Integrating Coursework and Field Placements:
The Impact on Preservice Elementary Mathematics Teachers' Connections to Teaching

By Patricia S. Moyer & Jenefer Husman

Teacher education programs provide many environments and experiences in an effort to support elementary preservice teacher development. Ultimately the goal is to transform the student into the teacher. Students enter teacher education programs focused on their present education, grades, and getting that long-sought-after degree; by selecting a degree in education, students also make a commitment to becoming a teacher. But what do these students really know and understand about what it means to be a classroom teacher? Does their understanding (or lack of understanding) affect their motivation towards learning, particularly in their education methods courses where they must integrate theory and effective instructional practices to design lessons?

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Research indicates that, in general, people who have clearer understandings of their future professional goals are more motivated in college courses (Peetsma, 2000). Schutz, Crowder, and White (2001) examined the goal histories of preservice teachers and discovered that there were many socio-historical

and emotional factors that influence not only their participants' goals to become a teacher but also their abilities to reach that goal. They found four sources of influence on the preservice teachers' goal to become a teacher: (1) family; (2) past teachers; (3) peers; and (4) teaching experiences.

Although much research in initial teacher preparation has focused on the importance and efficacy of preservice teachers' extended placements and immersions at elementary school sites (i.e., Professional Development Schools), less is known about the impact of these configurations on preservice teachers' motivation in their college coursework and their understandings of future professional goals (Burden, 1990). The present study considers the influence of the integration of methods coursework and field placements on the preservice teaching experience, especially its impact on preservice teachers' motivation in college coursework and understanding of what it means to be an elementary mathematics teacher. Based on the findings of Schutz, Crowder, and White (2001), we expected that alternative contexts for college coursework concurrent with teaching experiences could lead to "crystallizing experiences" (Schutz, et al., 2001, p. 305) that would help refine the goal of being a teacher. In particular, we were interested in whether integrating methods coursework with the instructional environment of the student teaching placement would help preservice teachers develop a clearer picture of their future goal of becoming an elementary teacher and consequently assist them in perceiving the usefulness of their mathematics methods coursework.

Teacher Education Research

Teacher education researchers have examined a variety of influences on the preservice teacher, including the student teaching experience (Griffin, 1989; Tabachnick & Zeichner, 1984), teacher education courses (Civil, 1993), methods in those courses (Civil, 1993), and teacher education programs and institutions (Griffin, 1999; Koehler, 1985). As a result, teacher education programs have undergone numerous changes (Griffin, 1989, 1999), and the preservice teaching experience, once viewed as a place to "practice" teaching lessons, has become much more. Studies have led to a shared belief that teaching requires not only the ability to teach lessons, but also an understanding of the rules and routines of the school culture, the ability to collaborate with other education professionals, and an awareness of the communities in which one teaches (Sikula, Buttery, & Guyton, 1996).

Studies on the transition from "practicing" teaching to beginning teaching have identified problems for the beginner associated with gaps in preparedness that are often not addressed during teacher education coursework (Cruickshank & Callahan, 1983; Veenman, 1984). As a result, teacher education programs have examined and articulated what beginning teachers should know and be able to do and what types of experiences might help them to develop these skills and dispositions (Reynolds, 1992). Studies in mathematics teaching and learning have examined the development of reflective thinking in preservice elementary math-

ematics teachers (Mewborn, 1999; Zulich, Bean, & Herrick, 1992), what mathematics knowledge preservice teachers should learn (Graeber, 1999), what practices might facilitate changing their conceptions about mathematics teaching and learning (Steele & Widman, 1997), and what research on teaching can tell us about improving mathematics teaching (Lampert, 1988). Other research has provided a formal model for instruction in elementary mathematics by clarifying the nature of instructional action and identifying goal systems that support teaching competence (Leinhardt, 1989; Leinhardt & Greeno, 1986).

In an effort to take advantage of the positive elements offered by a site-based experience, many teacher education programs have redesigned the academic configurations for earning teaching licensure (McKibbin, 1999; Spalding, Wilson, & Sandidge, 2000; Stein, Silver, & Smith, 1994; Wright, Sorrels, & Granby, 1996). Some of these changes have led to Professional Development School partnerships among universities and local schools which support the teacher candidate's development in the context of meeting children's needs at the school site (NCATE, 2001). This recent emphasis on "context" or "place" examines the importance of the environment in which the field experiences occur and shows that contextual conditions unique to individual elementary schools can affect what preservice teachers learn and how they think about teaching (Richards, Gipe, & Moore, 1995; Richards, Moore, & Gipe, 1996).

Educators argue that effective teachers must understand more than just the act of teaching; they also must understand the political and social context of schooling (Farber, Wilson, & Holm, 1989; Liston & Zeichner, 1991). McCaleb, Borko, and Arends (1992) suggest that student teaching placements be viewed as learning laboratories where student interns experience both the university and the school. Although some argue that the school context is not a positive influence on student teacher development (Guyton & McIntyre, 1990) and that the context of teaching makes it difficult for student teachers to visualize the image of an effective teacher (Bullough, 1991), others suggest that field experiences can have a positive effect on preservice elementary teachers when they think reflectively about teaching and learning (Mewborn, 1999).

Future Time Perspective

One important aspect of motivation and cognitive engagement in preparing to become a teacher is the *perception of instrumentality*, or the belief that a learning activity is instrumental to reaching future goals (Husman & Lens, 1999; Lens, Simons, & Dewitte, 2001; Turner & Schallert, 2001). Instrumentality, from the *future-time-perspective* literature, is similar to *utility value* as defined by Eccles and her colleagues (1983). The term instrumentality emphasizes the role of the future in students' perceptions of utility and comes out of the future-time-perspective literature, which has always been within the context of students' future goals. Utility value originated in expectancy x value literature, and recent examinations of utility

value have not taken the potential future orientation of the construct into consideration (e.g., Bong, 2001; Wigfield, et al., 1997).

Based on previous research on the impact of perceptions of instrumentality on achievement motivation (i.e., Peetsma, 2000, Zaleski, 1987), we expected that college students might become more engaged in their preservice coursework if they perceived that these assignments were instrumental (i.e., useful) to their future goal of becoming elementary school teachers. Individuals' perceptions of instrumentality depend upon their ability to conceptualize their future (Halvari, 1991). In application this means that in order for preservice teachers to perceive that a task (such as working on lesson plans in their methods courses) is instrumental for their future as classroom teachers, they must first have a clear understanding of what their future as classroom teachers will be like.

The ability to project oneself into the future has been strongly related to episodic memory (Klien, Loftus, & Kihlstrom, 2002). In order for pre-service teachers to develop a clear and moving picture of the future, they may need opportunities to develop memories to draw from. As students develop clear and affectively moving images of their futures, they can more easily make connections between their present and their futures. These connections (perceptions of instrumentality) can significantly affect their motivation for the tasks they perceive as instrumental. Many researchers have found positive connections between perceptions of instrumentality and deep, motivated engagement in academic work. Peetsma (2000) found that strong future-time-perspectives are significantly related to investment in school; De Volder and Lens (1982) found that perceptions of instrumentality are related to academic achievement; and Turner and Schallert (2001) found a relationship between perceptions of instrumentality and emotional resiliency. This body of research leads us to expect that increased opportunities to engage in realistic teacher experiences may affect the connections students are able to make between their methods coursework and their future goals to become teachers.

In this paper we argue that contextual knowledge of classrooms and schools is critical for beginning teachers (Berliner, 2000). Therefore, if preservice teachers are immersed in the school culture where they are teaching mathematics as they simultaneously engage in mathematics methods coursework, they are more apt to clearly realize their future as teachers of elementary mathematics and readily make connections between university experiences and future teaching experiences. In essence, they "get" what it means to teach mathematics in the elementary school, and with this realization they are able to take advantage of their university classes more fully.

The Current Project

In this project, we compared the coursework activities and mathematics teaching experiences of two groups of elementary preservice teachers. Two sections of the mathematics methods course ran concurrently: one group attended their methods courses at an elementary school site, and one group followed the

traditional experience of attending their methods courses on the university campus. There was a one-year collaborative relationship between the university and one local elementary school that allowed the teacher education faculty to teach methods courses on site at the school campus during regular school hours. If the socialization of preservice teachers is a negotiated and interactive process, as Tabachnick and Zeichner (1984) suggest, then immersing preservice teachers in the culture of an elementary school while they are still college students might focus their learning on their future goal of being a teacher, rather than on their current task of being a "good student."

Our hypothesis assumed that preservice teachers whose methods coursework and practice teaching experiences were integrated at a school site would make greater connections between their coursework and their future as teachers than those students whose methods courses were offered on the university campus. The desire to examine the motivational aspects of their development from the perspective of the literature on future-time-perspective (Gjesme, 1996; Husman & Lens, 1999; Lens, 1988) guided this project. This paper describes the teaching and learning experiences of the two groups and the relationship of these experiences to the preservice teachers' perceptions of their goals to be teachers. Through analysis of preservice teachers' written reflections, we present a hypothesis as to the experiences that contributed to the differences in their reflections and discuss ways in which these experiences may be useful in teacher education programs to support the development of future goals. Although these data focus primarily on the mathematics experiences of these preservice teachers, their activities in other subject areas may have been impacted by this field-based preparation program.

Methods

Participants

The participants in this study were 47 preservice elementary teachers enrolled in two sections of a mathematics methods course in their senior year as undergraduates, prior to their final internship placements for teacher certification. The preservice teachers were randomly assigned to one of two groups for their methods courses by the elementary education program director. One group of 22 students (hereafter referred to as Group 1) followed the more traditional route of taking their teaching methods courses (language arts, mathematics, science, and social studies) on the university campus and practice teaching in Grade K-5 placements at several different local elementary schools on selected days. Group 1 preservice teachers were a typical group in the university's elementary education program: most were 20-21 years old with a few in their late 20s or early 30s; most students were Euro-American with three African-Americans in the group, and most were female with three males in the group. The other group of 25 students (hereafter referred to as Group 2) attended all of their methods courses and was

assigned to classroom placements at one elementary school site. Group 2 was also a typical group in age and ethnicity; the group was all female.

School Settings

The preservice teachers in Group 1 were assigned to several different elementary schools in the area around the university. These schools included populations of children that ranged from few minority students to high numbers of minority students at the schools. The schools also represented high, average, and low SES populations. The teachers in these schools had worked collaboratively with the university in the past to support the preservice teacher programs. The preservice teachers in Group 2 were assigned to one elementary school site from approximately 7:30 a.m. to 3:00 p.m., 4 to 5 days per week, during which they attended their methods courses, practiced teaching in their Grade K-5 placements, and participated in activities that were part of the school culture. This was a city school with a high population of minority students and many children with low socio-economic status as indicated by the number of free and reduced lunch recipients at the school. The teachers at the school had worked with the university's preservice teacher program for several years and were interested in participating in the experiment of situating the methods courses in their school.

Procedures

The procedures used in this research were selected for the purpose of developing a descriptive case study (Merriam, 1988). It was important to the researchers to collect these data in a natural context and to include preservice teachers' points of view. The preservice teachers were blind to the purposes of the study. During data collection, the mathematics methods instructor was aware that the data in the project was being collected to describe the experience of the site-based methods courses as compared to the university-based methods courses.

Both groups had the same instructor and course assignments in their mathematics methods classes. The content of these class sessions was the same and was altered only by student-initiated questions for discussion. The same course assignment standards applied to both groups and grading criteria in the methods courses were exactly identical. Both groups were given the same number of required hours for coursework and equal amounts of assigned practice teaching for the course. However, the incidental time spent in the schools by the preservice teachers in Group 2 was greater than the time spent in the schools by the preservice teachers in Group 1. For example, preservice teachers in Group 2 often ate lunch at the school, visited children in their classroom placements between methods classes, met with their classroom teachers for planning when they had free time before and after school, and spent time in the teachers' lounge between methods classes or between methods-class time and classroom-placement time. In addition, having the mathematics methods course at the school site for Group 2 allowed the instructor to teach

several mathematics demonstration lessons in classrooms at the school site and follow these up with debriefing sessions.

After the preservice teachers completed their practice teaching of four mathematics lessons in the classrooms, they were required to complete both open-ended and prompted written reflection assignments. Open-ended assignments asked preservice teachers to reflect on lessons they had taught during practice teaching sessions in their classrooms. Prompted reflections were more specific and asked preservice teachers to reflect on what they learned about teaching elementary mathematics, what did or did not go as planned during their teaching of the mathematics lessons, what they learned about how elementary children learn mathematics, and how they saw themselves developing as an elementary teacher of mathematics. During the semester the mathematics methods instructor kept anecdotal notes on verbal interactions between her and the students about the mathematics lessons being taught at the school sites. These hand-written notes by the instructor, her informal observation notes from activities at the school site, course documents, and preservice teachers' written reflections on their teaching of the mathematics lessons were the basis for the data analysis. The preservice teachers' personal comments and reflections were not used in any way to determine their grades in the mathematics methods course.

Analysis

Observation notes, students' written reflections, and anecdotal instructor notes were compiled and read during the initial data analysis. We sought to go beyond our initial interest in description and conceptualize the events and reflections (Strauss & Corbin, 1998) about the experience of becoming a teacher for these groups. We began our examination of the data with a microanalysis, that is, a detailed line-by-line reading of the written reflections for the purpose of generating initial categories and classifying concepts according to their similarities and differences using techniques of open and axial coding (Strauss & Corbin, 1998).

We conducted open coding on 25% of the data and identified four main categories: (1) relationships with children, (2) relationships with the school, (3) lesson performances, and (4) future goals. Two independent readers read and coded 100% of the data separately using an interpretational analysis (Gall, Borg, & Gall, 1996). This included a modified constant comparative method (Strauss, 1987) involving an iterative process of reading and re-reading to identify events and dimensions in each category and cluster data segments around the most salient and recurring themes. Inter-rater reliability averaged 81% over all written reflections, and all disagreements were resolved by discussion with the first author. During this process we used continuous comparisons, incident by incident, to further elaborate the categories and examine data that might contradict the hypotheses. In the sample comments that are reported here we used a criteria of 40% in each group for reporting themes and ideas: That is, when at least 40% of the group made comments or

presented ideas that were similar, we selected that comment to present in the results section. These results use the participants' actual words as well as our conceptualization of those words to explain the phenomenon.

Results:

The "College Student" Versus the "Emerging Professional"

Course documents, including lesson plans, student assessment assignments, and test scores of content and pedagogy, were compared in our analysis to identify any differences between the two groups in their grades for the course. These scores indicated no significant differences between the course assignment scores of the two groups. This indicated that the two different learning environments that the groups experienced did not hinder students' abilities to successfully achieve the objectives of the mathematics methods course. On the other hand, a review of the observation notes and written reflections revealed numerous differences in the language the groups used to reflect on their mathematics teaching. These differences appeared to coincide with each group's varying perspective about the *purpose* of their mathematics methods coursework assignments and the field experiences. In the following sections, data are discussed using verbatim quotes from preservice teachers' written comments assigning preservice teachers (PTs) group numbers (Group 1 or 2) and random student numbers (1 through 25); therefore the notation used for the third randomly assigned preservice teacher in Group 2 would be "PT 2:3."

Group 1 – The "College Student" Group

Visiting the school. The preservice teachers in Group 1 wrestled with the challenges of fitting lessons into their personal schedules and fitting children into those lessons as they worked to accomplish what for many was a primary goal: to complete their work and rank high in their course evaluations. Their relationship with the school is best characterized as "school visits." During the semester, the mathematics methods instructor recorded comments made by the preservice teachers about school placement experiences. Group 1 commented that they rarely went to their elementary school placements or planned with their teachers outside of their required placement times. Group 1 did not consider themselves part of the school and instead viewed the placement teaching experiences as "visits" (PT 1:8). Several indicated that it was difficult to find time to talk or meet with the classroom teacher to schedule lessons. Their comments about teaching the lessons focused on when they could "fit the lesson assignments in" (PT 1:6) their personal schedules. Several preservice teachers in Group 1 commented that their teachers were not cooperative because the teacher would not allow lessons to be scheduled to accommodate the preservice teachers' schedules, rather than recognizing the constraints on the teacher, the children, and the school.

Managing children. Preservice teachers' descriptions of their relationships

with children revolved around their ability to control behavior and prevent children from disrupting the delivery of the lesson. When their attention did shift to the children, preservice teachers' comments generally centered on management. A typical comment was, "Behavior management also became easier for me by the end of my experience" (PT 1:21). Preoccupation with managing student behavior seemed to be motivated by their goal to complete assignments for the mathematics methods course. Statements such as, "I have learned that if I make it interesting, the students will cooperate much easier," (PT 1:22) imply that these preservice teachers may have been more concerned about "cooperation" and less concerned about children's learning of mathematics.

In their comments on behavior, Group 1 discussed maintaining children's attention during the delivery of the lesson. They often reported, "I was very pleased during the lesson that the children were paying close attention to me" (PT 1:1). "Children paying attention" was a theme in their reflections that occurred frequently. In fact, one preservice teacher seemed to be basing her ability as a mathematics teacher on her ability to manage the class when she wrote, "I became more confident in my teaching. . . . I had more control of the class" (PT 1:6). Some preservice teachers admitted a lack of preparation for these "lesson visits" in comments such as, "They [lessons] could have gone smoother if I knew the ability level of the students" (PT 1:14). Although Groups 1's references to student ability begin to demonstrate their awareness of student learning, their comments are predominantly reflective of task performance, with the students as the audience rather than the learners.

Lesson performances. Group 1 commented on lesson performance and attributed particular significance to following their lesson plans as written regardless of children's responses. They were especially proud of the quality of their written plans: "My procedures sections [of the lessons] were more in depth and more detailed as I developed the plans, which I was proud of" (PT 1:20). Their evaluations centered on themselves and the performance of the lessons: "I liked the way I introduced the activity" (PT 1:1). Group 1 saw themselves as "lesson performers" rather than as teachers in a teaching-learning interaction with children. In comments like, "I had opportunities to deliver math instruction" (PT 1:19), preservice teachers use terms like "deliver" that imply their performance of the lessons and the inactive role the children play in those lessons.

Their self-evaluation criteria, required as a reflective portion of their lesson assignments, provided evidence that their teaching goals centered on performing the present required tasks rather than preparing for their future goal of teaching elementary mathematics. In evaluating the success of an activity, Group 1 often focused on themselves and their own behaviors during the lessons: "I was quite impressed with my ability to teach the lessons" (PT 1:20). They evaluated themselves according to their achievement of predetermined objectives: "I think the lessons were successful because we completed the objectives" (PT 1:7). Accom-

plishing objectives was like completing the items on a checklist: once it was completed, it was evaluated as successful.

Group 1 often seemed to evaluate their lesson delivery in terms of an "ideal performance." At times they resorted to generalizing and mimicking textbook ideas—in some cases, quoting them verbatim—in their attempts to accomplish what the methods instructor wanted. Describing her teaching of a mathematics lesson, one preservice teacher reported, "I insisted on following the script" (PT 1:2), thus suggesting that following the script demonstrated competence in the task and excellence in teaching. Sometimes Group 1's reflections seemed to indicate that they were doing whatever was necessary to "get through" (PT 1:18; PT 1:21) the lesson assignments. They rarely asked the mathematics methods instructor specific questions about how to adapt a topic discussed during class to their placement situations or to the needs of individual learners. They seemed more concerned with writing the perfect lesson plan.

Borrowing beliefs. Group 1 did not seem to be developing ownership of the teaching principles they had been taught in their university classes. They reacted to the constraints of the moment—completing assignments, performing lessons, and meeting the demands of the methods course—rather than connect their current activities to their futures as teachers. They frequently wrote generalizations such as, "Students learn best with manipulatives" (PT 1:21), that were not backed up by specific examples from their classroom experiences.

Rather than internalizing the information, some in Group 1 resorted to repeating information verbatim from the mathematics methods textbook in their written reflections. One preservice teacher wrote: "I have learned that in order to be an effective teacher, I must actively involve my students, help them build on prior knowledge, and allow them to question" (PT 1:18) [This information is almost a direct quote from the text used in the course.] Another preservice teacher wrote: "I have learned to teach mathematics in a way that includes the following principles. . . ." (PT 1:12) [In this excerpt, the preservice teacher proceeded to list the principles of effective teaching from the text used in the mathematics methods course.] Group 1's comments often reiterated ideas from readings or class sessions: such as, children benefit from a hands-on approach; children benefit from a variety of instructional methods; and the teacher's attitude about mathematics affects learning. These ideas are important to internalize, but they seemed to be written more for the instructor than as beliefs of the preservice teachers. Rather than developing their own teacher identities, Group 1 seemed to be borrowing beliefs from the instructor or the book when they wrote about how they saw themselves developing as teachers.

Group 2 – The "Emerging Professionals" Group

Working in the school. In contrast, the preservice teachers in Group 2 developed a relationship with the school. Logistical concerns of scheduling lessons rarely entered their reflections. Their concerns centered around feeling out of touch with

college campus life and not having time to see their friends at the university. They regarded themselves more as employees of the elementary school than as students of the university because they were essentially at the school daily from 7:30 AM to 3:00 PM. As the semester progressed the preservice teachers in Group 2 demonstrated greater reliance on the school as a resource and incorporated themselves into its daily routine. They used the elementary school's library to check out books and materials for lessons. They frequently used the time before and after their mathematics methods classes at the school to see the children and "check-in" with their classroom teachers. Their comments included references to parent conferences/interactions, school events (such as back-to-school night or book fairs), discussions with specialists, and faculty meetings. In addition to the classroom teacher, they knew the librarian, various specialists, the principal, and the school custodians. These social incidents gave Group 2 a more holistic view of the routines of the school culture.

Managing children's learning. Children figured prominently in Group 2's discussions and reflections. They described the management of children's learning, needs of individual children, understanding children's thinking, and how these experiences were connected to their futures as teachers. Group 2 often focused on developing more effective strategies for teaching mathematics based on their perceptions of student learning. Such strategies included finding different ways to teach the same concept and making adaptations for individual students. In one example a preservice teacher reported, "The graph was too abstract for students because I had numbers ranging from 0-3, 4-6, 7-9, and 9-12. . . . The chart should have been designed with single numbers in each column" (PT 2:2). This was one of many instances where Group 2's descriptions of how they might change a future lesson emerged from their awareness of children's understanding. Whereas Group 1 observed how well children paid attention to them, Group 2 frequently indicated that *they* were paying attention to children. In the following example, the preservice teacher demonstrates her attention to children's learning and autonomy.

> Students need to be given the opportunity to explain or defend their ideas. When students are talking about their ideas, they provide the teacher with insights into their thinking. . . . A good example of this was when I questioned Nicholas about the number 14 . . . by allowing Nicholas to explain his answer, I discovered that he knew that the correct number was 14. He just wrote the number backwards. (PT 2:7)

Group 2 made observations that led to questions about children's thinking. One preservice teacher described: "I thought it was so simple. They can count to 10, and by 10, so why can't they take away 10?" (PT 2:16). These comments reflect a focus on children's learning and a desire to understand how children think about mathematical ideas. Although Group 2, like Group 1, wrote about classroom management in their reflections, these comments reflected realistic issues in teaching such as time constraints, the flow of the lesson, and students comprehen-

sion. While Group 2 grappled with many of the same issues as Group 1 (such as completing course assignments, managing the class, and planning/implementing lessons), Group 2 expressed more emerging concerns about the learning needs of the children.

A typical comment made by Group 2 was, "I thought of many different activities for the children to do after finishing their work. . . . I also learned how to watch the entire class while helping individuals" (PT 2:4). Although this preservice teacher articulates management concerns, she recognizes that children complete tasks at different rates and need different accommodations during instruction. One preservice teacher wrote: "If I give them time to do it on their own, I can better see what they are capable of and know where to go from there. If I sometimes sit back and watch, the students can figure things out on their own or help one another" (PT 2:19). These comments show insights of Group 2 teachers into how students learn and how best to manage that learning.

Teaching the lessons. Group 2's self-evaluations indicated an orientation toward their future goal of teaching children, rather than their present classroom performance, and they used children's success as a measure of their own achievement. In contrast to Group 1 who "insisted on following the script," Group 2 did not seem to view adhering to the plan as more essential than responding to the children. In contrast to Group 1, preservice teachers in Group 2 were often in their classrooms on consecutive days, which enabled them to see how mathematical concepts developed over time. These observations showed Group 2 how teachers accommodated students who were having difficulty and what teachers did to connect learning from a previous lesson to learning in the current lesson. Group 2 drew from experiences in their classrooms when they consulted the classroom teacher and the course instructor about teaching strategies to meet children's needs. For example, they questioned why their teacher did a particular action during a mathematics lesson, they asked for suggestions on how to teach a concept that was currently being taught in their classroom, and they wanted specific remediation ideas for students who were struggling.

In contrast to Group 1, who evaluated success based on completing objectives, Group 2 included the children's success in their evaluations. One preservice teacher in Group 2 wrote: "Because the students succeeded, my confidence in teaching math has increased" (PT 2:13). In her comments she evaluated her own performance based on the success of the children. One preservice teacher described an unsuccessful teaching event as her own error in planning rather than describing the event as the children not fitting into her plan: "I also found that some lessons needed to be better planned and allowed more time. . . . The counting book took much longer than I had planned" (PT 2:4). Her focus was much less on achieving a list of objectives and much more on developing her own planning skills for future teaching.

Developing a teacher identity. Through reflections that centered on experimenting with new strategies and developing their teaching ability, Group 2 seemed to be developing future-teacher goals. Detailed descriptions and examples of

classroom experiences supported their articulations of textbook ideas. In essence, they seemed to be describing their experiences as *emerging professionals* with clear future goals of being teachers. For them, methods classes and classroom teaching experiences often overlapped. Situations from their practice teaching experiences were often brought to class sessions for discussion. During class breaks, Group 2 regularly asked the methods instructor for clarification of content or for strategies to teach that content at their particular grade-level placement. They also told many stories of individual children.

Group 2's comments about lessons and about children reflected realistic views of classroom teaching. Reflecting on a difficult lesson, one preservice teacher commented, "This will be a good learning experience in the long run because I will not always be teaching in an ideal situation" (PT 2:20). Many comments reflected realistic views of teachers' lives and an orientation toward the future. Group 2 appeared to understand the magnitude of teachers' responsibilities and to take their own roles seriously: "As a teacher I will have a tremendous role" (PT 2:20). By discussing the importance of the teacher and connecting themselves to this significant role, Group 2 indirectly emphasized their own role in the classroom and their responsibility to the children in terms of this role, not as a college student (their present task) but as a teacher (their future role).

As these examples illustrate, Group 2's insights and observations, which supported principles taught in their methods course, were grounded in actual classroom experiences—as opposed to verbatim textbook sentences offered as reflective insight. Group 2 made connections, both implicitly and explicitly, between their preservice teaching and beliefs about being a teacher. They discussed their preservice teaching experiences in terms of long-range success, often by expressing what they would do when they became a teacher. Typical examples of these comments were: "If it were my classroom . . ." (PT 2:8); "I am looking forward to having my own classroom. . . . As a teacher, I will . . ." (PT 2:14); and "I enjoyed this activity and I plan to use it in my own classroom" (PT 2:3), almost all of which involve a preservice teacher who imaginatively "possesses" a classroom.

One preservice teacher wrote: "I like the way I transitioned into the different parts of the lesson . . . That is part of my teaching strategy . . ." (PT 2:9). Notice that this preservice teacher identified her actions as part of her "teaching strategy," rather than as objectives or mere components of her lesson. Group 2 seemed to be making mental notes to themselves for future teaching experiences: "I found myself scripting the math lesson the night before so that I was sure of myself the next day. I'm sure that as a real teacher I will still do this" (PT 2:11). Their reflections echoed the theme that they needed to learn to teach elementary mathematics well because there were real children counting on them. That is, they saw their practice teaching as instrumental in helping them to learn strategies for their future classroom teaching success. Because of this view, they were more likely to have an applied approach to their mathematics methods course and to gain more from their experiences.

Discussion

Integrating Coursework and Placement

Our goal was to examine the impact of integrating methods coursework and field placements at a school site on preservice teachers' motivation in their college coursework and their understandings of becoming a teacher. Preservice teachers who attended their methods courses on the university campus (Group 1) seemed to retain their college-student focus throughout the year, whereas the preservice teachers who attended their methods courses on an elementary school campus (Group 2) seemed focused on developing the skills necessary to achieve their future goals of becoming a teacher. In the final analysis, it seemed that the impact on the preservice teachers may have been less a result of the methods courses being situated at the school site and more a result of the preservice teachers being situated at the school site for an extended length of time, the methods coursework integrated with that experience, and the placement of the entire group at one school site together. Successful transition from university life to the life of a teacher may be attributed to many social factors that were incidentally available to Group 2 because they were immersed more completely in the life of the teacher while receiving on-going instruction from the university.

Group 2 had more interactions that facilitated their immersion into the school culture. Because they were in the school from 7:30 AM to 3:00 PM daily, they dressed like school personnel, wore ID badges like the teachers did, and went to the faculty room during breaks. They had significant interactions, on a regular basis, with teachers, children, principals, parents, and other school personnel (such as guidance counselors, librarians, and specialists) and more opportunities to interact with each other. These interactions allowed them to discuss instructional strategies and situations, course assignments and requirements, and other rules and routines that were part of life in the elementary school.

Some of Group 2's interactions specifically impacted their view of teaching and learning mathematics. For example, they participated in discussions with school colleagues about standardized mathematics testing and state-level mathematics accountability. They knew issues faced by their teachers in teaching mathematics according to state and national guidelines. This allowed Group 2 to understand how the teaching of mathematics fits into the roles and responsibilities of the elementary teacher.

These social incidents exposed Group 2 to and connected them with the school culture and allowed them to develop a greater awareness of the community in which they were practice teaching (Sikula, Buttery, & Guyton, 1996). These qualitatively different experiences showed Group 2 how their practice assignments connected to the greater structure of being a teacher within the political and social context of schooling (Farber, Wilson, & Holm, 1989; Liston & Zeichner, 1991). It also made them more aware of the school's and community's expectations for mathematics

teaching and assessment. Making this connection between their future teacher role and their current learning of mathematics motivated Group 2 to experience the completion of mathematics course assignments from markedly different perspectives. However, it was not the placement of the methods course at the school site that caused this impact; rather, it was the preservice teachers' increased time at the school site integrated with the methods classes also placed at that site.

Although this study focuses on the connection of mathematics methods coursework to mathematics teaching at the school site, it is likely that similar results may have been found for the Language Arts, Science, and Social Studies classes. The preservice teachers may have experienced their coursework and teaching differently in each of these subject areas as well. Therefore, these findings have important implications for the initial preparation of elementary teachers in all subject areas and for their goals and performance focus in the coursework of those subject areas.

It is important to note the characteristics of the school site and its relationship to any impact on Group 2. Group 2 preservice teachers were placed in a city school in a building that was older than many of the other schools used for placement sites. There were large numbers of students from low socio-economic backgrounds, and the school's record on standardized tests showed consistently poor performance results. The school had many needs that included a lack of resources and parental involvement. Research has shown that conditions unique to individual elementary schools can impact preservice teachers' views of teaching (Richards, Moore, & Gipe, 1996). It is unclear whether this impact enriched the experiences of Group 2 by providing them with a realistic school setting, or if the preservice teachers were enriched *in spite* of the impact of the school.

Creating the Teacher Identity

It has been argued that preservice teachers proceed through stages of development along a continuum, beginning with concerns about classroom management and survival, moving to concerns about teaching performance, and then to concerns about the effect of their teaching actions on children's learning (Fuller & Bown, 1975). Group 1's reflections focused on managing behavior and on their teaching performance, rather than on developing themselves as teachers. This focus is symptomatic of more performance-oriented learners (Ames, 1992). Group 1's written reflections provide clear examples of what Fuller and Bown (1975) identified as the first and second *concern clusters* or stages through which preservice teachers progress. In contrast, Group 2's reflections showed evidence of all three concern clusters – management, teaching performance, and children's learning – with a more balanced focus on how their teaching actions affect student learning. It is advantageous for preservice teachers to adopt a focus on how their teaching affects student learning prior to, rather than during, their first year as a classroom teacher.

Mewborn (1999) alters these teacher development stage theories (Fuller & Bown, 1975; Schwab, 1973) to fit the teaching of mathematics. Her four categories

include: "(a) classroom context and management apart from mathematics teaching and learning, (b) pedagogy of mathematics teaching, (c) children's mathematical learning, and (d) mathematics content and curriculum" (1999, p. 330). According to these categories, Group 1 focused on the first two stages, while Group 2 moved past concerns in stage one to stages two and three. Group 2 often expressed concerns about how children arrived at particular answers and what children might be thinking in mathematics. Consistent with Mewborn's (1999) previous findings, the preservice teachers in this study exhibited few instances of stage four concerns.

One clear difference between Group 1 and 2's comments is the degree to which they "owned" their in-class experiences. In particular, Group 1 discussed students from the perspective of an observer or visitor in the classroom. In contrast, Group 2 took ownership and responsibility for children's learning rather than viewing it as a by-product of completing the assigned mathematics lessons. We argue that this ownership is a product of both their development of a future self as teacher (their increased ability to imagine their teacher self) and their increased level of teacher development. Previous research (Moyer & Husman, 2000) indicates that experience is an important factor in teacher development. Full-time in school teaching placements concurrent with university study may provide the accelerated teaching experience necessary for hastening teacher development. Consistent with the future-time-perspective literature (Lens & Moreas, 1994), preservice teachers' responses indicated that this development of a clearer picture of their future as teachers helped them to understand the instrumentality, or usefulness, of their course assignments (such as lesson planning) for their future careers as teachers.

Limitations

The results of this study should be interpreted with care, as the study is limited to two groups of preservice elementary teachers. These preservice teachers participated in a variety of experiences that contributed to their development and dispositions toward teaching elementary school. Another preservice teacher group may have yielded much different results. Another school location may have also changed the outcome of these results. Another limitation of the study is that it is difficult to distinguish whether the methods courses taught at the school site impacted the preservice teachers, whether the extended amounts of time at the school site impacted the preservice teachers, or whether it was a combination of these and other factors that contributed to their increased focus on their futures as teachers. The results of this study are also limited by the interpretive frames of the researchers, who see value in situating coursework and fieldwork within the school site. A final limitation is that preservice teachers' perceptions of their future are tied to other aspects of personality, behavior, and beliefs.

Conclusions

The better an individual's understanding of and connection with his or her

personal future, the more likely it is that the individual will develop mastery of learning goals (Husman & Lens, 1999). Simmons, Dewitte, and Lens (2000) have proposed that when students have strong perceptions of instrumentality, they delay their self-evaluation and focus on mastery tasks in the present for the achievement of that future goal. On the other hand, students who are present focused and have not made connections between their present activities and future goals are more likely to be focused on present evaluation criteria and will therefore exhibit more performance orientation toward learning. This theoretical argument became very real for the authors as we examined the data. The students who spent more time interacting in an environment that allowed them to develop a more specific understanding of their futures as teachers (Group 2) also explicitly referenced how their field teaching experiences would be related to their futures as teachers. As had been predicted (Husman, 1998; Husman & Lens, 1999), along with their emerging future teaching goals, Group 2's motivations seemed significantly different from Group 1's.

Preservice teachers from Group 2 who were gaining an understanding of the instrumentality of their coursework were also engaging with the material in a more mastery-oriented way. Preservice teachers from Group 1, on the other hand, who were much more present focused on their success as college students, or as student teachers, made comments often associated with more performance-oriented learning. For example, Group 1 exhibited surface learning when they wrote verbatim comments from the mathematics methods textbook in their reflections. This is the kind of surface learning that has been associated with a performance orientation (Pintrich & DeGroot, 1990). Group 1's apparent preoccupation with meeting course requirements and pleasing the instructor in order to obtain a good grade is indicative of their grade focus—another indicator of performance orientation (Brophy, 1998).

The quality of the preservice teaching experience differed markedly for these two groups. Group 2's motivation to learn was influenced by their perception of the instrumentality of the instructional strategies that were shared in their coursework. Yet, it is difficult to clarify what was most salient about the experience for the preservice teachers in Group 2. Perhaps this is a case where the whole is greater than the sum of the parts. Just as effective teaching is a combination of many factors, the impact on Group 2 was a combination of intentional and incidental experiences that enabled them to see, more clearly, their roles as future teachers. In essence, the roles they assumed in practice teaching situations impacted their focus in coursework and in their understandings of what it means to *be* a teacher.

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