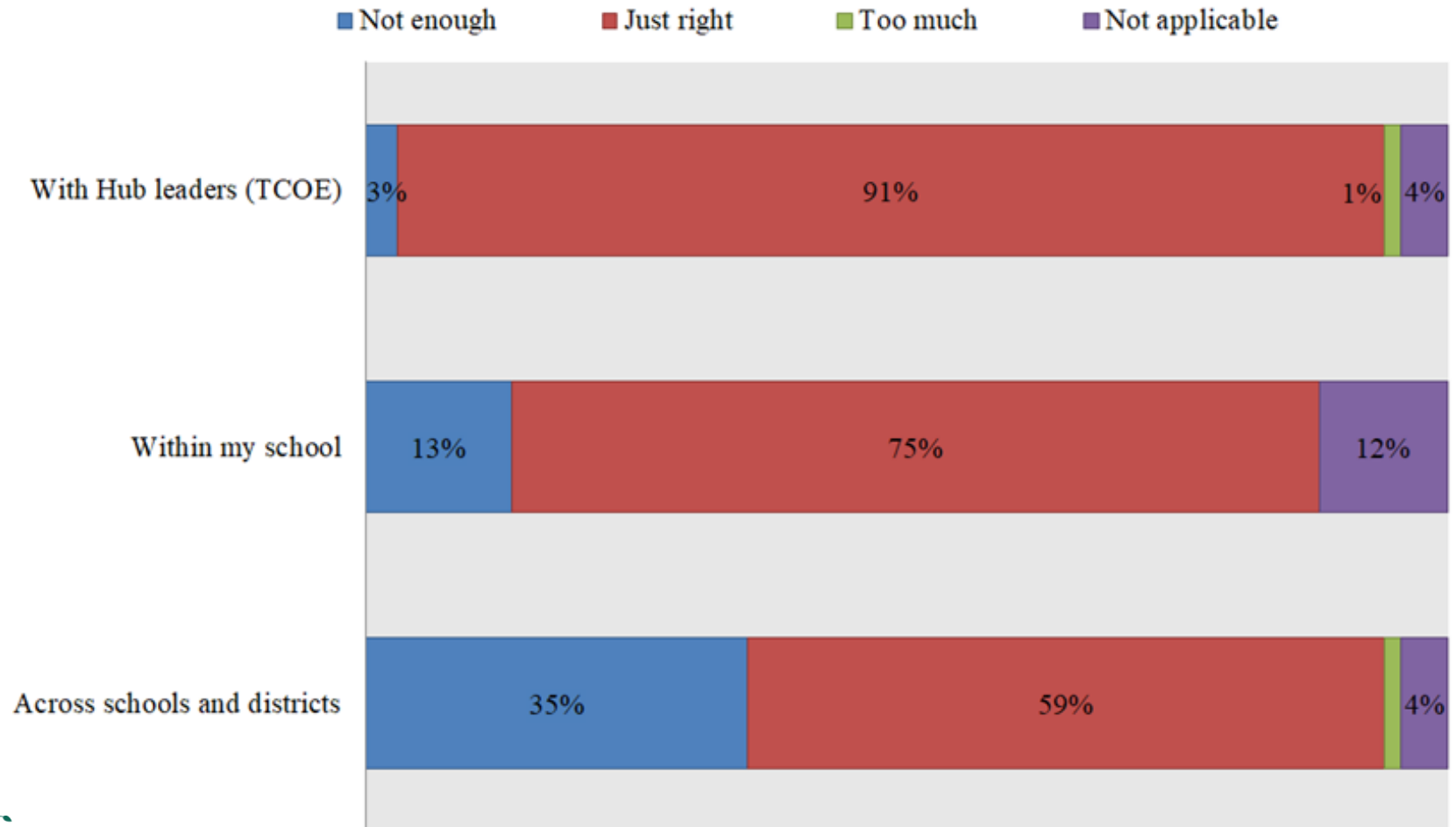
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Thank you!

Supplemented social network data with additional data:
What is your satisfaction with the extent of communication from the following sources?
May 2017

What happened?
What is your satisfaction with the extent of communication from the following sources?
February 2018

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