Educational Policy, School Administration, and the Technical Core

{ The Local Infrastructure and Instructional Improvement Challenge

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The Distributed Leadership Studies: http://www.distributedleadership.org
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Focus on *Practice*

- Instructional improvement depends on improving the practice of leading and managing
- Practice is generated in the interactions among school staff; attention to interactions, not just actions, is necessary
- Practice is in great part about structure and infrastructure, embedded in the formal and informal aspects of the organization

Spillane, J. P. (2006) *Distributed leadership*. San Francisco: Jossey-Bass.

Why Interactions Matter

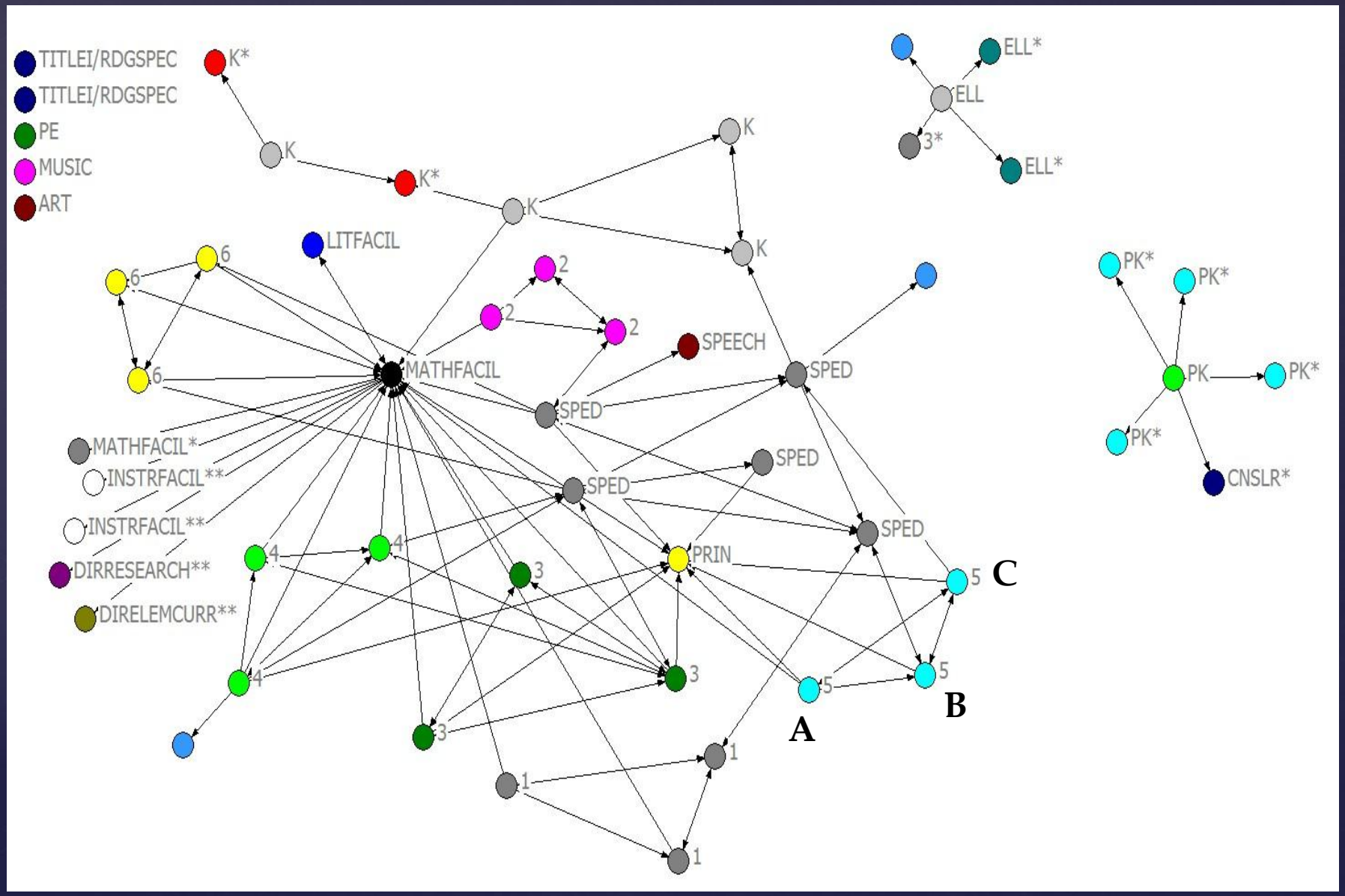
- Social relations can be a source of resources, including trust, expertise, opportunities for joint sense-making, and incentives for innovation
- On-the-job interactions are associated with the transfer of advice and information – essential for professional learning and the development of new knowledge
- The formal organizational structure can enable and constrain interactions among organizational members

Blau, 1957; Bryk & Schneider, 2002; Coburn, 2001; Daly & Finnigan, 2010; Elmore, 1996; Eraut & Hirsh, 2007; Frank, Zhao, & Borman, 2004; Hill, 2004; Little, 2002; Smylie, 1995; Spillane, 2004

Understanding Practice

- We have tried to understand the practice of leading and managing by:
  - Developing research instruments to capture social interactions
  - Describing practice through empirical investigations
  - Working with districts and schools to facilitate reflection on and diagnosis of practice
- It is not simply what people "do" that matters, but how they do so "together" (Becker, 1986)

Elementary Mathematics Advice Network

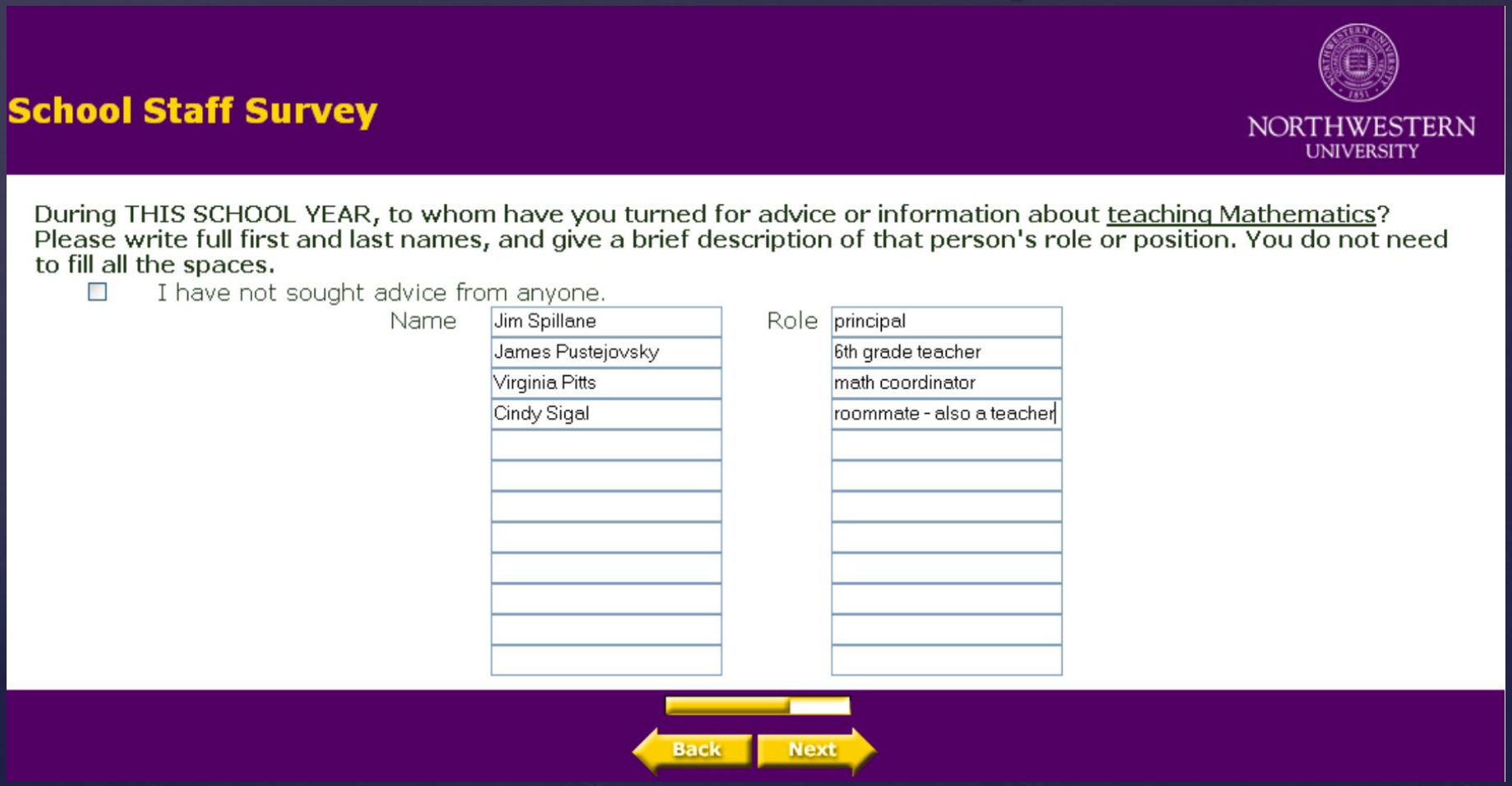


NebraskaMATH Study

- Elementary and middle schools in Nebraska
  - 2007 and 2008: 10 middle schools in one district
  - **2010 through 2013: 82 K-6 schools in four districts**
- University-district partnership
  - Professional development in mathematics for selected teachers, leading to a mathematics specialist certificate
- Survey and interview data
  - School Staff Questionnaire (SSQ)
  - Follow-up interviews with staff from five elementary schools in one district

Social Network Instrument

Screen Shot from SSQ – Math Advice Questions Page 1

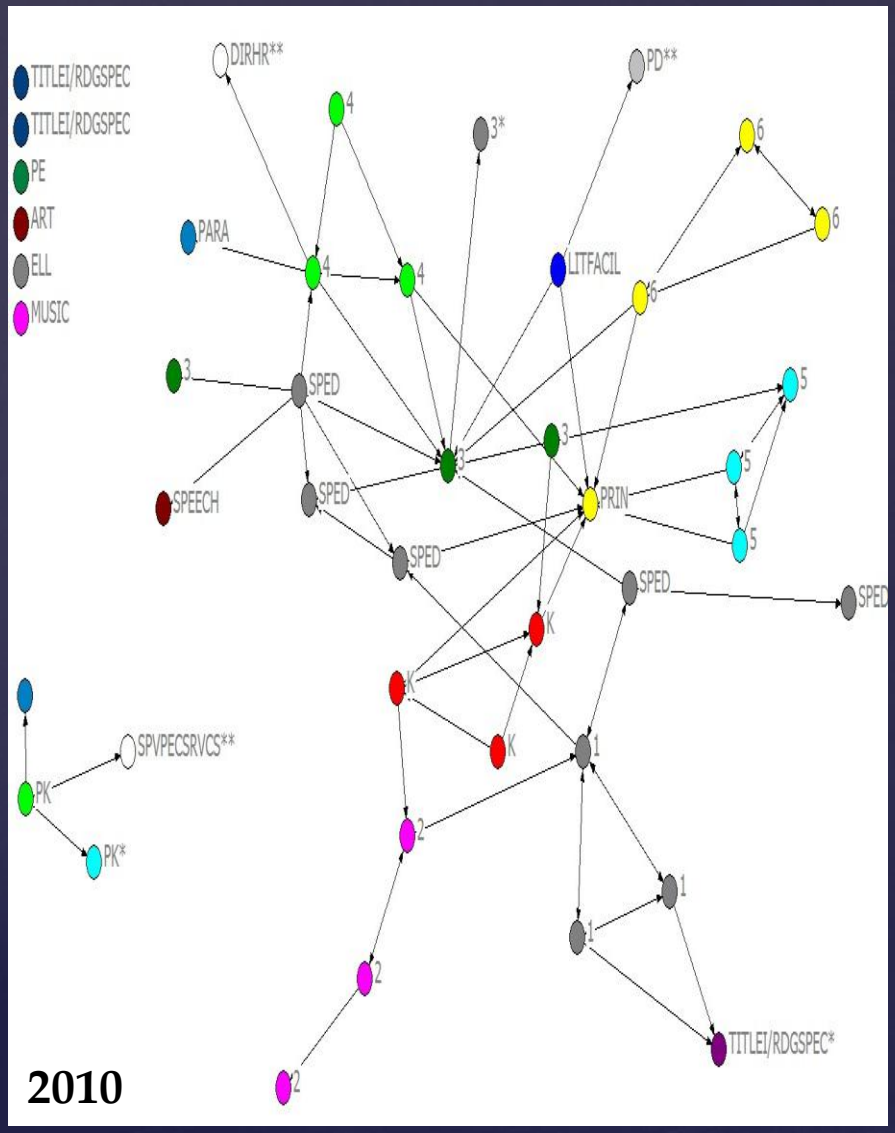


Formal Organizational Structure and Advice and Information Seeking Behavior

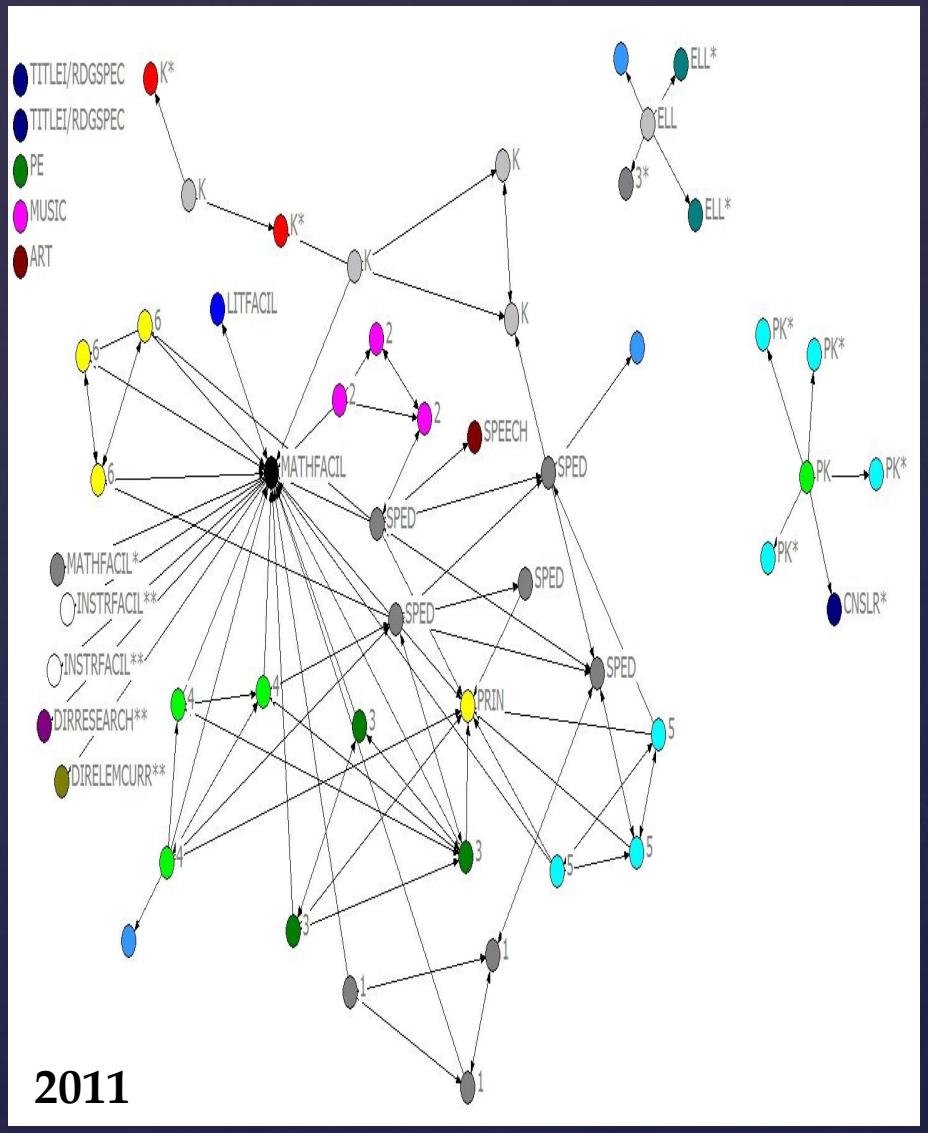
- Leadership
  - Formal leaders are more likely to provide advice or information
  - Part-time leaders are more likely to provide advice than full-time leaders and are often brokers between subgroups of teachers
- Expertise
  - Teachers are more likely to receive advice about a subject from teachers who reported more PD hours in that subject
  - Teachers who reported more PD hours in a subject are more likely to receive information in that subject

Spillane, J. P., Kim, C. M., & Frank, K. A. (under review). Instructional advice and information seeking behavior in elementary schools: Exploring tie formation as a building block in social capital development. *American Educational Research Journal*.

Math Coach Facilitates Interactions



2010



2011

Formal Position Important for Advice Seeking

"[Emily] really wasn't our facilitator [last year], though she was my co-worker, just a third grade teacher. I knew she had a wealth of knowledge, I just wasn't in [her classroom] when she was teaching math. But, now that she's moved into this math facilitator position, that's different…She's been trained in it. And, she's gone to school for it and she's a great coach. She knows a lot about math and I trust her that she has a lot of, a wealth of knowledge… She's the go-to person."

– Angie, Special education

Training Also Serves as a Marker of Expertise

Paula: Why would you say you talk to John (the university mathematics PD participant)?

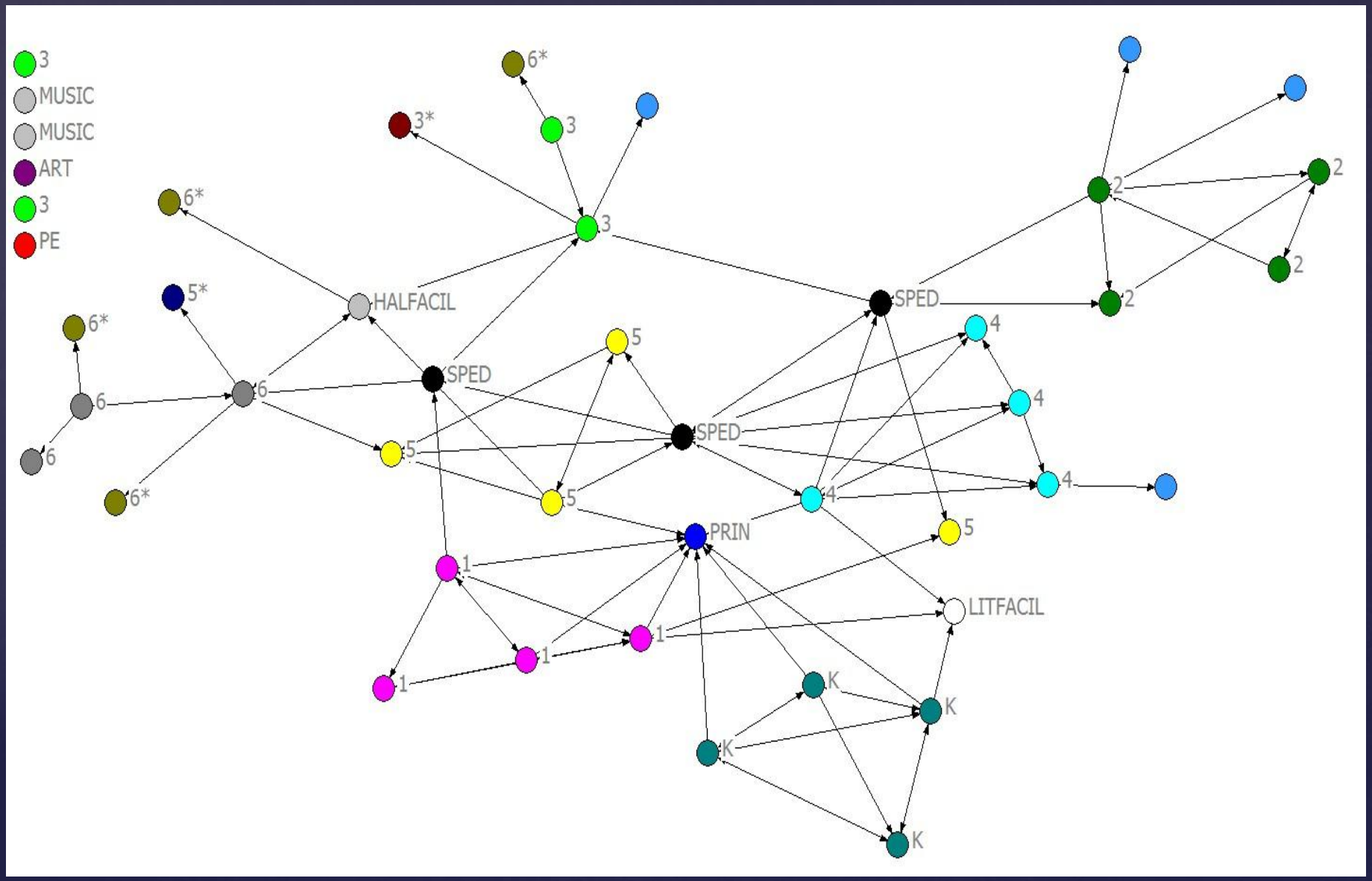
Karen (1st grade): Because he's a second grade teacher….He's kind of become the math person to see because he's taken this extra training that nobody else in the building has done, and I know that he's interested in math so, he's just one that I've gone to that I know focuses very heavily on, I like his beliefs and the way that he has his room set up and the way that he carries himself.

Formal Organizational Structure and Advice and Information Seeking Behavior

- Formal structures and routines
  - Teachers in the same grade are more likely to receive or provide information
  - School leaders design organizational routines to change the interactions among staff with respect to who talks to whom about what
- Subject matter
  - Advice and information ties vary depending on the school subject (mathematics versus English language arts)

Spillane, Kim, & Frank. (under review); Spillane, Parise, & Sherer (2010).

Professional Learning Communities Support Mathematics Infrastructure



Using Routines to Lead and Manage for Math Instruction

"My strategy is to make sure I have so-called pockets of leadership throughout the building to assist with [math instructional issues]. It is kind of a puzzle or a chess game, a strategy for arranging people a certain way. When teachers are sitting in their PLC [Professional Learning Community] meetings I don't want them going, 'Well, we don't know how to handle this math issue because so-and-so is not here,' you know, you worry that you're gonna have a PLC meeting that's so dependent on you as the expert or principal. So it is about the hiring process, trying to look at the people you have; I think has to do with moving people to different places. Some cases it's growing the right people."

– Jim, elementary school principal

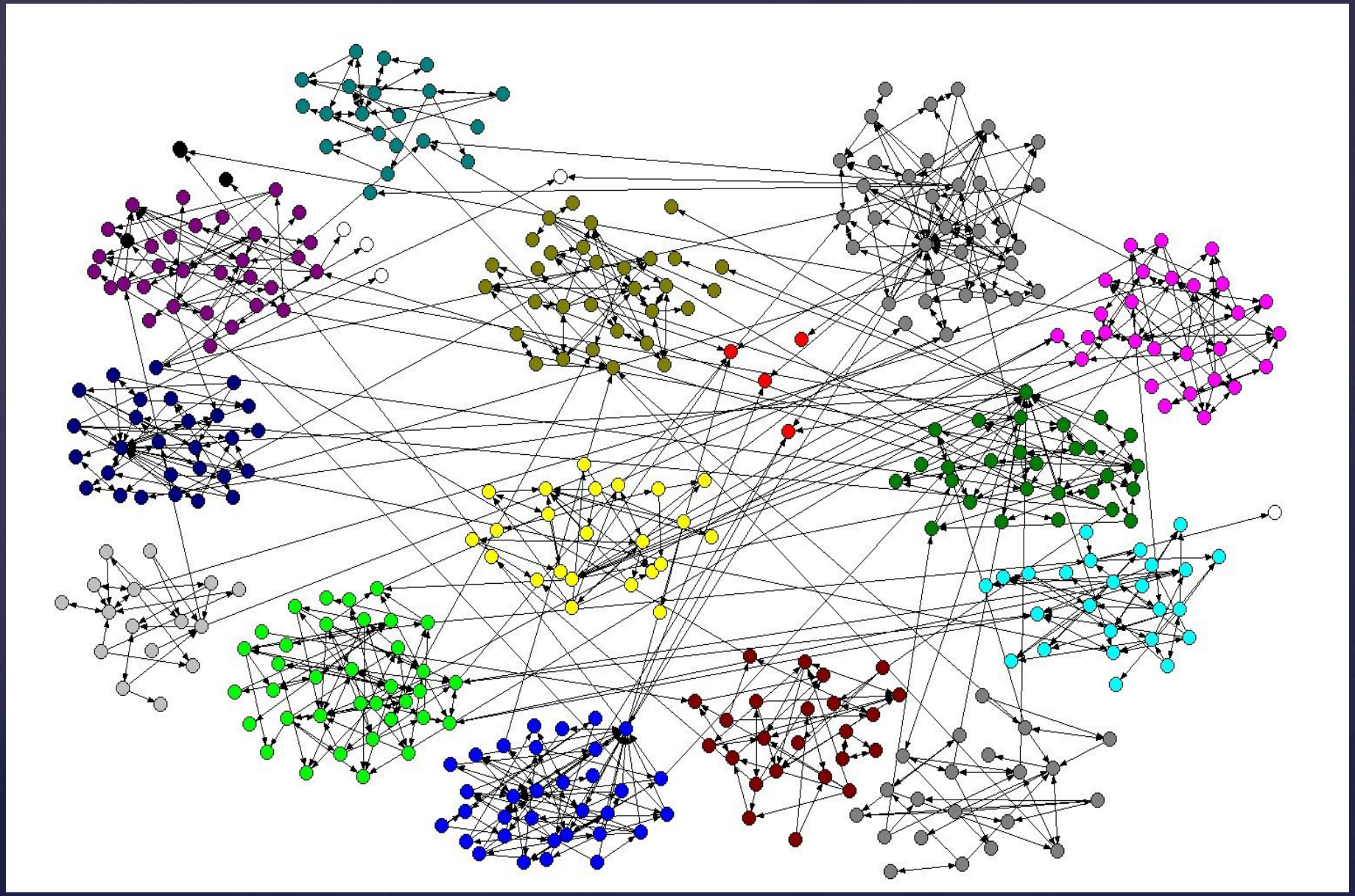
Development

- System and organizational (infra)structure
  - Designing infrastructures to support instruction and its improvement
  - Preparing school leaders to diagnose and design
- School administrative practice and the resources that enable it
  - Getting at the micro processes of administration while not losing site of macro structures
  - Beyond the school principal to other formal leaders (full- and part-time) and informal leaders

Role of Research in Development

- Providing regular and structured feedback to research sites on our research findings
  - Engage study participants in diagnostic and design work using their own data
  - Challenges: human subject protection, research design
- Modules for developing administrative practice
  - Distributed perspective: leadership teams, focus on practice
  - Research findings inform module design
  - Diagnostic and design activities developed around cases
  - Translating theoretical and conceptual frames for practitioner use

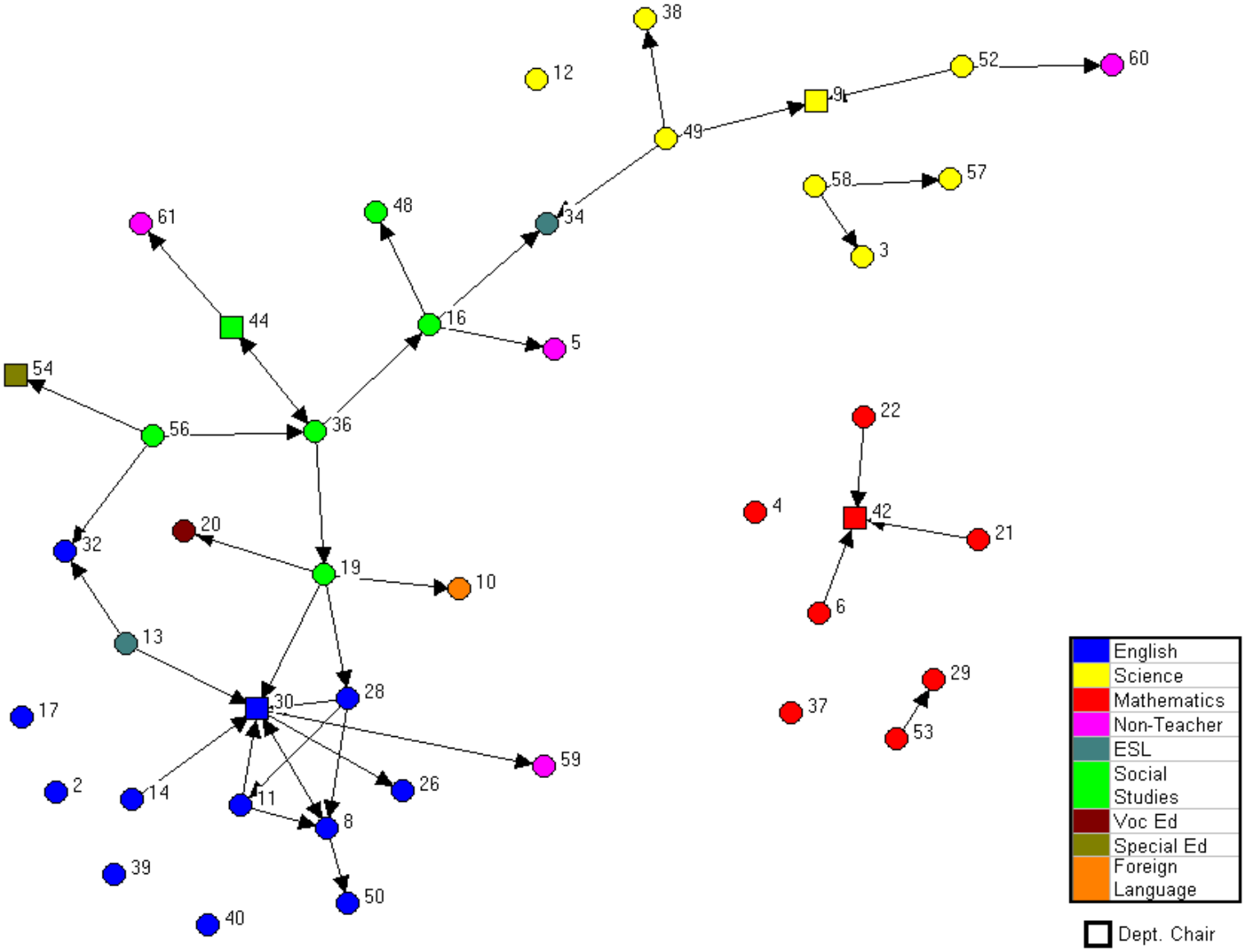
Pleasantville District Elementary Math Network



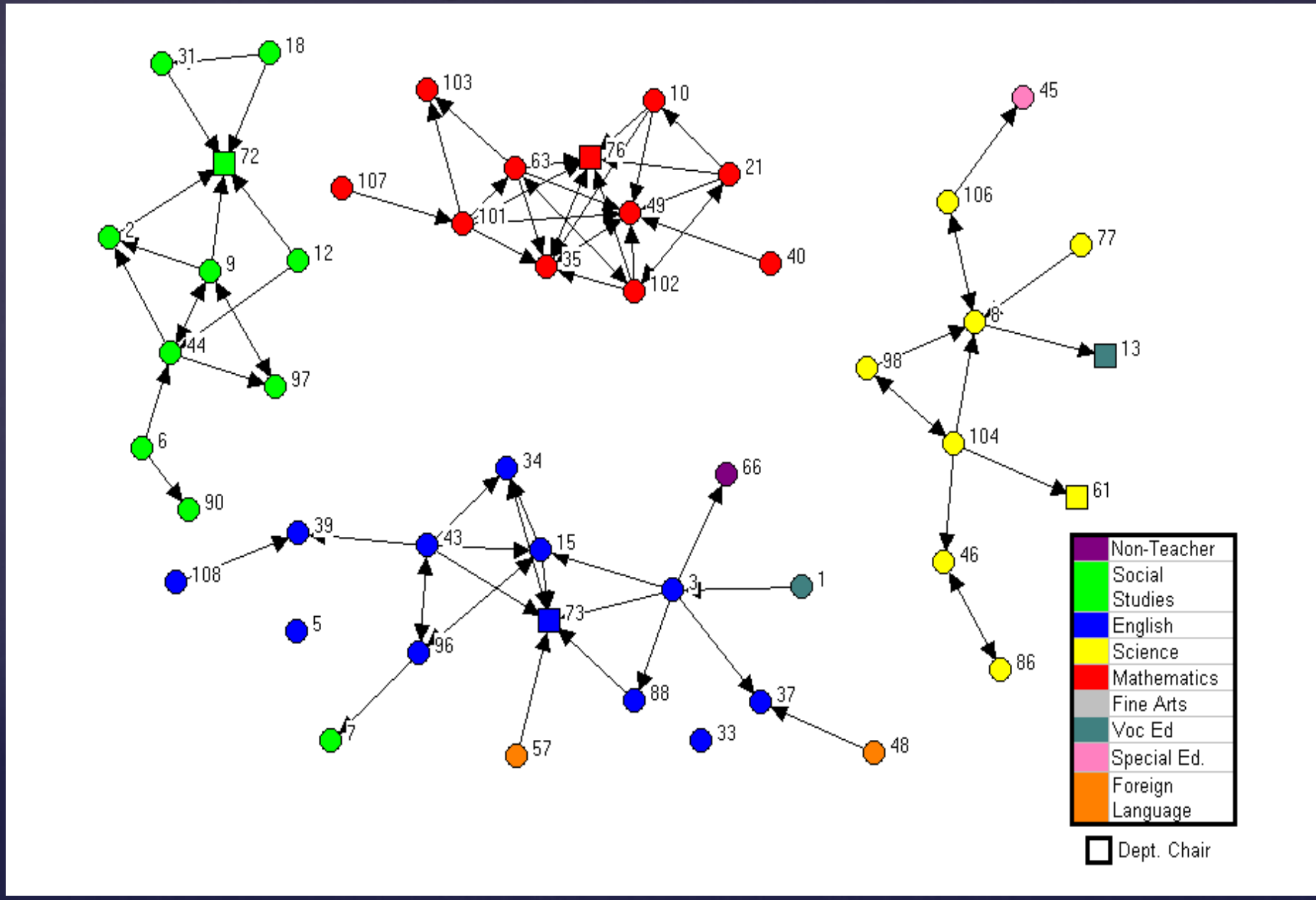
A Task

- Imagine you are introducing a new STEM curriculum in Fern Hill and Pink Hamlet High Schools.
- Examine the advice networks in the two high schools:
  - What patterns do you notice that might be relevant to your program implementation efforts?
  - Identify two differences between the schools that you would consider in your implementation efforts.
  - How would your implementation efforts differ from Pink Hamlet as compared to Fern Hill High School?

Fern Hill High School Curriculum Network



Pink Hamlet High School Curriculum Network



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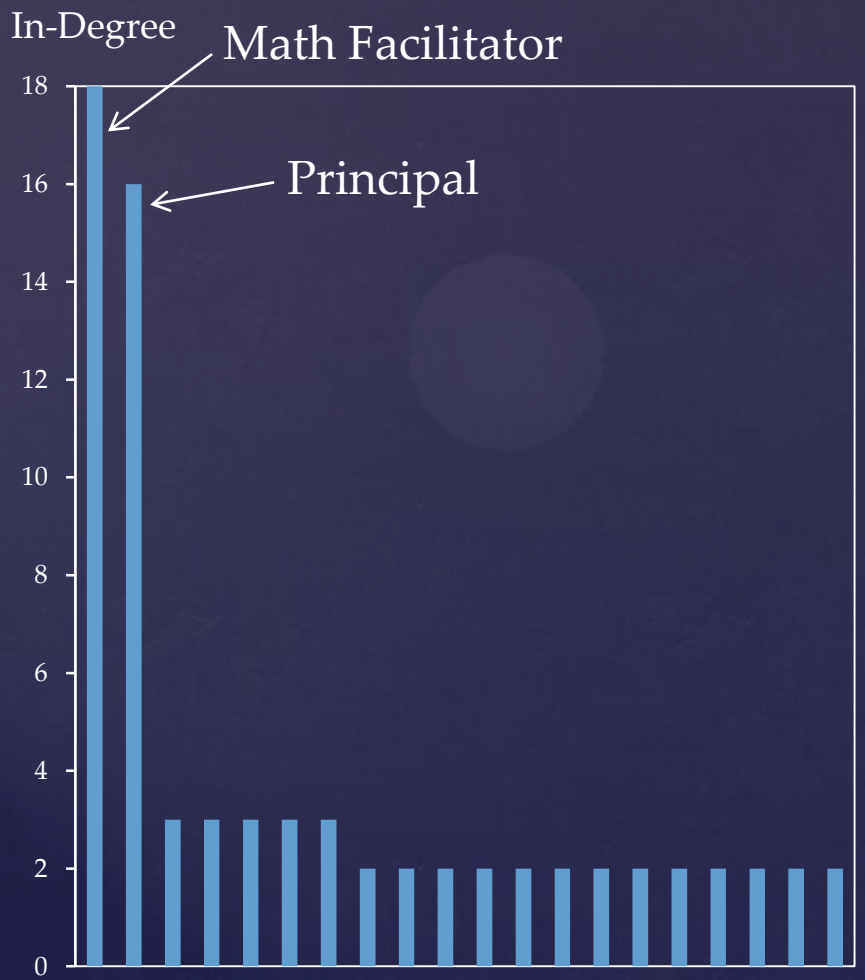
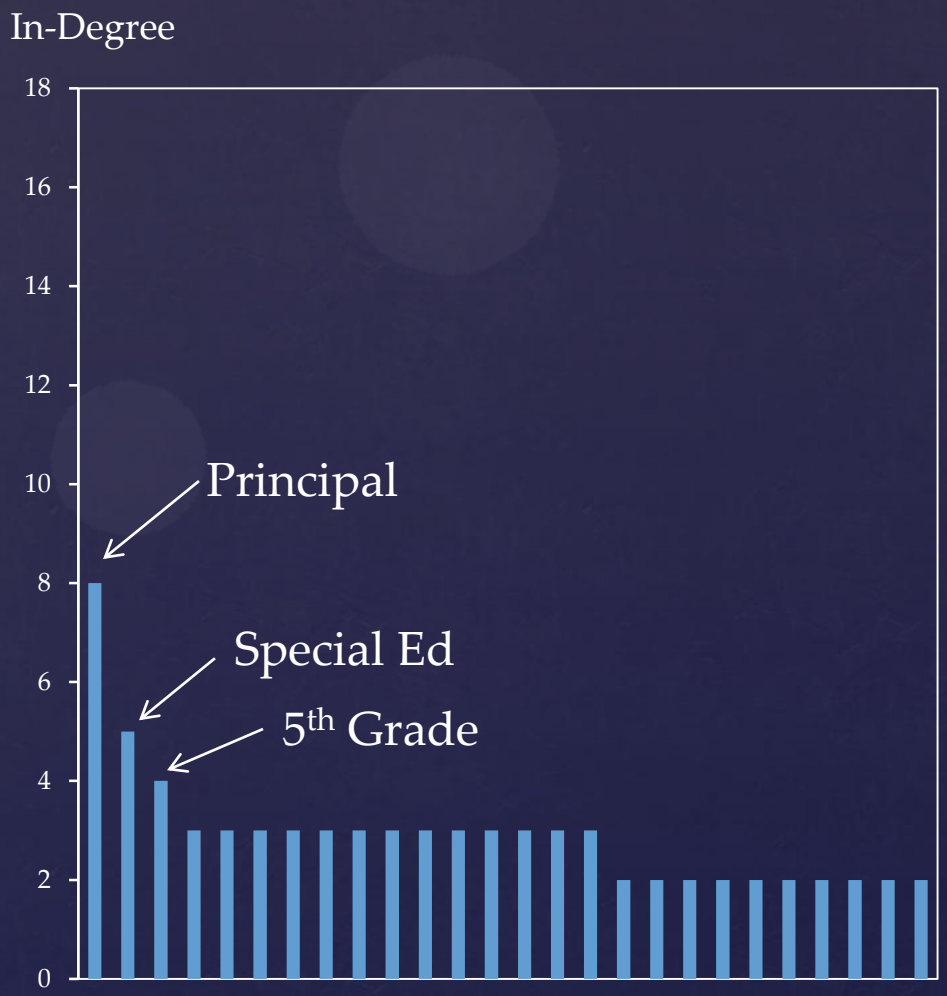
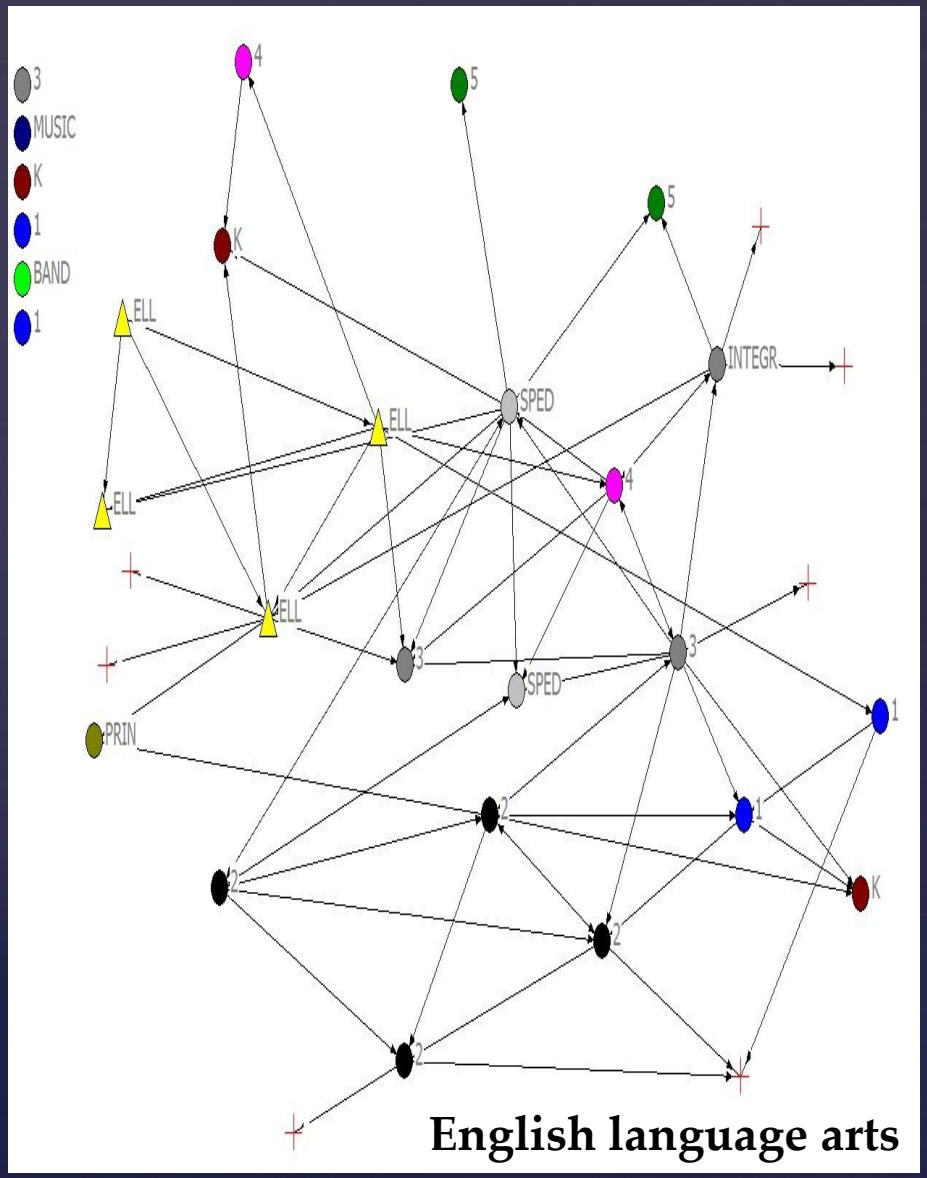
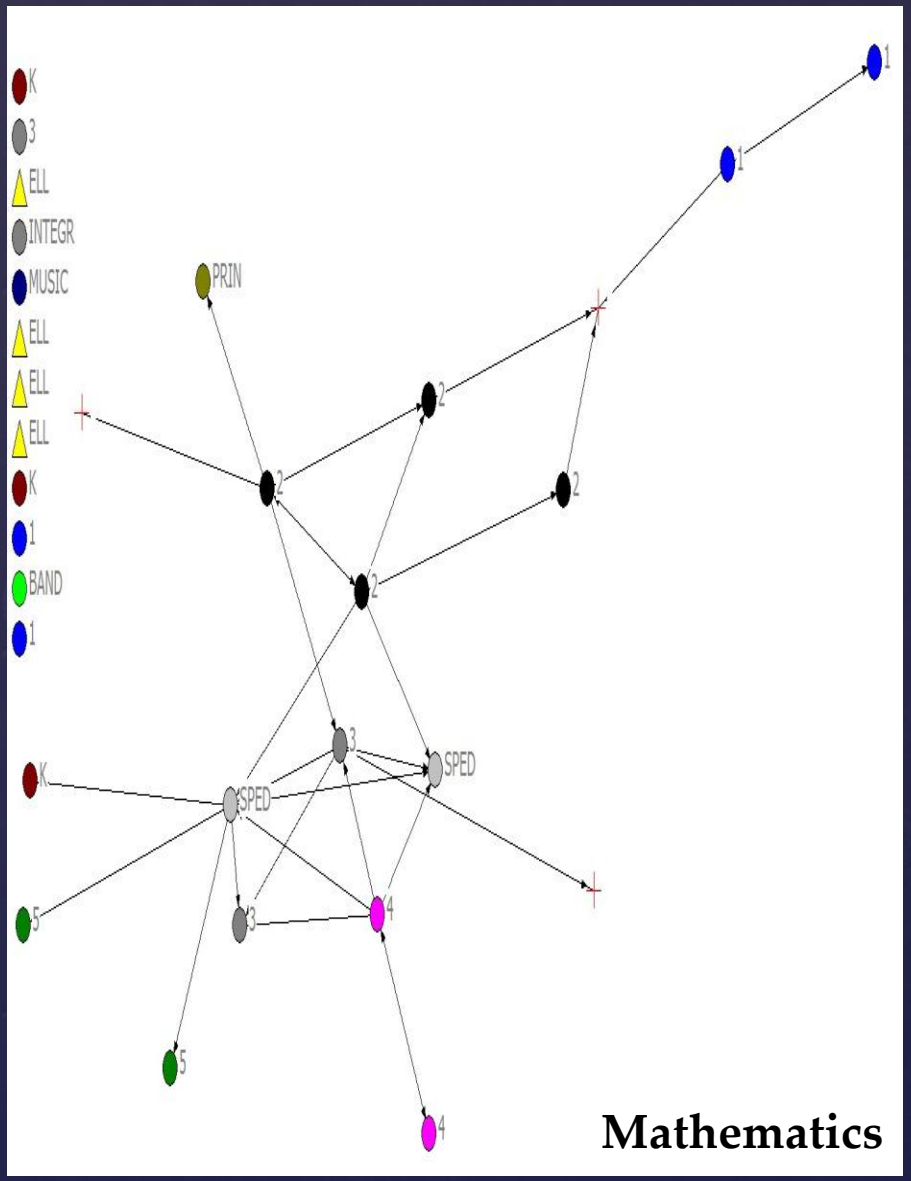
Leadership Distribution





Subject Matter Differences





Network Selection Modeling: Multilevel p2

The level 1 model is:

$$\log\left(p[\text{advice}_{ij}=1] \,/\, \{1-p[\text{advice}_{ij}]=1\}\right)$$

$$= \alpha_j + \beta_i + \delta_1 (\text{Prior relationship})_{ij} + \delta_2 (\text{Same race})_{ij} + \delta_3 (\text{Same gender})_{ij} + \delta_4 (\text{Common grade taught})_{ij} + \delta_5 (\text{Difference in professional development})_{ij} + \delta_6 (\text{Reciprocity: advice}_{ji})$$

Network Selection Modeling: Multilevel p2

The level 2 model is:

Level 2a (j: provider effect)

$$\alpha_j = \gamma_0^{(\alpha)} + \gamma_1^{(\alpha)} \text{New teachers}_j + \gamma_2^{(\alpha)} \text{Multiple-grade teachers}_j + \gamma_3^{(\alpha)} \text{Formally designated leaders}_j + u_{0j} .$$

Level 2b (i: seeker effect)

$$\beta_i = \gamma_0^{(\beta)} + \gamma_1^{(\beta)} \text{life/career stage}_i + \gamma_2^{(\beta)} \text{Professional development}_i + v_{0i} .$$