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Virtual Teaming: Placing Preservice Middle Level Teachers on Interdisciplinary Teams

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Abstract

In this action research study, 24 preservice middle level educators participated in simulated interdisciplinary teams for a semester. The impact this authentic pedagogy had on preservice teachers' developing knowledge of middle school teaming is documented through student artifacts (e.g., journals, assignments), tape-recorded interviews, and field notes. The data were analyzed using techniques from grounded theory and constant comparative methods. Findings indicated that preservice teachers (a) built cohesiveness and community, (b) developed skills necessary for working on effective teams, and (c) recognized and valued the authenticity of the experience. The study offers a number of implications for middle level educators. First, virtual teaming created an authentic non-clinical setting for preservice teachers to take risks, learn about themselves, and explore middle level organizational principles. Second, time taken to build community in the class was invaluable, allowing teams to overcome conflicts, trust one another, and enhance learning.

Introduction

As institutions across the country develop and/or refine their middle level programs, the National Middle School Association's (2005) programmatic standards, the suggestions of *Turning Points 2000* (Jackson & Davis, 2000), and middle level scholars across the nation (e.g., George, 2004; McEwin, Dickinson, & Hamilton, 2000) urge educators to provide authentic experiences that prepare preservice teachers to teach in real middle schools. In this paper, I highlight one aspect of the middle school philosophy, teaming, and illustrate a way for preservice teachers to simulate life in a middle school. I present preservice teachers' perceptions of an authentic learning experience in which they worked as interdisciplinary teams for a semester. Through this virtual teaming experience, the preservice teachers negotiated and constructed their own understanding of teaming, which extended the theory beyond the classroom to their real-world experiences.

Review of the Literature

Interdisciplinary teaming allows educators to make smaller schools for students and teachers within the larger middle school. Teams usually consist of two or more teachers from different content areas and the students they have in common. Jackson and Davis (2000) state that "teams provide the essential mechanism for translating academic standards into engaging, interdisciplinary learning activities and assessment strategies that help adolescents realize their full learning potential" (p. 128). The benefits of teaming on student achievement have been studied widely (Boyer & Bishop, 2004; Erb, 2001; Flowers, Mertens, & Mulhall, 1999, 2001). However, teaming has also benefited teachers by providing intellectual stimulation, higher job satisfaction, flexible schedules, and collegial support (Flowers et al., 1999; Forte & Schurr, 1993; Pounder, 1999).

Because teaming provides beneficial outcomes, it seems an ideal situation for all involved; however, that has not always been the case. George and Alexander (1993) noted, "teaming resembles married life in several ways: when it is working well it is beautiful, and when it is not it can be horrible" (p. 185). Unfortunately, many teachers find teaming to be an added stress and time commitment to an already tight schedule. Schamber (1999) wrote, "Good teams do not simply happen. Both require a deliberate effort in the quest for success" (p. 10). Echoing this sentiment, Jackson and Davis (2000) reported that "effective teams reflect more than content expertise and small size; they also have good chemistry" (p. 130). This "deliberate effort" and "chemistry" have not been present in every team, often creating "marriages" that do not work. Bullock and Pederson (1999) argued that teams struggle when there is a "lack of common core knowledge, vision or philosophy, planning time, and scope and sequence for the program" (p. 26).

Teams offer opportunities for teachers to come together in a professional environment. They "provide the kind of collaborative work group that is increasingly viewed as vital to organizational productivity across a wide range of professions" (Jackson & Davis, 2000, p. 128). It is through teaming that teachers experience "shared insights, critique, conjecture, search for evidence, discussion of lessons learned, prodding, probing, and small celebrations of success that permeates the conversation of effective teams are the primary means by which teachers create their professional knowledge about teaching" (p. 128).

Teaming is a pillar of middle level organization. Yet, teacher educators often fall short of preparing teachers to work on teams (Flowers et al., 2000). One way to counteract this pitfall is to create authentic learning experiences regarding interdisciplinary teaming. Newmann and Whelage (1993) offered three criteria for authentic engagements: (a) students construct knowledge, (b) students conduct disciplined inquiry, and (c) value exists beyond the school. These criteria help preservice teachers to gain a greater depth of knowledge, connect to the outside world, participate in dialogue, and engage in higher order thinking (Newmann, Marks, & Gamoran, 1996). Authentic pedagogy requires the preservice teacher to reflect and think critically about important ideas, concepts, and questions that are rooted in real-world applications (Valencia & Peters, 1991). In order for this to occur, Maksimowicz (1993) suggested that preservice teachers need:

- To feel free to risk expressing their ideas as they seek to create meaning
- To learn and practice constructive ways to confront issues and resolve conflict
- To understand that in a democratic society, the learning community highly values differences of opinion and the resolution of conflict. (p. 12)

Creating virtual teams in a non-clinical setting creates a space for preservice teachers to take risks, practice conflict resolution, and participate in democratic dialogue.

Jackson and Davis (2000) asserted that preservice teachers should arrive at their first middle school teaching experience with "an understanding of how effective interdisciplinary teams work and how they can best contribute to effective teams" (p. 96). This understanding is essential for middle level educators, as they become agents of change in the real world. In a 2004 study, 77% of middle schools and only 33% of K–8 configurations utilized the teaming concept (McEwin, Dickinson, & Jacobson, 2004). By bolstering

preservice teachers with the knowledge and experience of teaming, they become advocates for middle level reform.

With the recent demand for "highly qualified teachers" (U.S. Department of Education, 2002) and states implementing tougher standards for certification, many in higher education have been focusing attention on middle level preparation programs. A considerable body of research examines middle level teacher preparation as it relates to content (German, Dumas, & Barrow, 1995; McGinnis & Parker, 2000; Pye & Sullivan, 2000; Watanabe, McGinnis, & Roth-McDuffie, 1997), field experiences (Ducharme, 1994; Lockart & Butt, 2002; Weilbacher, LeMasters, Gill, Wisniewski, & Arnold, 2005), specific middle level teacher preparation programs (Farnan & Dodge, 1995; Ference & McDowell, 2005; Giebelhaus, 1998; McEwin, 1996; McEwin, Dickinson, & Smith, 2003), and the need for authentic learning experiences at the college level (Brocato & Franz, 2003; Stein, Isaacs, & Andrews, 2004). However, little has been written about how instructors create authentic teaming experiences for preservice teachers. This research explores preservice teachers' perceptions and the impact of authentic teaming experiences.

Methodology

Action research uses a problem-solving cycle to focus on areas that teachers have questions about (Boomer, 1987; Crawford & Cornett, 2000; Hubbard & Power, 1993; Mills, 2003). Cochran-Smith and Lytle (1993) defined action research as "systematic, intentional inquiry by teachers about their own school and classroom work" (pp. 23–24). It provides educators with tools to investigate and make informed decisions in their practice. The limitations of action research are similar to those of naturalistic research and other participatory research designs in qualitative research such as the inability to generalize results (Lincoln & Guba, 1985) and the potential bias within the participatory role of the researcher (Isakson & Boody, 1993). These limitations apply to this research as well. I chose this design as it best answered the question I posed about the effectiveness of placing preservice teachers in interdisciplinary teams; in addition, it offered the benefit of influencing my instruction.

Context
This action research study occurred in a required course taught at a major university in the Midwest, which recently received NCATE accreditation for its middle level program. The preservice teachers took the course the semester before they student taught during their senior year. The course title, Teaching, Engaging, and Assessing Middle Level Learners, was often shortened to its acronym, TEAMS.

I inherited this course from a previous instructor who generously passed on to me her course materials. One aspect I found intriguing was her use of interdisciplinary teaming. She had placed preservice teachers in fixed groups for the entire semester with each student accepting the role as expert in his/her content area. Having taught undergraduates previously, I was familiar with their concerns about group work; yet, I was also keenly aware of the need for preservice teachers to have authentic experiences working in teams. This dissonance led me to engage in action research regarding this pedagogical tool.

The preservice teachers' previous experience of teaming as an organizing principle of the middle school philosophy was limited for several reasons. As in many areas, finding schools that used teaming and teachers who were willing to allow preservice teachers to observe their team meetings was difficult. Many of the schools that teamed were concerned about confidentiality, specifically the sensitive issues regarding students discussed during team meetings. When the preservice teachers were allowed to observe team meetings, they often simply observed; they did not participate in the meetings. As a former middle level teacher, I had the opportunity to work on two very different middle level teams. Both teams taught me a great deal about teaching and living in a middle school. Therefore, the idea of placing the preservice teachers on interdisciplinary teams for the duration of the semester provided a venue for them to experience a version of team life that simulated the collaborative work in which middle level teachers engage. I decided to undertake an action research project to inform my teaching and attempt to answer the following question: How does placing preservice teachers on interdisciplinary teams for a semester-long course influence their

understanding of teaming in middle schools? In understanding the effectiveness of this strategy, I was also interested in what factors contributed to the authentic engagement and what challenges existed in utilizing this pedagogy.

Study participants were 24 preservice teachers enrolled in TEAMS—23 were undergraduate students and one was a sixth grade math teacher from a parochial school seeking a middle level teaching certificate. I randomly assigned these preservice teachers to interdisciplinary teams the first week of class. I considered the preservice teachers, content area majors when creating eight 3-person teams. The goal was strictly to make the teams interdisciplinary. Because I knew few preservice teachers from previous courses, I did not attempt to match personalities. When I assembled the teams, I assigned a grade level (sixth, seventh, or eighth) and identified whether they had students with special needs on their team (e.g., special education, at risk, ELL, gifted). I based the team distinctions on the organization of local middle schools. Each team selected their own team name and mascot (e.g., Cougars, Rockstars, Chipmunks) and sat together at tables during each class. All participants in the study were consenting adults and their inclusion in this study was voluntary; however, in the reporting of the data I used pseudonyms to protect their anonymity.

Data Collection
I collected three forms of data throughout the semester. The first was my reflective journal in which I wrote after each class (Hubbard & Power, 1993). I used the reflective journal to think through the occurrences in the class both pedagogically as well as socially. I shared my journal with the university professor who was officially responsible for the course, though she was not a weekly participant. She met with the TEAMS course three times during the semester, read some assignments, and communicated with the preservice teachers via email and hand-written notes. She provided feedback on my reflective journal in the form of suggestions, encouragement, and general commentary on the course. This journal enabled me to not only document the course over time from my perspective, but also provided me with an opportunity to think through the interactions in the moment.

In addition to my reflective journal, I collected preservice teacher artifacts to provide me with descriptive data. These included team assignments, journal entries and reflections, and photographs. I required the preservice teachers to do three of eight class assignments as a team. These three assignments included a team newsletter, a chapter for a middle level classroom management book, and an interdisciplinary unit. For this study, the team newsletter and the integrated unit provided the strongest source of information, as these best reflected individual team dynamics.

The preservice teachers participated in several reflective writing activities: journal prompts, team evaluations, and self-evaluations. Three times throughout the semester (i.e., first day, midterm, and last day), I asked them to respond to journal prompts:

First day prompts
- What do you know about interdisciplinary teams?
- What concerns do you have about working on an interdisciplinary team?

Midterm prompts
- What have you learned about teaming thus far?
- How is your team working?
- What aspects of teaming do you like/dislike?

Final prompts
- Describe the history of your team.
- What do you feel are the benefits and challenges of working on a team?
- What, if anything, have you gained from this experience?
- Should the instructor use this tool in future courses? Why/why not?

At midterm, I also asked the preservice teachers to describe their team's dynamics, first individually and then as a team. To scaffold this task, I gave them a form that included prompting questions such as "How do you describe your team?" and "How do you deal with problems, getting work done, celebrations, and so on?" At the end of the semester, I asked the preservice teachers to evaluate their team using an evaluation form

designed by a local middle school team. This form guided them to evaluate their team based on aspects such as team identity, participation in team meetings, learning from mistakes, integration of subject matter, and so on. Though not all of the topics were appropriate for these virtual teams, it felt more authentic to provide the preservice teachers with a team evaluation form that they might see in a local middle school. I also collected end-of-the-semester self-evaluations in which the preservice teachers reflected on their journey in the class. Though I did not explicitly ask them to focus on teaming, for some preservice teachers teaming was the area in which they felt they had grown the most.

Two other sources of data included photographs of in-class participation and team interviews. Though the photographs documented preservice teachers' participation in activities that revolved around team building, advisory, and communication, these did not offer substantive data for analysis. However, the team interview data was enlightening. Of the eight teams, one team in particular struggled with the teaming process. To learn more about their particular struggles, I asked the team if they would stay after class and allow me to interview them. They agreed and I conducted a semi-structured interview (Merriam, 1998) in a focus group setting with the entire team (Bogdan & Biklan, 1998). During the interview, I asked the preservice teachers to share their experiences. They began talking before I asked any questions. I posed several follow-up questions throughout the discussion (e.g., what could I [or a principal] have done to make your team run smoother, what was your biggest success). I conducted the focus group interview to further explore the anomaly present in my data. Afterward, I transcribed the tape-recorded session for analysis.

The various data collected allowed me to develop themes, advance my findings, provide historical context, and follow changes in thoughts and actions throughout the course (Merriam, 1998). One of the main advantages I found in using these documents in conjunction with my reflective journal was to help "ground the investigation in the context of the problem being investigated" (p. 126). I analyzed my data using grounded theory and constant-comparative methods (Glaser & Strauss, 1967) and used systematic triangulation of data (Denzin & Lincoln, 2000) by examining themes in three different data sources and/or across three or more teams.

Findings and Discussion

At the beginning of the semester, the preservice teachers immediately expressed concern about the idea of teaming. Many had never heard or experienced teaming before their coursework at the university. The preservice teachers wrote in their initial writing prompts comments like "Middle school teams? Never heard of that before," "I don't know much about middle school teams except that there is a lot of communication between teachers," and "I really don't know a whole lot about MS teams—I had not really heard of them until my MS methods classes." Some of these preservice teachers even had some misconceptions about what teams were. For example, one person wrote, "I know that teams are interdisciplinary units."

The preservice teachers were concerned about working on one team for the entirety of the course. The following comments are in response to a writing prompt given the day that preservice teachers were placed in their teams:

- I don't enjoy group work because it is always such a pain to get everyone together …
  Sometimes it just causes conflict and stress.
- I've always hated group work.
- I have some qualms about working on teams … a select few are the ones that work the hardest.
- I agree with middle school teams for the students, but not as a college student.
  I am not the biggest fan of group work.

Much of the anxiety the preservice teachers felt derived from their negative experiences working in small groups. To them, teaming was another form of group work. As the semester progressed, the language in the class changed. The preservice teachers no longer referred to their team as a group but instead used their team name or simply referred to "my team."

Another anxiety existed due to the preservice teachers' awareness of themselves. Some lacked self-confidence while others were keenly aware of their strong personalities. Their comments included "I'm worried I won't have enough to contribute to the group" and "I want to work with people who are open to ideas. Not that I have any but in case I get any." Those with strong personalities wrote comments such as "My concerns are that I am not in charge of everything. I[t] will be hard for me to give up control"; "I want hard-working individuals with open personalities. No 'stick in the muds,' I am way to[o] spirited of a person and would probably annoy these people"; and "My concerns are that I may end up doing the majority of the work for it to become what I think it should be (*high* expectations of myself and others)." However as the teams evolved, I saw three overlapping themes in the data: (a) teams built cohesiveness and community, (b) preservice teachers developed skills necessary for working on effective teams, and (c) preservice teachers recognized and valued the authenticity of the experience.

Team Cohesiveness
Building community and cohesiveness in a middle level team is difficult. It requires respect from each team member (Martin, 1999), support for one another (George, Lawrence, & Bushnell, 1998; Maute, 2003), and chemistry or team dynamics that encourages success (Jackson & Davis, 2000; Schamber, 1999). The data revealed that the virtual teams began to show these characteristics slowly. First, the teams began to sit together without my prompting; even when we would change classrooms or shuffle the tables around, the teams stayed together. The language changed in the class as well. As previously stated, the preservice teachers began referring to their groups as teams and often I would find comments written off to the side of papers such as "I love the Chipmunks!" The preservice teachers also wrote in mid-semester writing prompts and teaching evaluations comments that illustrated the budding community. These included such phrases as "I love my team!" and "Team life is great." By the end of the semester, ironically, each team thought they were "the best." Comments like "I probably had the best team" and "we are the best" were written, spoken, and at times cheered during the class. Lynn's comment illustrated the evolution of community when she said, "In the beginning I was nervous. I didn't know either of my teammates. Now I love my team. I wouldn't want anyone else to have been on our team."

Respect. One aspect of team cohesiveness and community is respect. Martin (1999) argued, "teachers on any team need to feel that they are valuable, contributing members" (p. 17). Without this equity, voices are silenced and not all feel respect. The preservice teachers used the word *respect* frequently when referring to their teams. Mary wrote, "My team is getting along very well and we respect each other." Jason echoed this sentiment when he wrote, "We give credit where credit is due." Respect also appeared when I provided the preservice teachers with a team evaluation at the end of the class. On a scale of one to five, five being the highest, only two of the eight teams rated themselves as a four on the item that read, "Ideas were respected." The rest of the teams rated themselves a five. Kristen summed it up best when she stated, "We discuss things rationally and calmly, with courtesy and respect for one another's viewpoints."

The teams valued different aspects of respect. For example, Maria saw the fact that her team "got along very well" as illustrative of the fact that they respected one another, while others recognized that the group may not get along, but could still be respectful. For example, Jill's team had more personality conflicts than other teams in the class, yet she stated, "[we] disagree and [it] takes a lot of time to come to consensus, but we get there … views vary but everyone is respectful."

Other preservice teachers provided different criteria to determine if their team was respectful of one another. Lynne felt her team showed respect because each voice was heard. She wrote, "We listen and try to understand one another." Jonah agreed and extended Lynne's notion by writing, "everyone's views are accepted and no one is judged." This lack of judgment made Jonah feel as if ideas were not only heard, but also taken seriously. Another team suggested that it had to do with their individual personalities. Maria wrote, "I think we are all very understanding individuals and respect each other."

Support. Another component of team cohesiveness and community is the resulting support that occurs in effective teams (Kain, 1995; Maute, 2003). George et al. (1998) argued, "the sense of community can be the

most satisfying feature of the interdisciplinary team" (p. 251). Lynn summed it up well when she wrote, "The benefits of teaming are that we always had support in class." Other preservice teachers spoke of the support they received in comments such as "the advantages of teaming are to have fellow educators to be in constant touch with." June, the sixth grade teacher seeking a middle level credential, concurred:

> I enjoyed it [teaming] too. I've been teaching for a while and this is my first team experience. I wish I had a team where I was working just because being a new teacher and having all those people there, it helps you when you don't know what in the world to do.

This support system seemed to surprise the preservice teachers, as they were not expecting to find this in a collegial relationship. Yet, it is this collegiality that is valuable in the development of the professional dispositions needed to be an effective middle level teacher.

Chemistry/Team dynamics. One aspect of being successful on a team is the chemistry within that team (Jackson & Davis, 2000; Schamber, 1999). When new teachers are interviewing it is a concern for the principal and the team to find someone who will mesh well with the existing dynamics. With the middle school philosophy firmly in place in many schools around the country, rarely are there times when teams are built from scratch (Shillington, 1994). New teachers must be aware when interviewing that team dynamics are an important feature to observe, inquire into, and decide if they will feel comfortable on that team.

The awareness of team dynamics among the preservice teachers evolved as the teams evolved (Pollak & Mills, 1997). The first time I noticed the appearance of team identity in the classroom occurred during the daily team problem. Each week the class began with a team scenario. I created these scenarios directly from the field through either my own experience, from the preservice teachers' field experiences, or from guest speakers who were practicing middle level educators. The scenarios ranged from teen pregnancy to teacher apathy to curricular plans. I gave the preservice teachers a scenario and asked them to discuss it, develop a plan as to how their team would handle the situation, and report to the whole class. A discussion ensued as to what was done in real life in comparison to their ideas. During one of these discussions, a team reported to the class and began with "As a team, we are all people who like to just get it out, lay it on the table…" This led me to explore the notion of team identity and dynamics with the class in more depth.

Through my inquiry, I realized that the teams were much more aware of their chemistry than I was. Though I had already recognized the strengths of each team (i.e., creativity, organization, collaboration, and so on), they enhanced my understanding by describing the dynamics of their team. Ann wrote, "Our team is very down to business. We get things done in a creative matter, cooperating." Melissa said, "There is a lively light atmosphere." Jeff wrote, "Our team is a laughing, fun-loving, hard-working group. We enjoy each others company and would not trade each other for anyone." Natalie said, "We tell it like it is."

As the teams became metacognitive about their team dynamics, they began to think about their own place in the team, what type of teams they would like to work in, and their contribution to a middle school team. Jason wrote, "I've learned more about myself and how I am going to fit on a team." Ann, too, referred to her growing awareness of team dynamics when she said, "We are different but we complement each other. We all pulled our weight to accomplish our team goals." Kate stated, "I think the team got better over time as we got to know one another better and knew what we could expect from one another as team workers." She added later, "We are a go-getter team."

As the class explored their team dynamics, team pride began to flair. It was during this time that the preservice teachers wrote notes off to the side of their paper; one team made team T-shirts to wear to class. This awareness of team dynamics and growth of team pride provided confidence to those preservice teachers who wrote in the beginning that they were not sure if they had anything to offer a team. However, it also helped those preservice teachers who had strong personalities to work within a group and to value all contributions.

Team Skills
As the teams evolved and built community, the preservice teachers also developed many of the interpersonal skills required for effective middle level teaming (Shillington, 1994). Collaboration and compromise emerged as the most prevalent interpersonal skills developed during the virtual teaming; other skills (i.e., leadership abilities, patience, and so on) emerged less frequently.

Collaboration. Johnson and Johnson (1994) asserted that cooperative group work consists of positive interdependence in which each member of the group is held accountable for a specific task or job. This is different than Panitz's (1996) description of collaboration in which group members share responsibilities and ownership and work toward consensus. Effective teaming relies on both cooperative and collaborative work (Kain, 1995; Pollak & Mills, 1997). Because many of the preservice teachers viewed the teaming as group work, their initial view of the tasks was more cooperative. However, as they built community and cohesiveness, they soon learned the value of collaboration.

For many preservice teachers the idea of collaboration was new. For example, Ann reported that she learned, "when we brainstorm, we looked at different views." Jason said, "We are able to share ideas freely and learn effective strategies from one another." Janice reported that her team gave her "two fresh minds and opinions" when she was "lost or tired." Maria drew from the old adage that, "Three heads are better than one." These comments became fundamental in regards to collaborative work. Unfortunately, university classrooms do not offer many opportunities for preservice teachers to work collaboratively, resulting in preservice teachers who do not value that type of work.

Many of the teams used the term collaboration when they were discussing how they worked together. Caitlyn reported, "I enjoy working with my team. We can collaborate on our ideas and can find out what is best for our students." Chris stated, "One of the benefits of teaming has been the collaboration of ideas and efforts. We don't have to do everything ourselves. Also if one of us was having a hard week, the other two could pick up the slack." Janie concurred, "We got a lot more work done with our collaboration than we would have on our own." In our simulation, the preservice teachers had to work collaboratively to complete in-class engagements, projects, and simulations. Through that work, the preservice teachers began to recognize and value the effectiveness of shared work.

One team continued to work cooperatively and never moved to a collaborative framework. They worked well together. Allyson wrote about her team, "I have learned that trust and cooperation are key, if a team lacks that element the team will have many difficulties working together." Ironically, she used the term cooperation rather than collaboration as if she, too, was aware of the difference. This team continually used the method of "divide and conquer." This may be due to the personalities on this team, the large amounts of extracurricular activities that each of the three were involved in during the semester, or the struggle to retain team cohesiveness due to late arrivals and early dismissals from class by particular team members. Though it did not influence their work or their grade in the class, it may have influenced how they perceived actual teaming in middle schools.

Compromises. Real middle level teams spend much of their time compromising (Kruse & Louis, 1995). As stated earlier, real middle school teams are often created out of necessity and educational philosophies may differ in a middle school team. The preservice teachers in this study also found that much of their work involved compromising. The term *compromise* appeared over 20 times in the data. During a class devoted to the idea of scheduling, I created a simulation in which the preservice teachers looked at a fictional list of students' standardized test scores, grades in English/language arts, and teacher comments about the student. As a team they determined who would be invited to join the honors English/language arts class. I assigned this simulation for multiple purposes. First, I wanted preservice teachers to experience a real activity that many teams must complete. Second, I wanted to place the preservice teachers in a situation where they may not all agree; and third, I wanted to illustrate the "gray areas" that emerge in real-life teaching when theory and practice do not always align. Several of the teams found this activity to be challenging. Tracking was one of the few issues where the preservice teachers did not all agree. They soon found distinct areas where

their philosophies conflicted. Even at the end of the semester, some teams were still talking about how they came to a conclusion. While Kelly reported her team came to a compromise without getting upset about the tracking list, Jason wrote:

> When we were deciding which students to put in the accelerated class, my team and I disagreed several times. In a real-life situation, the stress this caused would be magnified numerous times. Thus, working with a team has taught me how to compromise with my colleagues.

Shillington (1994) noted, "the absence of conflict does not necessarily equate to effective problem solving" (p. 51). The virtual teams were forced to problem solve and compromise. Some preservice teachers found the compromise to be part of the daily operations of teaming, while others found it one of the hardest lessons to learn.

Those teams who saw compromise as a part of daily operations also saw it as one of the assets of their team. Ann reported, "We feel comfortable speaking our minds and we have no problem with compromise." Janice wrote, "We might not have agreed but we compromised and I think that's what a real team does." Natalie reported, "I have also learned that sometimes you have to compromise and do what your team thinks; however, if everyone has had a chance to express themselves then I think a compromise is okay." Lynn said, "The only challenges were that sometimes we each wanted different things. In those cases we eventually all compromised."

Other teams found compromise a bit more challenging; yet, in the end saw it as a learning experience. Janice wrote, "Teams require compromising. Must agree to make decisions and it is difficult to agree with more than one opinioned person on a team." Ann learned the skill of being the "middle man," while Chris and Julie reported on their own growth. Chris wrote, "I learned how I have to compromise in some areas with my team. If we want to work together, we all have to make sacrifices." Julie reported, "I've learned better, too, how to compromise and how to give up some of my pre-conceived notions for the benefit of the group."

Interpersonal skills. As the preservice teachers learned about collaboration and compromising, they gained other valuable interpersonal skills. These skills differed for each student. Some, like Kelly, found that they were leaders:

> I have learned that I have leadership qualities, no matter how reluctant I am and I have learned that sometimes I don't 'need' to communicate my frustrations (personal or professional) because they don't constructively help the team to improve in function or communication.

In this excerpt, Kelly shared not only her growing leadership capabilities, which play an important role in teaming, but also that she learned when to be quiet and when to share her voice (Rottier, 2000). Jason reported on his growth when he stated, "I learned that I can only be as good as the team will let me, and this team allowed me to grow a lot. Everyone was great and this semester just seemed to fly." Here Jason shared his growth in learning about himself as well as what teaming can offer teachers (Branham, 1997).

Other preservice teachers shared lessons they learned about working in teams and about themselves. One student reported, "I've gained more experience working in teams and I think I've learned patience. I've become very good at dividing work up and then compiling it at the end of a project." Another student stated:

> I have also grown in the way that I am able to work with group members. Although we were put into teams within our class, I was somewhat apprehensive about working with different people. I have learned that everyone needs a chance to express their ideas and that sometimes you just need to compromise.

Some may assume that preservice teachers are familiar with working in groups prior to entering the profession. Yet, many of the comments shed light on the growth and learning that occurred from these novice teachers as they became more aware of their personal strengths and learned new interpersonal skills. By

providing them with an opportunity to experience working on teams, I created an authentic situation for them to learn about the requisite skills necessary for teaming (Valencia & Peters, 1991). In the final self-evaluation, Chris wrote:

> While my team experience has been wonderful, I do believe I understand better how I cannot always have things my own way in a middle school … I have also learned, through my team, how important it is that everyone pulls their weight.

Authenticity

In creating these teams, my main goal was authenticity as defined by Newmann, Marks and Gamoran (1996). I wanted to find a pedagogical tool that would provide the most authentic way for preservice teachers to experience life on a team in the confines of the university classroom. In analyzing the data, authenticity was a recurrent theme. Three categories best illustrate this theme: challenges, virtual teaming, and concerns about reality.

Challenges. I asked the preservice teachers to reflect on their experience and what they perceive to be "real teaming." I wanted them to think about ways they felt their teams were authentic and inauthentic (Valencia & Peters, 1991). All the teams seemed to perceive "real" middle level teams as facing many challenges. They therefore felt that when their teams struggled, they were getting "closer" to the "real" team experience. The preservice teachers shared freely the challenges that their teams faced.

Julie wrote, "I love them [her team] … We started to get a little more real with each other by the end … It's not as much fun when the honeymoon ends." Here Julie used the metaphor of marriage to describe teaming (George &Alexander, 1993). She pointed out that the team became "more real" as the semester continued. This quote was representative of many of the comments the preservice teachers made in which they felt that at different points throughout the semester, they engaged in more difficult discussions that challenged them as a team. Many felt this made them more "real" in terms of middle level teaming. Janie concurred with this notion stating, "As time passed, I think we got more stressed with the crazy semester and became more comfortable with one another so we let out guards down and opened up more/became a little more confrontational." Janet also reported that her team became "more realistic" when they worked through problems.

One team in particular struggled during the semester. Jill described it best when she said:

> We worked well together for about 2–3 weeks then we fell to s---. We stopped agreeing on everything and began to argue. We are all so stubborn it created lots of conflict … I learned to bite my tongue and suck it up.

This team had three strong personalities with very different philosophies of education. However, in the final interview, the team explained how much they learned from their challenging situation:

Jill: We probably had the most problems and the most complications out of all the groups and I think that was a really good learning experience for us.
Allen: Putting us into teams was a great authentic learning task. The inner working of our team closely resembled reality. I strongly recommend that next semester's class be put into teams. In spite of everything, I enjoyed it.
Jill: We all had our personal opinions on things and we are all fairly stubborn people and didn't really want to budge on what we think. It took a lot to compromise and I think that it was more that we had to work through the fact that we won't agree on everything.
Janice: I want to find a school that has teams.

I watched this team carefully throughout the semester and spent much of my time and journal writing trying to determine the best course of action. Like many principals of schools, I did not want to reconfigure the

teams during the semester. I also did not like to see the novice teachers struggle. I listened. I consoled. I let the group vent, but in the end I decided to keep them together—and was glad I did. Their final interview (conducted after grades had been reported) gave me wonderful insight into the power of discord and helped me see that by eliminating the challenges in this group I may have lessened the learning potential.

Virtual teaming. Since I was working with preservice teachers, I modeled the processes of action research throughout. I explained why I was doing it, highlighted data I collected, shared my frustrations, and illustrated my initial thinking as the semester rounded to a close. I asked the preservice teachers what they thought of the virtual teaming pedagogy as a student and a teacher and whether they thought I should continue using this technique in future courses.

The preservice teachers were all positive about virtual teaming. Amy wrote, "I believe this was a great way to simulate the middle school environment." Brad concurred, stating, "The simulation was a very useful process. I feel as if I have knowledge of how a team operates." The preservice teachers felt that the virtual teaming made them feel more prepared to teach in a middle school. Nicole said, "I think it was a good idea to have us work in teams because I feel a lot more comfortable working with a team next semester." Ann agreed, stating:

> Teams are one aspect of middle school philosophy that I feel like I have a strong grasp of. I understand the theory behind teams and the benefits for students, teachers, and parents … . I've gotten a glimpse of some of the things teams have to deal with on a daily basis.

For preservice and inservice teachers who have not experienced teaming as middle school students, virtual teaming helped make an abstract concept more concrete. The novice teachers were able to clear up the misconceptions they had at the beginning of the semester about teams (e.g., recall the student who thought teaming was interdisciplinary units) and grow to recognize the value it offers both students and teachers. Kelly reported:

> This aspect of class really provided me with some practical experience in working with a team … . Since I attended a very small, parochial school in which there were only two classes of about 21 kids per grade, true teaming was really a foreign concept to me before this class. I understand how incredibly important it is for kids at the middle school level to have a group in which to belong and to have teachers who know them well and who have formed positive relationships with them.

This excerpt illustrates the understanding and newly gained passion that many of these preservice teachers felt about teaming by the end of the semester.

However, for me, it was not enough to have them enjoy the teaming experience. To educate future middle level educators, I want to not only teach them the theory and the tools that will make them successful, but I want to inspire in them the desire to strive toward the middle school philosophy. I found that the virtual teaming not only made the preservice teachers more confident and prepared, but it also made them more excited about the prospect of working on middle level teams. One student reported:

> Although I know my future team is not going to be the same as the team I worked with in class, I do feel more confident and better prepared to be an active member of a team next year … without this class I would not feel as confident or excited about working on a team next semester.

Concerns about reality. Though the preservice teachers agreed that the teaming made them feel more prepared, that it was an authentic example of working on "real" middle level teams, and that they were excited about their future opportunities on teams, they did express some concerns.

Several of the teams expressed a concern that due to the demographics of the class they were similar in their beliefs and their background knowledge of teaching. They were concerned that because of those similarities

they "got along too well." Ironically, by the end of the semester some of the teams complained that they did not have enough conflict within their teams. They built community too easily; they became respected colleagues without too many challenges. Several preservice teachers elaborated on this notion. Jonah reported, "It was hard to get it to be like a real team since there weren't any reall [sic] conflicts. You act completely different in the real world." He seemed to feel that his team may have conflicted more if there were real lives at stake rather than the simulations we conducted in class.

Others returned to the notion of teaming needing to have challenges. Amy wrote, "I believe the team situation gives you a glimps[sic] of how a team will be, but I feel like it is fluffy. There weren't any real problems. Besides our group didn't have any disagreements [sic]. That caused our work to lack in content." This again refers back to the preservice teachers' perception that unless the teams had conflict, it was not a "real" teaming situation. To address this issue, one student suggested during different simulations to provide roles for the preservice teachers to play. For example, one could be a new teacher excited about trying new ideas and another could be a veteran teacher who is more set in her ways.

Implications

In reflecting on this action research, I noted several implications. First, virtual teaming allowed me to indoctrinate preservice teachers into the teaming experience and enabled them to recognize the benefits and the challenges that exist in middle level teaming. This was a tool that I could use in the classroom to simulate the teaming experience. For many teacher preparation programs, finding willing teams, time, and the expertise is often difficult in local middle schools. As result, preservice teachers do not often get the experience of teaming until they are student teaching and even then, many become only observers due to a lack of confidence that keeps them from participating. Thus, by providing preservice teachers with the experience of teaming in a safe environment, they learn the skills needed to be effective team members.

The second implication is that the time spent building community and team cohesiveness throughout the semester was invaluable (Pollak & Mills, 1997). In order for preservice teachers to move beyond the "group work" perspective, they had to learn to respect one another, collaborate, and value conflict. I fear that had I not spent the time building community, I would have perpetuated the negative "group work" view and lessened the potential for learning about teaming. However, I realize the double-edge sword in this view. I spent much of my time helping the teams build community that made them value the collaboration and cohesiveness, yet it also reduced the interpersonal challenges that may have occurred had the community been less strong, thus decreasing the learning potential.

More research is needed in preparing preservice middle level teachers to not only be effective classroom teachers and valued colleagues, but to also be agents of change in the middle schools—professionals who advocate for the middle level philosophy. I would like to extend this research by continuing virtual teaming in future classes to determine how other preservice teachers perceive it. It would also be beneficial to follow these preservice teachers into their student teaching and first year of teaching in middle schools and hear their views on the virtual teaming after having lived with a "real" middle level team.

Conclusion

Virtual teaming was an authentic learning experience that created a strong learning community in the classroom and taught preservice teachers skills required to work effectively in a middle level team. Recall Mary at the beginning of this paper who had "some qualms about working on teams" due to one person being stuck with all the work. In her last writing prompt, she wrote:

> Our team in one word is *family*. We have grown comfortable working with each other and work well together. We have written numerous assignments and solved team problems *together*. We came up with solutions and thought of ideas. We helped each other out in times of need providing encouragement and motivation and even transportation to a far away parked car. Most importantly, we had fun together. I've learned working in teams can work out!

It is this testimonial that should encourage middle level teacher educators to search out authentic experiences for preservice and inservice teachers to simulate the structures within exemplary middle schools. It is through this learning that we can begin to create advocates of the middle level philosophy and make positive changes in our middle schools around the nation.

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