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Abstract: This study determined triad (a mentor teacher and two student teachers) members' level of satisfaction (LOS) with paired-placement student teaching, focusing on mutuality and homophily to explore how triad relationships were linked to LOS. The constant comparative method was used to code interview transcripts and field notes. Results showed that of the six satisfied triads, five had mutuality, homophily, strong triad cohesion, and collaborative student teachers. Partially satisfied (four) and dissatisfied (two) triads experienced lack of mutuality and homophily, weak triad cohesion, and uncollaborative student teachers. Recommendations include providing formal training about triad relationships, considering mutuality and homophily when making placements, and placing weaker students in a solo experience.

Supervised field experiences are a critical aspect of teacher education, and over the last few years improving the quality of pre-service teachers' field experiences has become an important goal in preparing teachers (Latham & Vogt, 2007; Parsons & Stephenson, 2005; Smith, 2004; Young, Bullough, Draper, Smith, & Erickson, 2005). As teacher educators have explored meaningful ways to prepare student teachers, they have considered new models such as paired placement, by which two student teachers work with one mentor teacher (Bullough et al., 2002; Bullough et al., 2003; Goodnough, Osmond, Dibbon, Glassman, & Stevens, 2009; Nokes, Bullough, Egan, Birrell, & Hansen, 2008). Paired placement allows student teachers to be placed in quality field sites when adequate numbers of these placements are often not available (Nokes et al., 2008).

Paired Student Teacher Placements

Triad placements consisting of one mentor and two student teachers may provide an environment where communities of practice (Wenger, 1998) essential for effective teacher induction can be formed. Communities of practice are "groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this

area by ongoing interaction” (Wenger, McDermott, & Snyder, 2002, p. 4). Two means for developing teacher communities of practice in teaching are peer coaching and co-generative dialoging, both of which can be used in paired placement of student teachers (Goodnough et al., 2009). Peer coaching is “a training method in which pairs of students, student teachers, or classroom teachers observe each other and provide consultative assistance in correctly applying teaching skills and proposing alternative solutions to recognized instructional needs” (Wynn & Kromrey, 1999, p. 21). Co-generative dialoguing (Roth & Tobin, 2002; Tobin & Roth, 2005) is the practice of having all co-learners (e.g., mentor teachers, student teachers, and university supervisors) meet to discuss lessons taught by student teachers, along with other relevant aspects of teaching (e.g., different teaching methods). Such collaboration promotes teacher efficacy (Nokes et al., 2008), and peer coaching holds promise for encouraging teacher development (Le Cornu, 2005).

Paired placement teaching may take several forms. One approach is co-teaching, which involves all co-learners (mentor teachers, student teachers, and university supervisors) collaborating as they plan, teach, and debrief (Roth & Tobin, 2002). (Any combination of the student teachers, mentor teacher, and the university supervisor may teach together.) Another approach has student teachers working in pairs, collaboratively planning and debriefing to support one another, but teaching individually. Goodnough et al. (2009), for example, found that when no prescription was given to paired student teachers, three of four dyads chose to engage in individual teaching (one teaching and the other acting as a critical friend), even though two of these three dyads initially began their student teaching experience as co-teachers.

Paired placement of student teachers has been found to have several benefits. Student teachers were more confident (Goodnough et al., 2009; Nokes et al., 2008) and were more efficient planners (Goodnough, et al., 2009). These students were also willing to take instructional risks (Bullough et al., 2002) and engage in on-going conversations about teaching—thus learning how to collaborate to improve their teaching (Bullough et al., 2003). Mentor teachers observed that student teachers learned from and supported each other (Bullough et al., 2003; Goodnough et al., 2009). In addition, mentor teachers who worked with the student pairs were more flexible in planning with these student teachers and expressed more trust in them (Bullough et al., 2002).

Some disadvantages of paired student teacher placement were also found. Some student teachers asserted that the pairing is not a realistic classroom situation, and planning takes more time (Nokes et al., 2008). Goodnough et al. (2009) found that student teachers felt a loss of teaching time and of individuality, and they experienced competition with their partners. Additionally, some mentor teachers thought some student teachers depended too much on each other; they also expressed concern about the inequality in student teachers’ abilities. Finally, a few mentor teachers did not feel fully connected to the paired student teachers.

In these previous paired placement studies, several relationship issues surfaced as student teachers worked with their mentor teacher in a triad: the mentor teacher was often used as a last resort when student teachers couldn’t solve problems; the mentor teacher often acted as a mediator between the student teachers to help them collaborate; and some mentor teachers avoided the emerging tension between student teachers by not encouraging collaboration (Nokes et al., 2008). We were interested in the extent to which relationship issues affect the overall satisfaction with the paired placement experience in student teaching. We chose to explore interactions within triads through the lens of social network theory (SNT).

Social Network Theory

SNT has a long history of use in studying relationships among people (Katz & Powell 1955; Moreno & Jennings, 1938). According to SNT, a network is a set of nodes (representing individuals) drawn on a map showing the relationships (ties) connecting the nodes. Each triad is composed of three dyads, and between the individuals in each pair the choice to connect may or may not be reciprocated.

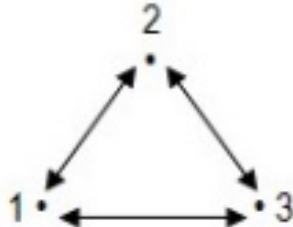


Figure 1 Sociogram of three mutually-related nodes

Figure 1 represents triad members who have reciprocity or mutuality; therefore the relationship is directional (shown by the arrows). When relations are reciprocal, they involve give and take between two parties, and power or asymmetry in the relationship is of minimal or no consequence (Granovetter, 1973; Kadushin, 2012; Wasserman & Faust, 1994). In referring to mentoring, Carden (1990) suggested that the learning is mutual. So the mentor teacher-student teacher relationship can be a close one, though guided by professional norms.

Socially interesting aspects of networks occur when the concept of homophily is introduced. This concept, introduced into social theory by Lazarsfeld and Merton (1978 [1954]), is represented by the saying “Birds of a feather flock together.” If two people have similar characteristics, they are more likely to be connected than people who have nothing in common (Verbrugge, 1977). The converse is true: Two people who are connected are more likely to have common characteristics than two people who are not.

There are two kinds of homophily. First, common value norms may bring nodes with common attributes together, or the reverse may occur and common attributes and contacts may lead to common norms (Burt, 1982). So if people spend time together, they are likely to have the same attitudes, and if they have the same attitudes, they tend to spend time together (Erickson, 1988). A second basis for homophily is structural location. Two people may have the same attributes because both function in the same environment, and the opposite is true (Feld & Carter, 1998). When the attributes of a pair are more similar, there is a greater likelihood of there being a flow between them, such as the sharing of ideas (Kadushin, 2012).

Research Questions

Considering these aspects of SNT, we developed the following research questions:

1. What is the overall level of satisfaction (LOS) expressed by student teachers and their mentor teachers towards the paired placement model of student teaching?
2. How are triad relationships linked to triad members’ LOS with the student teaching experience?
3. What are the implications for future paired-placement of student teachers?

Method

Context

The current study was conducted at Brigham Young University, a private university in the Western U. S. with institutional review board approval. A 14-week student teaching assignment is the culminating experience of the four-year Physical Education Teacher Education (PETE) program at the university. During this study student teachers were placed in pairs in schools (six high schools, five junior high schools, and one elementary school) in three school districts. The minority percentage of public school students ranged from 10 to 34 percent in the high schools and from 12 to 31 percent in the junior high schools; it was 16 percent in the elementary school. The percentage of students from low-income families ranged from 26 to 46 percent in the high schools and from 24 to 46 percent in the junior high schools; it was 47 percent in the elementary school. All of the schools had been used by the university for student teaching placements in the past. All but two of the mentor teachers were experienced mentors.

Participants

Twenty two PETE students were assigned to work in pairs; then each pair was assigned a school and mentor teacher for the semester. The one exception was a pair that worked for seven weeks at an elementary school and then for seven weeks at a junior high school, thus having two mentor teachers and participating in two triads (labeled Triad 1a and Triad 1b in Table 1). Thus a total of 12 mentor teachers participated in the study. All student teachers and mentor teachers volunteered to participate.

All student teachers were acquainted with one another, as they had taken multiple university courses together. The mentor teachers were all experienced physical education teachers. Of the 11 triads of teacher and students, six taught in a high school, four in a junior high school, and one in both a junior high school and an elementary school during the semester.

The PETE student teaching coordinator assigned students into pairs and then to a mentor based on perceived common attributes and/or values where possible. The eight male student teachers were assigned to four male mentor teachers. The remaining fourteen student teachers and their eight mentor teachers were all female. Five university supervisors were assigned to triads based on the same commonalities. The student teaching coordinator then reviewed the assignments with the PETE program coordinator and a few triad members were reassigned. Both coordinators were also supervisors.

Procedures

The student teachers had previously co-taught with a peer during K-12 field experiences in three teaching methods courses. To facilitate further progress, prescription for the student teaching experience included the following: (a) individual teaching (one teaching the lesson with the other observing), (b) co-planning, and (c) peer coaching. Individual teaching was selected by the researchers, as we felt it more closely resembled the solo teaching of a traditional student teaching experience. The researchers wanted to see if individual teaching combined with co-planning and peer coaching would create a beneficial community of practice for triad members.

Prior to the beginning of student teaching, the student teaching coordinator instructed student teachers to teach lessons individually, alternating throughout each day. They were to plan lessons with their partner, based on research recommendations by Nokes et al. (2008). After both had taught a lesson, they were to participate together in an evaluation session, a formal learning activity recommended in research done by Goodnough et al. (2009) to encourage peer coaching. During this session the observing peer was to give constructive feedback to the other student teacher. Finally, student teachers were asked to hold a daily evaluation session as a triad with their mentor teacher. Based on the work of Martin (1977), who showed that mentoring is idiosyncratic, mentor teachers were encouraged to develop their own way of working with the student teachers to create a beneficial experience for them within the specified parameters of the study.

During student teaching, university supervisors observed their students teach at least every two weeks. While one student taught, the supervisor observed the lesson with the other student and engaged in evaluative dialogue. The same procedure was followed in the next lesson as the students reversed roles. After both lessons, the supervisor met individually with each student and then with the triad to discuss pedagogical issues, including ways students could help each other in both planning and evaluating each other's teaching, as well as giving suggestions for working effectively with each triad member. Supervisors took field notes of their observations during these experiences.

Student teachers met every two weeks at the university during school time for a two-hour seminar conducted by the student teaching coordinator. In these sessions they received information to help them with the student teaching experience and to help prepare them for the workplace after graduation. The first 15 minutes of these seminars consisted of a debriefing session in which student teachers discussed their teaching successes and challenges. The remainder of the sessions focused on the following topics: (a) modifying unit plans they had created in teaching methods courses to make them more appropriate for their current K-12 students, (b) gathering assessment data for the unit plan, (c) creating a resume, (d) uploading and evaluating film footage of their teaching to help improve teaching skills, and then using digital video editing software to database desired competencies to fulfill a university assignment, (e) preparing an employment portfolio, (f) developing interviewing skills and practising these with a peer, (g) participating in mock interviews with an administrator and physical education teacher from one of the local school districts, and (h) evaluating PETE students' fitness levels.

Data Collection

Using interview data and field notes, the researchers examined triad relationships and student teachers' satisfaction with their paired placement for 22 pair-placed student teachers and their mentor teachers. Several data collection methods were used in the study:

1. *Semi-structured interviews at the end of student teaching.* Four researchers, not involved with the students during their student teaching, conducted individual 45-minute interviews with the student teachers and mentor teachers. We used questions from the protocols created by Nokes et al. (2008) for these interviews: for example, "How do you get along with your mentor and partner?" Interviewers were given the same instructions on how to conduct the interviews to standardize their approach and minimize bias. Triad

members were interviewed by the same individual. All interviews were audiotaped and then transcribed.

2. *Field notes of school visits.* Two members of the research team were university supervisors of the student teachers. During their visits (minimum of six) to the schools to observe the students' teaching, the researchers took field notes of their observations regarding triad relationships and their effects on triad effectiveness.
3. *Semi-structured interviews of the interviewers.* The interviewers took field notes of their observations during the interviews with the student teachers and mentor teachers. The interviewers were in turn interviewed as a group by the other researchers to gain further insight into the nature of triad relationships and subsequent effects of those relationships. The interviews were audiotaped and transcribed.

Data Analysis

To determine the level of satisfaction of triad members, one of the interview questions asked student teachers, "If you could go back and do it all over again, would you prefer to work with another student teacher or just a mentor teacher and no teaching partner?" A similar question for mentor teachers was "Do you prefer working with one student or two?" If triad members preferred paired placement to a solo experience, they were labeled as *satisfied*. If they liked paired placement but would also have liked a solo experience, they were labeled as *partially satisfied*. If they would have preferred a solo experience to paired placement, they were labeled as *dissatisfied*. Points were allocated for each of these categories (*satisfied* = 3 points, *partially satisfied* = 2 points, *dissatisfied* = 1 point). To determine overall triad satisfaction, an average score of triad member ratings was calculated.

Member checking, or respondent validation (Creswell, 2007), corroborated the research findings with feedback gathered from the research participants during the interview process and after the conclusion of the study (via phone or e-mail) to increase the credibility and validity of the study. Mentor teacher and student teacher names were changed in reported data to assure anonymity. An inductive content analysis (Lincoln & Guba, 1985) was used to analyze the transcript data from the interviews and field notes. The constant comparative method (Lincoln & Guba, 1985), a process of categorizing (Glasser & Strauss, 1967), was used to compare and contrast each information unit with other information units, linking those with similar meaning (Glasser & Strauss, 1967; Patton, 1980).

To increase credibility and manage researcher bias, the research team engaged in reflexivity: reflecting on their own points of view by keeping field notes and engaging in dialogue with peers (Johnson & Waterfield, 2004). They also used triangulation strategies to ensure credibility (Denzin & Lincoln, 2000). First they triangulated using various forms of data collection, including interviews and field notes, and asked student teachers and mentor teachers similar interview questions that had been used in a previous study (Nokes, 2008). Second, investigators triangulated by involving several researchers in data collection and analysis, providing multiple perspectives and thus reducing the likelihood of data misinterpretation.

To increase auditability, one of the researchers not involved in the initial analysis assumed the role of peer-debriefer to help clarify the primary researcher's interpretation of the data. Two researchers who had no prior involvement in the study performed the inquiry audit (Lincoln & Guba, 1985) to independently assess the findings.

Results

Table 1 shows the level of satisfaction (LOS) of individual triad members and of the overall triads. Six triads were satisfied with the paired placement of student teachers, four were partially satisfied, and two were dissatisfied. Table 1 also shows the nodes in each triad, indicating whether mutuality existed among triad members.

Triad	Names	Individual LOS	Overall Triad LOS	Triad Nodes
1a	1. Annie 2. Rebecca 3. Caroline (MT)	S S S	Satisfied	
1b	1. Annie 2. Rebecca 3. Jennie (MT)	S S PS	Satisfied	
2	1. Joe 2. Isaac 3. Kent (MT)	S S S	Satisfied	
3	1. Danielle 2. Mikayla 3. Lindsay (MT)	D PS D	Dissatisfied	
4	1. Lisa 2. Madison 3. Catherine (MT)	D D D	Dissatisfied	
5	1. Kate 2. Bridget 3. Amanda (MT)	D PS S	Partially Satisfied	
6	1. Heather 2. Ana 3. Bethany (MT)	S S S	Satisfied	
7	1. Josh 2. Jason 3. Gilbert (MT)	PS PS PS	Partially Satisfied	
8	1. Nataly 2. Lori 3. Katelin (MT)	S S S	Satisfied	
9	1. Spencer 2. Wes 3. Kirk (MT)	S S S	Satisfied	
10	1. Brittany 2. Traci 3. Ariel (MT)	PS PS PS	Partially Satisfied	
11	1. Will 2. Tom 3. Jack (MT)	S D PS	Partially Satisfied	

Table 1 Level of Satisfaction (LOS) with Paired Student Teaching Experience

Based on the inductive content analysis of triad member comments, a global theme became apparent related to LOS: triad cohesion. Categories placed under this theme applied to whether triads were satisfied or were partially satisfied/dissatisfied with paired placement. We will first address categories that were pertinent to the satisfied triads.

Satisfied Triads

Five of the six satisfied triads had strong triad cohesion (Triad 1b being the exception). Cohesive environments had developed when triad members had homophily and/or mutuality with one another, and the mentor teacher followed what we termed an effective hands-on to hands-off continuum in working with the student teachers in the triad. That is teaching, management, and planning responsibilities were transferred from the mentor teacher to the student teachers at an appropriate pace and the mentor was available and supportive as recommended by (Feiman-Nemser & Remillard, 1996; Hamel & Jaasko-Fisher, 2011; Odell, 1990). The relationships between these factors are illustrated in Figure 2.

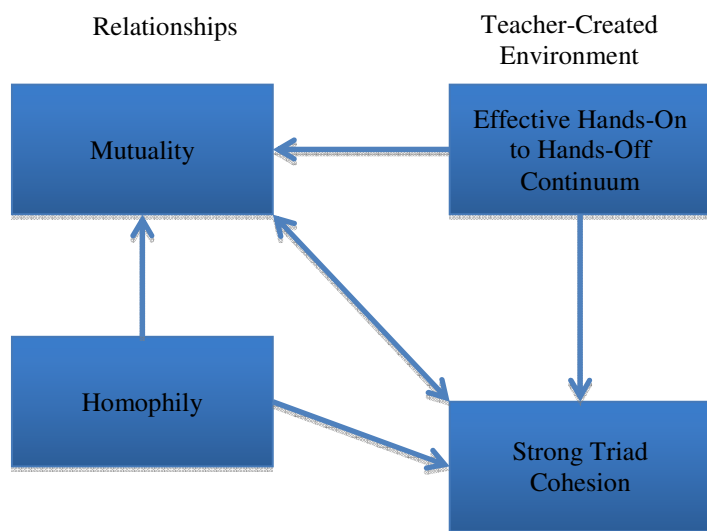


Figure 2: Satisfied Triads (except Triad 1b)

Homophily

Having attributes or values in common (homophily) with other triad members was recognized as a reason for strong cohesion in five of the six satisfied triads (except Triad 1b). One student teacher, Wes (Triad 9), commented on his similarities with his student teaching partner:

Spencer and I are both really laid back, so we didn't ever really have any issues. If there was a bad pairing of someone who's more laid back and

someone who is more type A [very organized, high-achieving, impatient], it could be a difficult situation.

The following comment by Katelin, the mentor teacher in Triad 8, shows her feeling that homophily, in the form of similar attributes and approaches to teaching, was a reason for the cohesive nature of her triad:

I've known Lori [one of the student teachers] for three years. We get along great. I was really excited when I found out I was getting her because our personalities are a lot alike, and she was excited to bring Nataly [other student teacher] because she had known her. We all got along really well. Our personalities are a lot alike . . . pretty easy going, laid back, able to make adjustments, willing to bend and flex . . . that's how they were, which was really great. I don't know what I would do if I got somebody that was not like that.

Two of the interviewers described observations regarding homophily. One interviewer mentioned that while interviewing her assigned student teacher dyads, she found that all of the male student teachers got along with each other. Another interviewer noted that female student teachers seemed to place more importance on making a connection with one another.

Triad 1b was the only triad in which homophily wasn't evident in the form of similar attributes or values. The mentor teacher, Jennie, did not perceive a problem, but both student teachers concluded that Jennie did not value meeting with them, as she was absent a great deal of the time when they were teaching, and she did not conduct the required triad meetings. When homophily was present in a triad, mutuality/reciprocity developed. This was illustrated in Triad 8: Both student teachers felt they learned so much from each triad member, and the mentor teacher commented that they were all learning together.

Mutuality

In examining the relationship between student teachers, reciprocity in the form of giving support and collaborating was evident in five of the six satisfied triads (absent from Triad 1b). Comments from members of Triad 6 illustrate this reciprocity. The mentor teacher, Bethany, commented about her student teachers, who had homophily in the form of common values rather than common attributes: "Their relationship with each other is very positive. They work very well with each other. Even though their personalities differ quite substantially, they get along with each other very well and [each brings] to the table a different perspective." Heather, one of Bethany's student teachers, expressed their positive relationship with their mentor teacher: "She's been awesome. I really don't have any complaints. She's been very supportive." Power in the relationship between Bethany and her student teachers seemed to be no problem due to the positive environment. Bethany illustrated this as she gave her perspective on the triad relationship:

Our relationship is very positive. I think all three of us feel very comfortable with each other, are honest with our feelings and how we feel things are going. We can be up front, especially when it's not so good, and still discuss those things in a positive, constructive way.

In the triad consisting of Bethany and her student teachers, mutuality helped create a cohesive environment; the same was true with five of the satisfied triads. Such a cohesive atmosphere helped generate further reciprocity in the form of collaboration. All student teachers

had been instructed to plan lessons together. Satisfied student teachers found the planning sessions to be an opportunity to generate new ideas as they brainstormed ways to create lessons and improve their teaching. Heather elaborated, “We bounce ideas off each other as we plan the lesson so [the other student teacher] can make note of it in an activity or I may. And if I like what she presents I’ll do it as well.”

All five student teaching dyads and five of the six mentor teachers who were classified as satisfied embraced the role of peer coaching and engaged in co-generative dialog, giving productive feedback to the student teacher after a lesson and during triad meetings. The remaining mentor teacher (Jennie, Triad 1b) felt she embraced this role, but her student teachers would have liked more feedback.

Student teachers found their partner to be particularly helpful with support and feedback after a lesson had been taught. One student teacher, Nataly (Triad 8), illustrated the benefit of having another student teacher as she commented,

It’s been awesome to have three minds and the chance to learn from those two other people, to see how Lori [student teacher] teaches, to see also how Katelin [mentor teacher] teaches. And when I am stumped, I’ll say, “Lori, what would you do?” because Katelin isn’t always there. And she’ll have ideas so we really feed off each other. . . . Plus, I thought it was really good because sometimes Lori would say “I didn’t think that went very well,” and they’ll be things that I didn’t even notice. So I thought it was a really helpful thing.

The mentor teachers often benefited from this collaboration, which created a sense of mutuality for them. Bethany (Triad 6) stated,

I think I really prefer the two [student teachers] for that other set of eyes and for the dialoguing that those two can do together and, this is kind of selfish, but for how they can enhance my teaching. The ideas they bring that I can incorporate. Freshen up some lessons that are a little dry.

Effective Hands-On to Hands-Off Continuum

This category emerged based on field notes of observations by university supervisors as they made visits to watch their student teachers teach, as well as from comments of triad members. As time passed most mentor teachers in satisfied triads were observed to be available, supportive and move effectively from a hands-on approach where they had more control over aspects of their classes (e.g., teaching, management, and lesson content) to a hands-off approach where they allowed student teachers to have more control and be more creative. This shift reflected a trust in their student teachers and therefore a willingness to give them more autonomy. Four student teacher dyads (Dyads 1a, 2, 6, and 8) observed this effect, which is illustrated by Ana’s (Triad 6) comment:

We started off with observing [our mentor teacher], and she told us what she wanted us to do at first because it was her class obviously. But then we were able to put our own spin on it, so she helped us develop our teaching skills while learning how to teach and be effective in the class.

This effective move to a more hands-off approach by mentor teachers led to a more cohesive atmosphere among triad members and to mutuality. The mentor teacher in Triad 1a, who had a good hands-on to hands-off continuum, stated that after a couple of weeks the student

teachers felt comfortable with their teaching, and she observed them working well together and commented on how helpful she found it to see the ideas they created.

Dissatisfied or Partially Satisfied Triads

We can learn much from the results of the triads that were dissatisfied or partially satisfied. These triads had weak triad cohesion, which seemed to be related to a lack of homophily and/or mutuality, an ineffective hands-on to hands-off continuum in teaching (where teachers were not always available and supportive plus management and planning responsibilities were not transferred from the mentor teacher to the student teachers at an appropriate pace), and student teacher inequality in confidence and/or competence. These difficulties resulted in a breakdown in one or more of the relationships among triad members. The interaction of these factors is illustrated in Figure 3.

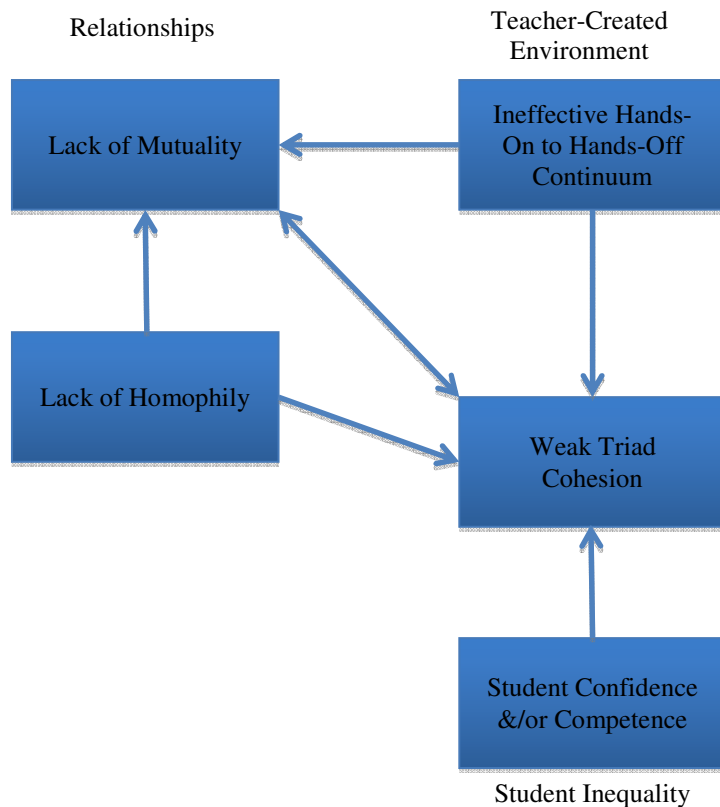


Figure 3: Partially Satisfied and Dissatisfied Triads

Lack of Homophily

Lack of homophily contributed to weak triad cohesion in all partially satisfied and dissatisfied triads. Differences in attributes or values caused problems. When asked if there were personality conflicts with her partner student teacher, Kate (Triad 5) responded with a comment that included all members of the triad:

I just feel like [the other student teacher's personality is] too high-strung for me. If I had somebody that worked the same way that I do and was more on the same page as far as going about style of teaching and stuff, it would have been easier to handle working with the mentor teacher because she was kind of stressful. But getting two different kinds of stress from [student teacher and mentor teacher] was just too much.

A generation gap between the student teachers and the mentor teacher sometimes caused a lack of homophily regarding attitudes towards teaching styles. Jason, a student teacher in Triad 7, stated,

I respect [my mentor]. I don't know how well we get along just because there's a big generation gap between [us]. He's older. I think we have different styles of teaching and methodologies, but I respect him a lot and I think he respects me too.

Occasionally the lack of homophily between student teacher and mentor teacher was experienced by only one of the student teachers. In Triad 4, Madison, a student teacher who had attended her placement school as a child and knew the mentor teacher, lamented,

So this cooperating teacher and I already kind of had a good relationship. My partner and I had a good relationship, but [my partner and the cooperating teacher] didn't already see eye to eye. . . . My partner always felt like the cooperating teacher was getting mad at her all the time or giving her negative feedback all the time, so I was kind of stuck in the middle. . . . Overall, I think, a lot of the time I found myself in a situation where I was wishing I was teaching by myself. A lot of that probably came from the stress I felt of being caught in the middle.

Lack of Mutuality

In examining the relationship between student teachers, reciprocity was lacking in one of the partially satisfied triads (Triad 5) and the two dissatisfied triads (see missing ties between nodes in Table 1). In these student teacher dyads a lack of give and take (resulting from a lack of homophily) was evidenced in different attitudes towards teaching, with a detrimental effect. Referring to the other student teacher, Danielle (Triad 3) stated,

She was really more loose in her teaching style, so when we had to plan units together so we'd be on the same page, it was just completely opposite to what I wanted to do. And then also, she's less athletically inclined, so when I'd want to do things that would maybe test more athletic ability, it would be really hard because she'd fight me on it.

In considering the relationship between student teachers and mentor teachers, the asymmetrical nature of the role of mentor teacher and student teacher was obvious in all partially satisfied and dissatisfied triads. One mentor teacher would often interrupt the student teachers as they were teaching and take over the class. Kate, one of the student teachers in Triad 5, commented,

I would feel better if she didn't interrupt my teaching. She just has a tendency to interrupt in the middle, and it's things that are important, but not that I necessarily need to know right that second when I'm in the middle of trying to do something . . . I feel like sometimes I'm getting

evaluated on how well I can teach like she teaches, not on how well I can teach.

The lack of mutuality in dissatisfied and partially satisfied triads contributed to weak triad cohesion. Such an atmosphere caused further lack of reciprocity by damaging collaboration. Uncollaborative behavior was observed in student teachers who did not plan together (three dyads) and expended unequal effort during student teaching (five dyads). However, only the student teachers in Triads 3 and 5 had difficulty providing feedback for one another due to lack of mutuality which was caused by lack of homophily.

Failure of collaborative planning. In Triads 3 and 4 most of the lesson planning was done by one of the student teachers. One of the student teachers, Madison, (Triad 4) recalled,

I'm the one who's mostly doing the lesson planning. . . . I felt like a lot of the time I was doing most of the work and she was kind of just floating along right behind me, not really putting forth the effort that I'm sure she would have had to if I hadn't been there. . . . I don't think the tension really showed up until the cooperating teacher realized that I was the one turning in the lesson plans every day and the partner teacher wasn't. And I think that's kind of what sparked it to the point where the cooperating teacher all of a sudden was starting to find everything that my partner teacher was doing wrong and would get upset with her.

In Triad 3, collaborative planning ceased entirely. Danielle, one of the student teachers, was really irked by the difference in teaching styles between her and the other student teacher, Mikayla.

I told [Mikayla] the second week that we're not [planning] together. Because I'd say, "OK, this is how we should progress," and the different sports that she didn't really know . . . I don't know, maybe she felt like I was patronizing her, but she would jump through skills and I thought, "You have to progress in a certain manner, you can't just jump from a pass to kicking a bicycle kick soccer ball." So I told her, we don't have to teach the exact same thing. So after literally arguing every day for two weeks, I just said, "Look, you just do your thing, I'll do my thing."

Unequal efforts of student teachers. Some student teachers put forth unequal amounts of effort, contributing to an uncollaborative environment. In Triad 3, Mikayla, the partner just described, left each day at 12:30 to go to a coaching job, which irritated Danielle, who was already stressed about the problems between them:

I'm the one that's putting the equipment back, doing the laundry, [and] cleaning the locker room. I'm the one doing all the make-up tests and the make-up fitness testing And then on top of that, for the first few months she would literally just copy my lessons. She wouldn't write anything on the board, like the cues for anything, and I'd have mine written down, and then I'd come back into the gym and she'd have the same thing written on her board. It's just like . . . if I weren't there, if she

were by herself, [Lindsay, the mentor teacher] wouldn't just let her leave in the middle of the day. So I'm just actually outraged about this.

The interviewer of Triad 3 mentioned that as upset as Danielle was with the situation, it wasn't possible to tell from the interview with Mikayla that she and Danielle didn't get along.

Ineffective Use of Hands-On to Hands-Off Continuum

This category emerged in dissatisfied or partially satisfied triads, based on student teacher comments and university supervisor observations. Student teachers criticized mentor teachers for one or more of the following: being controlling, giving inadequate feedback, being absent, and having unclear expectations. These problems led to weak triad cohesion and lack of mutuality.

Controlling mentor teacher. Two student teacher dyads (5 and 10) thought their mentor teacher was not willing to relinquish control of classes due to a lack of trust in their abilities. Bridget, a student teacher from Triad 5, remarked,

I'd say she tries to keep too much control of the classes, so it makes it a real difficult time to actually teach and have the students connect with you as the teacher. There's a lot of confusion with the students as to who really has the power and authority to do things.

Her fellow student teacher, Kate, complained,

It's not anything left up to us. Their dance routines are taken from the aerobics class which she teaches. . . . I think she would think that we just ruined her whole class if we tried to teach that class . . . so it's fine but they've done tons of dances in that class, and I think it would have been fun to pick which ones are cool and stuff. But she says that we'll teach [particular] ones.

Inadequate feedback. Four mentor teachers (from Triads 3, 4, 7, and 11) gave limited feedback to student teachers throughout the experience. In Triad 11, Jack gave little feedback to Tom because he felt Tom was relying too much on the other student teacher, and Jack felt Tom needed to become more self-reliant. Tom found this frustrating as he tried to deal with problems:

Generally speaking I try and solve it myself. On occasion I [tried] to talk to Jack and see what his input was, but most the time he'd say, "Well, what do you think you should do?" So I learned real quick to basically not ask him for his help. Because I'd ask a question and he would in turn ask me a question, I'd think, "I've already thought about it; otherwise I wouldn't have gone to ask for help."

Absent mentor teacher. Having a mentor teacher absent from near the beginning of student teaching contributed to an ineffective hands-on to hands-off continuum, as student teachers felt they had responsibilities too soon. Student teachers in four dyads (Dyads 1b, 3, 4, and 7) mentioned this as a problem. Danielle (Triad 3) commented,

Well generally how she's taken the approach is she's just given us the classes and she's just on campus. We see her at lunch and after school and that's it. So she tells us, "OK, you're doing soccer, but I don't care what you do. Just give me the lesson plan in the morning so I can have it for legal purposes," but she doesn't really look at it, so it's just like "whatever." She'd say, "You have my phone number. If you need anything, call me."

The researchers who were university supervisors noted that this mentor teacher, Lindsay, had never behaved like this with previous student teachers and had always been a nurturing mentor. Her current student teachers had real problems getting along with each other, which was difficult for Lindsay. Her absence could have been a result of being uncomfortable with triad dynamics, possibly not knowing how to mediate the stressful relationship between them.

Unclear mentor teacher expectations. In three student teacher dyads (Dyads 4, 7, and 10) one of the student teachers was unclear as to what the mentor teacher expected of them. Lisa (Triad 4) illustrated this problem when she remarked,

I'd probably sit down at the beginning and really make sure I knew what the expectations were. I felt like half way through I got all these other expectations that I didn't know she had. By then you're already half way through.

Inequality of Student Teachers

Another factor contributing to weak triad cohesion was a noticeable inequality in terms of competence and/or confidence of the student teachers (in Triads 3, 4, and 11). In Triad 3 this inequality caused triad evaluation meetings to be abandoned, and dyad meetings occurred between one student teacher and the mentor teacher. Mikayla was a student teacher who alluded to difficulties she experienced due to lack of confidence:

We did one [triad evaluation session] as a group, and I didn't like it because it made me feel like . . . if Danielle [the other student teacher] hadn't seen all my weaknesses, they were all of a sudden all out on the table. And I have to say, even when it's someone who's your age and going through the same thing, when someone's observing you, you feel the need to be good. So sometimes that was hard, but when we did it individually, it was so worthwhile. [The mentor teacher] makes sure to give us our criticism or feedback separately and in private. There was a time in my student teaching where I was pretty overwhelmed, and I didn't feel like I was good teacher, and . . . I cried a little bit and . . . ever since then she's been really good at being supportive.

This student inequality issue was mentioned by several mentor teachers. In Triad 4 Catherine, the mentor teacher, mentioned the effect on planning issues:

I feel sometimes that the students rely on each other too much. And sometimes maybe one overpowers the other and does more of the work than the other. . . . [Of] the two that I've been working with, one

sometimes does all the lesson plans and the other one kind of relies on [her] to do the work.

Differences in student teacher teaching competence was also a concern expressed by Jack, the mentor teacher in Triad 11, who did not think the paired placement situation encouraged independence. He stated,

Because there were two of them, the one that was not a good teacher, he tended to lean on the other guy It was hard for the one teacher who was watching . . . not to help while he saw the other guy struggling, and it was hard for the other guy to not ask for help. So that was hard. I think the guy that wasn't as good, he probably would have been better if nobody would've been there.

A lack of student teacher confidence mentioned earlier that led to competition between the student teachers in Triad 3 caused the mentor teacher, Lindsay, to become frustrated with paired placement,

I just think it's really better having one [student teacher]. I do. Just because of the competitive nature that takes place there. Sometimes I think all three of us feel like we're walking on eggshells. I don't want to over compliment one of my student teachers because automatically it makes my other student teacher feel like "Oh, I must be a bad teacher because she didn't give me as many compliments. "So you're always trying to keep things even.

Discussion

Goodnough et al. (2009) questioned "whether triad dynamics should emerge naturally based on context and the individuals involved or be prescribed" (p. 295). We followed their recommendation of "incorporating peer coaching experiences as a formal learning activity" (p. 295) by asking student teachers to give feedback to each other after each lesson was taught. Further prescription occurred as we followed the suggestion of Nokes et al. (2008) and instructed student teachers to plan their lessons together. The last part of our prescription involved the request to hold daily evaluative triad meetings. We envisioned that as a result of this environment all members of the triads would become co-learners and engage in co-generative dialogue.

This study addressed the following research questions: (a) What is the overall level of satisfaction (LOS) expressed by student teachers and their mentor teachers towards the paired placement model of student teaching? (b) How are triad relationships linked to triad members' LOS with the student teaching experience? and (c) What are the implications for future paired-placement of student teachers? Of the twelve triads, six were labeled as satisfied with the paired placement of student teachers, four were partially satisfied, and two were dissatisfied.

Triad Satisfaction

Six triads were categorized as satisfied with paired placement. The analysis of triad members' comments pointed to the importance of triad cohesion (Triad 1b being an exception, which will be discussed later in this section).

Factors Leading to Cohesion in Satisfied Triads

Homophily, which was apparent in five of the six satisfied triads (not Triad 1b), was linked to cohesion of triad members, which is consistent with the work of Dias (2013). Homophily was evident among triad members from the beginning of the student teaching experience, rather than developing during the 14-week period. In this study, common attributes or values among triad members led to cooperation and mutuality, possibly because homophily helped reduce communication cost and reflected group identity, thereby facilitating cooperation within groups (Barros, 2008). The presence of homophily helps to consolidate cooperative endeavors already underway (Chiang & Nobuyuki, 2011).

It has been proposed that connections between people who occupy equivalent roles will induce homophily in the system of network ties (McPherson, Smith-Lovin, & Cook, 2001). Student teachers occupied equivalent roles and were generally more interested in that dyadic relationship than in developing the relationship with their mentor teacher.

Homophily is likely to be stronger when multiplexity (having more than one role) occurs (McPherson et al., 2001). This was apparent with those triad members who had more than one role: for example being a triad member, having common values, and also being friends. This was evident among the satisfied triads (except Triad 1b). Although two causes have been identified for homophily, common values/attributes and structural location (geographical environment) (Kadushin, 2012), in this study common values/attributes seemed to have more impact. All triad members in the study were in similar structural locations, but many did not experience homophily.

Homophily leads to flow (Kadushin, 2012), which is collaborative sharing of gifts or ideas, and collaboration leads to the give and take necessary for mutuality or reciprocity to occur. People who occupy similar positions (i.e., share the role relationships of similar others) often influence each other in adopting innovations (Burt, 1982), which occurred in this study with brainstorming and feedback. The student teachers in satisfied triads exhibited beneficial collaboration in the form of planning together, supporting one another and giving useful feedback, similar to the benefits of paired placements previously described (Bullough et al., 2003; Goodnough et al., 2009). This collaboration led to a shared investment and shared understandings (Wilson & Berne, 1999), contributing substantially to teachers' willingness to experiment with new teaching methods (Meirink, Meijer, & Verloop, 2007).

Mentor teachers who followed an effective hands-on to hands-off continuum helped create triad symmetry, promoting strong cohesion and mutuality. They helped develop an environment of psychological safety for triad members evidenced by mutual trust and respect where members felt comfortable being themselves as they addressed problems and worked toward the accomplishment of shared goals (Edmondson, 1999). The difference in roles between the mentor teacher and the student teaching pair seemed to have little power consequence in satisfied triads. Five of the six satisfied mentor teachers knew when to give the reins over to the student teachers; were supportive, not controlling; and gave effective feedback on the student teaching. This environment helped to foster mutuality and allowed student teachers to be creative.

Triad 1b was classified overall as satisfied with the paired placement experience (the mentor teacher was only partially satisfied), but the triad was an anomaly in that homophily and mutuality only occurred between the student teachers, and an effective hands-off to hands-off continuum did not take place. It is interesting to note that the triad nodes had the same mutuality relationships as Triads 7 and 10, both of which were classified as partially satisfied. The fact that

the student teachers in Triad 1b had already had a positive experience as members of Triad 1a for the first half of the semester, is likely to have had an effect, in that they were more experienced to deal with the situation with their mentor teacher in Triad 1b and that situation did not have a negative effect on their level of satisfaction with paired placement. Had they spent the whole semester in Triad 1b the level of satisfaction may have been different, as was the case for Triads 7 and 10.

Relationship Problems in Partially Satisfied or Dissatisfied Triads

All triad members who were partially satisfied or dissatisfied with paired placement described relationship problems. Lack of homophily was obvious in the absence of common attributes between the student teachers in Triads 3 and 5. Lack of value homophily was apparent between the mentor teacher and one or both of the student teachers in Triads 4, 5, 7, 10, and 11. It is important to note that similarity of structural location did not create a sense of homophily in these triads; the dearth of homophily was associated with a lack of mutuality. The missing ties between the nodes shown in Table 1 illustrate this absence of reciprocity among triad members. Lacking common attributes (e.g., personality or teaching styles) or values (e.g., work ethic) resulted in frustration for both student teachers and their mentors. Asymmetry occurred in all partially satisfied and dissatisfied triads as mentor teachers felt the need to stay in that role, somewhat removed from the student teachers. Several of the student teachers were disappointed with the lack of reciprocity, and none of the mentor teachers mentioned a benefit to themselves. Some triads had student teachers who failed to collaborate, as evidenced through lack of collaborative planning and unequal student teacher efforts—both influenced by the factors contributing to weak triad cohesion.

An ineffective hands-on to hands-off continuum contributed to weak cohesion in the triads as well as a lack of mutuality. An environment of psychological safety was absent in these triads, which led to varying degrees of disengagement. Some field observations suggested that some of the mentor teachers may have felt sidelined by having two student teachers who had great homophily (a third wheel effect), and so they partially withdrew, both in physical presence and in willingness to give feedback (e.g., Triad 7). The closer a member is to the edge of a group niche, the more likely he/she is to leave the group (Popielarz & McPherson, 1995). The mentor teacher in Triad 3, normally a very available and supportive mentor, became much less available and stopped triad evaluation sessions due to conflict between the student teachers, another finding which corroborates the findings of Goodnough et al., (2009).

Also backing up the findings of Goodnough et al., (2009), student teacher inequality in confidence and/or competence created some challenges for Triads 3, 4, and 11. The mentor teachers had to figure out how to give positive feedback to one student teacher without offending the other. Student teachers were sensitive to the comparison, which made them feel even less confident. In Triad 4 a difference in student teacher competence regarding planning caused the mentor teacher to strongly criticize the less capable student teacher. The competent student teacher felt stuck playing the person in the middle.

Implications and Conclusions

The findings of this study have implications for faculty at the university in this study and also for faculty of teacher education programs who might be considering paired placement of student teachers. Following are some procedures that we suggest.

Preparation

Prior to the student teaching experience both the student teachers and mentor teachers should benefit from instruction in the following: meeting university expectations, anticipating potential pitfalls in triad relationships and dealing positively with them if they happen, understanding the nature of mentoring (including how to develop an environment of psychological safety) and knowing ways to effectively transition from a hands-on to a hands-off approach to supervision, balancing expectations of mentors and pre-service students; applying principles of effective peer coaching and co-generative dialoging, and fostering communities of practice (Wenger, 1998). Student teachers could be trained in seminars on campus prior to student teaching, with separate seminars held for mentor teachers. Research has shown that when mentor teachers are trained in mentoring skills there is a positive impact on novice teachers' task performance (Evertson & Smithey, 2001; Giebelhaus & Bowman, 2002) and on mentor teachers' abilities during mentoring dialogues (Harrison, Lawson, & Wortley, 2005; Hennissen, Crasborn, Brouwer, Korthagen, & Bergen, 2011).

A helpful training component would be a session in which mentor teachers and student teachers could explore and discuss the range of options to consider within a triad model (Goodnough, et al., 2009; Wynn & Kromrey, 1999) such as including peer coaching experiences as a formal learning activity, and consider the nature of triad dynamics particularly the roles of each member and their responsibility to contribute to triad psychological safety. All triad members should learn strategies to foster mutuality. The university supervisor could be present at some of the triad meetings to encourage mentor teachers to be open to the views of student teachers and encourage student teachers to be creative and take responsibility, counseling mentors to refrain from jumping in and taking over the class while a student is teaching unless an emergency occurs. Student teachers should be encouraged to share their lesson plans and ideas with their mentor as well as their partner.

Triad Placement

To the extent possible, placement of triad members should be based on common attributes or values in order to try to avoid poor relationship dynamics. This was attempted in this study, but future attempts might benefit from the development of a rubric for assessing student teachers and mentor teachers, that includes attributes such as personality, work ethic, teaching strengths, and planning skills. Such a guide would help university faculty to more effectively place students in pairs and in triads based on homophily.

An additional placement consideration involves student teachers' differences in competency and confidence. It seems wise to place student teachers who have comparable strengths and degrees of self-assurance together. We recommend that weaker student teachers be

given a solo experience so they can benefit from the full attention of a nurturing mentor teacher without real or implied comparison with a stronger partner.

Conclusion

In conclusion, pre-service teachers need experiences that allow for a gradual transition from observing on the fringes of the teaching community to participating as full members of that community. The paired placement model for student teaching introduces student teachers to a microcosm of the full professional community. When homophily is optimized, reciprocal learning can occur, as all triad members may learn from each other in a community of practice. This ideal was realized in some of the triads in this study and has also been shown in earlier research findings (Bullough et al., 2003; Hudson-Ross, 2001). In such triads, a cohesive atmosphere can increase collaboration and mutuality. Such an experience in student teaching may help to prepare student teachers to enter the collaborative environment of the teaching community as they begin their teaching careers. We wonder with Nokes et al. (2008) if the student teachers in a paired placement environment will be more likely to collaborate with their colleagues in the future; we suggest this as a topic for further research.

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