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Is The Team All Right? Depends on Who You Know

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Abstract

We report findings from a mixed-methods study analyzing the social networks of a group of Multiple-Subject pre-service teachers (PSTs) in one teacher education program along two dimensions: 1) *close relationship* and 2) *partners in equity conversation*. Our research was guided by the following questions: Do PSTs have equity conversations with those they are close to? Why or why not? We found that 28% (17/61) of the PSTs did not have equity conversations with anyone, and 16% (10/61) of the PSTs had equity conversations with those they are close to. Interviews indicated that some students sought relationships with those who shared their commitments towards social justice whereas other students had close relationships with a focus on engaging in social activities. These findings have implications for the ways in which administrators and teacher educators design programs to foster cohesive networks.

Keywords: teacher education program, cohort models, social network analysis, equity

Is The Team All Right? Depends on Who You Know

Fifteen years have passed since Ladson-Billings (2005) posed a simple question regarding the improvement of schools through teacher education, “Is the team alright?”. She asserted that “the real problems facing teacher education are the disconnections between and among the students, families, and community and teachers and teacher educators” (p. 229). To provide our own answer to this question, we studied the social dynamics of a smaller subset of the teacher education team; pre-service teachers (PSTs). In particular, we focus on the connections (or lack thereof) among PSTs and ask how relationships can motivate their commitments in becoming advocates for equity (Athanases & de Olivera, 2007).

We draw on a mixed-methods approach to analyze the relationships among one group of PSTs enrolled in a selective post-baccalaureate teacher education program that is situated in a large research university located in CA. We use social network analysis to systematically study networks among PSTs and conduct interviews to explore how some relationships foster conversations regarding equity and social justice in schools while others do not. In this way, we can provide an empirical answer on how to determine whether “the team is all right”.

Background

Social Capital and Social Network Theory

Researchers using a social network perspective focus on relationships between actors when studying social phenomena (Borgatti, Everett, &

Johnson, 2018; Borgatti & Ofem, 2010; Daly, 2010; Wasserman & Faust, 1994). A *social network* is comprised of a set of individuals (or *actors*) and the relations (or *ties*) among them (Wasserman & Faust, 1994). A key assumption of the network perspective is that ties between individuals act as channels for the flow of resources such as information or support (Borgatti, Everett, & Johnson, 2018; Wasserman & Faust, 1994). Moreover, the structure of the network provides insight as to how some individuals have more access to said resources than others (Lin, 2002; Wasserman & Faust, 1994). Studying teacher networks can provide insight into how relationships among peers provide PSTs access to beneficial resources.

The concept of social capital complements the understanding of networks (Baker-Doyle, 2011; Daly, 2010), and is one of the most drawn on exports from sociology used by educational researchers (Dika & Singh, 2002). Lin (2002) defines *social capital*, “as resources embedded in a social structure which are accessed and/or mobilized in purposive action” (p. 35). A network is a “social structure” where high levels of cohesion – the level of interconnectedness (Borgatti, Everett, and Johnson, 2018) – is an indication of high levels of social capital (Bridwell-Mitchell & Cooc, 2016; Lin, 2002). Cohesive networks increase the likelihood for successful action as resources are flowing freely along ties between actors. To achieve high levels of cohesion actors within the network need to value relationships with other actors and be willing to invest the time and energy needed to develop such relations.

Multiple Networks on Among a Set of Actors

Multi-relational networks are social networks in which multiple relationships exist among the same set of actors (Wasserman & Faust, 1994). As a consequence, different relationships offer an actor access to different types of resources. For example, emotional support can be a resource that gives rise to one set of relationships among actors while information resources can be the basis for a different set of relationships (Baker-Doyle, 2012).

In a school setting for example, a network that represents the flow of instructional resources among teachers might have a different set of ties than a network showing the flow of class management advice. The extent to which these networks overlap depends on whether individual actors associate with a limited number of colleagues who they share a variety of resources with or have a wide array of associations which serve particular purposes. On the other end of the spectrum, non-overlapping ties represent individual actors who do not associate with others along one or multiple relationships

We embarked on this study to determine the nature of social networks in a teacher education program. We were particularly concerned with whether peers served as resources for one another regarding becoming advocates for equity. Before discussing our hypotheses about peers as social justice resources, we briefly discuss social justice as a focus of teacher education.

School Improvement Through Social Justice Teacher Education

Across the U.S. many teacher education programs are embedding themes of equity and social justice in their curricula (Cochran-Smith, 2010; Zeichner, 2009). Researchers have documented the ways in which teacher education programs address PSTs' equity and social justice beliefs through coursework as well as individual experiences (Chubbuck & Zembylas, 2016; Cochran-Smith, 2010; Enterline et al., 2008; Mills, 2009; Mills & Ballantyne, 2010). Both administrators and teacher educators continue to explore and develop practices that can support and examine PSTs' beliefs of teaching for social justice (Reagan, Chen, & Vernikoff, 2016).

Given the attention that teacher education programs have in promoting social justice beliefs among TCs, we wondered the extent to which peers influenced one another in this regard. Researchers outside of education are studying how networks can effect changes in each other's beliefs and attitudes (Borgatti, 2005; Chamley, Scaglione, & Li, 2013). We hypothesized that some close relationships between PSTs could be based on shared commitments to social justice. Moreover, peers with strong social justice commitments might share their resources with others beyond their closest peers. In this case, those resources could include their own K-12 experience, their experience in their student teaching placements, the knowledge about structural inequalities that they may have learned in their course work, a way of talking about equity in schools, etc. We wondered if PSTs had relationships that involved the flow of resources and if so, if peers

tended to depend on those they felt “close” to for these resources or if they sought out others to converse with about equity issues.

Social Capital and Social Network Analysis in Teacher Education

Few studies have drawn on social network analysis to investigate the role of peer-to-peer relationships among PSTs to study teacher development with the exception being Liou et al. (2017). Researchers have taken interest in teacher relationships and teacher collaboration given its impact on school improvement and capacity building (Moolenaar, 2012), but limited research exists in understanding role of peer-to-peer relationships have on PSTs’ commitments to equity and social justice. We contribute to the limited body of work drawing on teacher development research to provide insight on the role of peer-to-peer relationships on teacher development.

While few have studied social networks among PSTs, scholars and policy makers have identified the importance of relationships among actors as a key force in improving schools (Baker-Doyle, 2012; Daly, 2010; Ladson-Billings, 2005; Moolenaar, 2012; Noguera, 2001). As stated earlier, teacher relationships act as channels for the flow of resources, information, or support (Baker-Doyle, 2012) and teacher networks can act as opportunity structures for PSTs to draw on resources for purposive action. For example, Baker-Doyle (2012) finds that first year urban teachers construct intentional professional networks as a way to collaborate and interact with selected individuals to solve issues. With respect to teacher education, the number of

relationships has been tied to performance (Liou et al., 2017); teacher retention (Moolenaar, 2012), and professionalism (Little, 2003).

Research Questions

To better understand how peer-to-peer relationships provide or constrain opportunities for PSTs to discuss their commitments to equity and social justice we ask the following research questions:

RQ: Do PSTs have equity conversations with those they are close to?
Why or why not?

Data Sources

Context for the Study

This study takes place at a selective post-baccalaureate teacher education program that is situated in a large research university located in CA. The program prepares between 120-140 prospective candidates for either multiple- and single-subject credentials each year. Candidates receive their teaching credential at the conclusion of one year of coursework & student teaching and have the option of completing a MA in their first year of teaching. The program embeds themes of equity and social justice into their curriculum to help teacher candidates develop foundational understandings to support them in becoming advocates for equity. The program utilizes a cohort model to facilitate administration and organization of coursework (Seifert & Mandzuk, 2006). The multiple-subject teacher candidates are placed into two cohorts: Cohort Red (N = 36) and Cohort Blue (N = 41); we are using pseudonyms. Both cohorts convene together in at least one class

each quarter. They have the remainder of their courses with others in their Cohort.

Participants

Teacher candidates matriculated into the program in summer 2018. The entire group was comprised of 77 teacher candidates of which 61 participated in the study (79%). Of the 61 participants there were 52 female, 8 males, 1 other. The race/ethnicity background is 5 African American/Black, 2 American Indian/Alaska Native, 12 Asian American/Asian, 15 Latinx/Chicanx, 23 Caucasian/White, and 5 Other/Declined to State. Of the 61 participants, 11 candidates pursued a bilingual authorization in addition to the multisubject credential.

Method

Network Data

Participants were asked to respond to five network questions, but for the purposes of this study, we focus on two networks:

SQ1: Of the cohort members, who are those with whom you have a 'close' relationship? By 'close' we mean a person with whom you share personal information and/or spend time within informal activities/settings.

SQ2: Please select the frequency of interaction with members of the cohort with whom you seek out to have conversations about equity, social justice, and diversity where you question the status quo and consider who is and is not being served by the existing curriculum and

pedagogy.

Each question asked individuals to identify who their close relationships are within the class of 77 PSTs. Individuals were instructed to not choose themselves. The first question asked individuals to identify other PSTs who they had a “close relationship with” they could choose as many individuals as they desired. The second question provided participants with four levels: 1 - Quarterly, 2 - Monthly, 3 - Weekly, 4 - Daily.

Social Network Analysis

Wasserman and Faust (1994) describes social network analysis as a “formal, conceptual means for thinking about the social world” through the use of graph theory and matrix algebra. A network is comprised of two pieces of information: the number of actors and ties. We draw on the methods from Wasserman and Faust (1994) and Borgatti, Everett, and Johnson (2018) for the analyses and in particular we tend to the direction of nominations.

Data for the equity conversation question was transformed so that Quarterly and Monthly responses were represented as non-ties, where Weekly and Daily responses were represented as ties. As a convention for this study, we will use *equity conversation* to abbreviate *at least weekly conversations about equity, social justice, and diversity where you question the status quo and consider who is and is not being served by the existing curriculum and pedagogy*. The first question generates the *Close Relationship Network* (CRN). The second question generates the *Equity*

Conversation Network (ECN). From these networks, we generated the overlap network which we will call *Close Relationship plus Equity Conversation Network* (CR+ECN). This is constructed by taking the Hadamard product (Horn & Johnson, 2012) of the CRN and ECN adjacency matrices.

A *sociogram* (or a *graph*) is a depiction of actors and their directed ties in two-dimensional space (Wasserman & Faust, 1994). A subset of a sociogram that involves a selected set of nodes and ties are called *subgraphs*. An *ego network* is a subgraph that consists of a focal actor (ego) and whom they nominated. We focus on two main methods to study relational patterns in networks: 1) the comparison of each actors' close relationship network and equity conversation network and 2) the *paths* between actors. For directed graphs, a path is a sequence of nodes that all follow the same direction (Borgatti, Everett, & Johnson, 2018). By comparing ego networks between actors we can gain insight into who are drawing on a set of individuals for resources embedded in close relationships, equity conversations, or both.

Cohesion will be operationalized through *network density*. Network density is calculated by the number of ties over the number of all possible ties. The density is calculated by $N(N-1)/2$ where N represents the number of actors. Densities are often reported as percentages as it represents the probability for two individuals to have a relationship.

Interview Data

We conducted interviews with 9 individuals. Each interview lasted approximately 45-minutes to 1 hour. Interview participants included: 3 African American/Black females, 3 White Females, 2 White Males, 1 Asian American/Asian female.

Each interview was transcribed. The analyses of each interview consisted of two-cycles (Saldaña, 2015). In the first cycle we searched for passages in which PSTs purposely drew on their relationships for emotional support, academic support, or supporting advocacy actions. Forms of advocacy actions included voicing their opinion in addressing issues in schools along some social category (race, class, gender, religion, ability, etc.). This was followed by a second cycle in which we wrote analytic memos for each interview to ensure that codes were configured appropriately; that is, our two-cycle process identified areas in which relationships supported advocacy actions.

We present excerpts of two individuals. The first is S19 who is an African American/Black female and the second is S58 who is a White male. Both S19 and S58 belong to Cohort Red. Our goal in juxtaposing their opinions around equity conversations is to highlight the ways in which they navigate the program through relationships.

Results

Analyses of Sociogram and Ego-Networks

Sociograms and density measures were generated from UCINET 6 (Borgatti, Everett, & Freeman, 2002). Figure 1 is the CRN, Figure 2 is the

ECN, and Figure 3 is the CR+ECN (See Appendix). These figures show the connections among all PSTs for the both CRN, ECN, and CR+ECN provide insight on the choices made by each teacher candidate. Figure 4 shows the directed subgraph of all the close relationships among S19 and S58 (See Appendix). This subgraph shows no direct path exists between S19 and S58. This implies that resources from close relationships or engagement in equity conversation does not flow between S19 and S58.

Both CRN and ECN show 22 individuals on the periphery, 16 of whom did not participate in the survey; 6 participated in the survey but did not nominate anyone with whom they have close relationships with nor whom they have equity conversations.

Ego-network analyses indicate that some PSTs do not have equity conversations with those that they are close to, while some have equity conversations with peers who they do not have a close relationship with. We report the following: 1) 33 PSTs listed more close relationships than those with whom they had equity conversations; 17 of the 33 PSTs did not list anyone with whom they had equity conversations, 2) 10 PSTs listed the same individuals as those they had close relationships and with whom they had equity conversations, 3) 11 PSTs listed someone outside of their close relationship network in their equity conversation network, 4) 7 PSTs had listed more individuals with whom they have equity conversations than close relationships.

Cohesion

Tie statistics can be found in Table 1 (See Appendix). The density for the CRN and ECN was 4.7% and 2.3% respectively. The difference in density measures along the CRN and ECN indicates that each network serves as different opportunity structures (Molm, Whitham, & Melamed, 2012); the uptake of resources embedded in close relationships are higher than that of resources embedded in equity conversations. Both Cohort A and Cohort B showed higher levels of cohesion when analyzed as separate subgraphs. The density measures for Cohort Red and Cohort Blue was 8.1% and 8.0% respectively for the CRN; 4.6% and 3.5% respectively for the ECN. Ego network analyses also supports this claim given that most individuals have more close relationship ties than equity conversation ties.

The tie statistics can be found in Table1 for the CR+ECN (See Appendix). This network represents the overlap ties between the CRN and the ECN. The density for the entire CR+ECN is 1.7%; which represents the probability to which individuals are having both close relationships and equity conversations. The density measures for Cohort Red and Cohort Blue was 3.7% and 2.8% respectively.

Advocacy Resources Through Relationships

PSTs share their perspectives and experiences with respect to advocating for equity in both informal and formal environments and for some, what they hear during class leads to friendships outside of class. S19, for example, talked about building friendships with individuals who shared her views about equity and social justice.

S19: So, S47 kind of initiated that [friendship] with me like she was just like “This is the role I want to play in your life.” Like, I was just minding my business. Like I was just speaking out in the class and she came up to me. A few others did this too. And that's how I can tell these are the teachers that are going to change students' lives and you can understand where I'm coming from what I'm trying to advocate for students and you're like, it's either a snap or just acknowledgement. Like I feel you, I'm on that same level. It's just like, “Okay, wow, we can be friends.”

S19 survey responses showed that she had close relationships with the PSTs that she had equity conversations with. These peers were from different cohorts.

Some students did not necessarily have equity conversations with others. S58 for example did not build their close relationships around advocating for equity and did not nominate any with whom they had equity conversations.

S58: When you start talking about equity it is more of a politics thing than anything else. So I'm not really a person that talks about politics with others, I just keep it to myself. I don't really see a reason to talk about it because everyone's going to have their own views like leaning one way or the other, but I definitely feel like everyone in the program like feels very similarly about it.

In particular, S58 avoids having discussions about equity and he equates such discussions with politics. He asserts that students feel similarly about equity which is an interesting claim since he avoids discussing the subject.

In contrast to S19, S58's close relationships were based on social activities not directly related to academic work as opposed to shared commitments.

S58: I'd say like close friends would be hang out outside of class without a work-related burden, like school-related [00:16:29] thing. So it's like seeing each other on your own time. I guess. [Interviewer: Or

no like School talk or anything like that or?] Not necessarily no school talk. We'll talk with just more. So like people you just hang out with I guess. Like going out and getting some drinks or like et cetera, that kind of thing.

As S58 indicates, he draws on his relationships as a means to hang out and unwind.

Both S19 and S58 acknowledge differences in cohort dynamics. There are two features to account for within each testimony. First, S58 provides insight as to why he does not have equity conversations. Secondly, S19 acknowledges a tension between Cohort Red and Cohort Blue which may be due to the differences in perceived value regarding equity conversations.

S58: Yeah. In like Cohort Blue, there's people that are very equity and social justice focused. Like, more so than I'd say everyone else in the program. You almost don't wanna say things unless you're those people because you're not on their level. It sounds weird saying it that way but if you just mention something or if you have a different view than them they're so outspoken that things would just not go in a direction you'd want them to go in the first place.

S19: I felt like we would probably get to know more people and create different friendships and things like that but I was with the same people [the] whole year. I feel like my experience would probably be different if I got to talk to other people. So I feel like that's something the [Institution] needs to work on. It's not splitting up Cohort Red and Cohort Blue like that. Because then you also had tension between Cohort Red and Cohort Blue.

The desire to build relationships with others across cohorts was important for S19. For example, S47 who is in Cohort Blue played an important role in S19's experience at program. Within S19's testimony she mentions how her "Blackness" was not well received by the individuals whom she shared a school site and cohort. S47, who is an African American female on the other

hand may provide resources that are beneficial to her racial and gender identities.

Discussion

Our research was guided by the following question: Do PSTs have equity conversations with those they are close to? Why or why not? In combining the quantitative and qualitative data we see that some PSTs, like S19, based their friendships on social justice commitments and tended to frequently have equity conversations with those that they were close to. Other PSTs, like S58, had close relations with peers who they never had equity conversations with. Furthermore, S58's interview indicated that he shied away from such conversations because he felt that he was not equipped to engage in them.

An implication of this study is that peers can serve as resources for one another to become advocates for equity, but this is more likely to happen when PSTs already hold social justice commitments. We believe that programs need to be more intentional about fostering equity conversations so that students like S58 can benefit from the resources that S19 has to offer. To determine whether or not the "team is all right", one must look at the cohesiveness of networks. Administrators and teacher educators may want to develop policies and practices that improve network cohesion.

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Appendix

Sociograms

Figure 1 - Close Relationship Network: Cohort Red (N = 36) and Cohort Blue (N = 41)

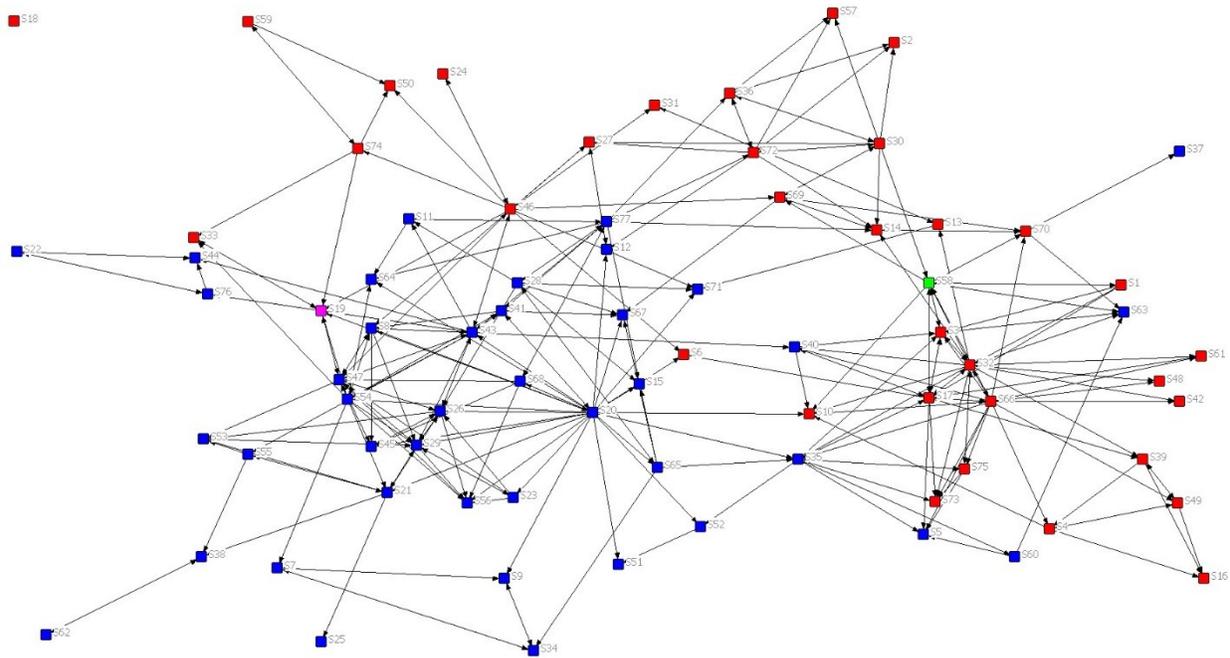


Figure 2 - Equity & Social Justice Network: Cohort Red (N = 36) and Cohort Blue (N = 41)

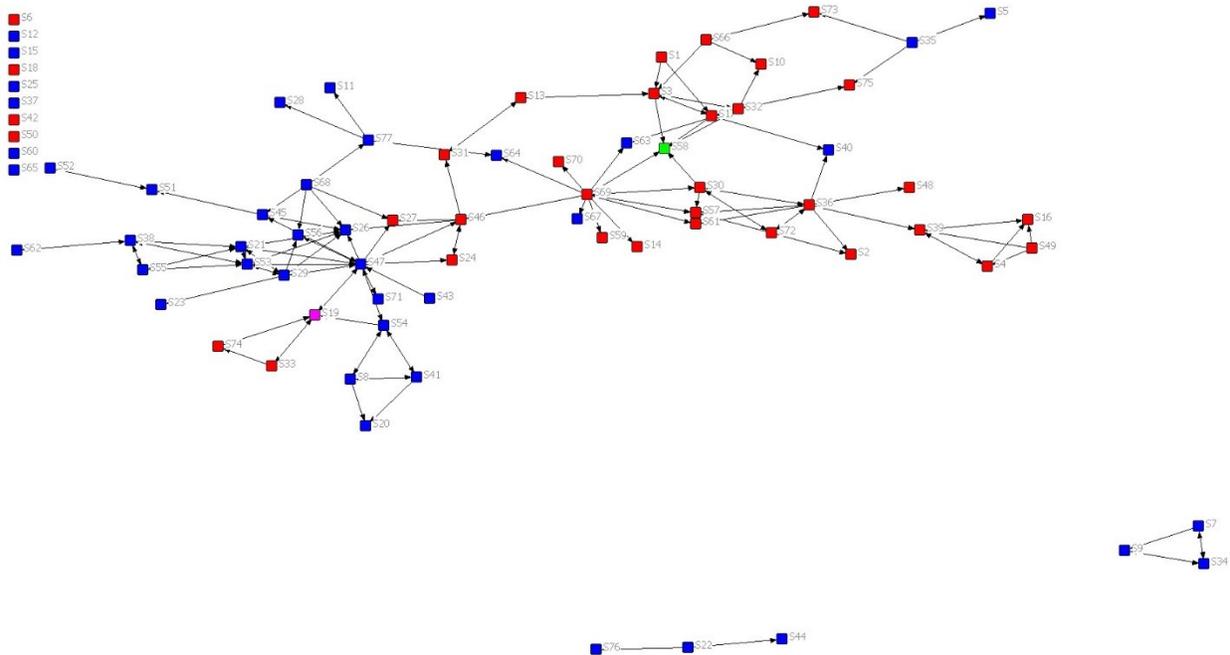


Figure 3 - Close Relationship and Equity Conversation Network Overlap

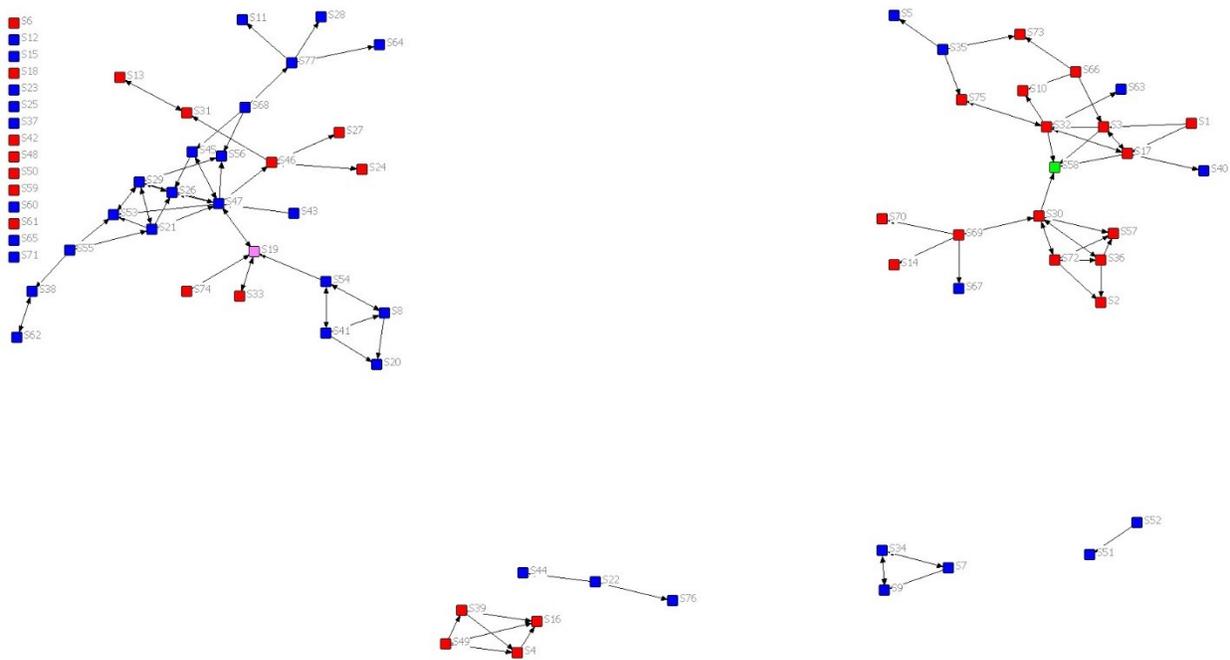
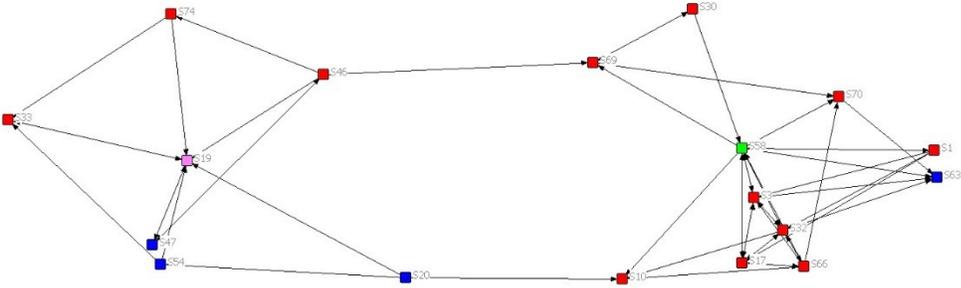


Figure 4 - S19 and S58 CRN networks



Cohesion

Table 1

Cohesion - Tie Statistics (RR represents ties among members of the Red cohort; RB represents ties between a member of the Red Cohort seeking a relationship with a member of the Blue cohort; BR represents a tie between a member of the Blue cohort seeking a relationship with a member of the Red cohort; BB represents ties among members of the Blue co)

	Possible Ties-Whole Group	Possible Ties- <i>Red</i>	Possible Ties- <i>Blue</i>	RR	RB	BR	BB
Network Close Relationship Equity	5852	1260	1640	102	24	19	131
Conversations Close Relationship	5852	1260	1640	58	8	8	58
+ Equity and	5852	1260	1640	47	4	5	46