The Effect of Collaborative Action Research on Preservice and Experienced Teacher Partners in Professional Development Schools

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Abstract:
This study describes the perspectives of five pairs of preservice teachers and their experienced mentor teachers who engaged collaboratively in planning, implementing, and evaluating action research projects during a semester-long internship experience in their professional development school sites. The views of novice and experienced teachers about the costs and benefits of doing collaborative action research are presented, and the authors elaborate on the development of the mentor/mentee relationship between the preservice and experienced teacher pairs. The authors also offer guidelines for successfully engaging preservice and experienced teachers in collaborative action research.
Keywords: action research; collaborative action research; preservice teachers; novice teachers; in-service teachers; mentor teacher; professional development schools; PDS

Article:
A growing body of research suggests that one way to improve teaching and learning in schools is to involve teachers in doing research in their own classrooms (Casanova, 1989; Darling-Hammond, 1996; Herndon, 1994; Lieberman, 1995; Ogberg & McCutcheon,1987). Some educational researchers have found action research to be an effective professional development tool that promotes inquiry, reflection, and problem solving that results in action or change (Casanova, 1989; Herndon, 1994; Ogberg & McCutcheon,1987; Rosaen & Schram, 1997). Educational researchers claim that teachers who conduct action research are better informed about their field (Bennett, 1993), begin to understand themselves better as teachers, and make better decisions and choices of behavior as a consequence of their engagement in action research (Ogberg & McCutcheon, 1987). Other studies indicate that action research also promotes continuous learning (Boyer, 1990; Rock, 1997; Shalaway, 1990), revitalizes teachers' practice, and motivates teachers by improving their self-confidence as professionals (Lomax, 1995; Reading/Learning in Secondary Schools Subcommittee of the International Reading Association, 1989; Rock, 1997).

Teacher action research was defined by Lytle and Cochran-Smith (1990) as "systematic, intentional inquiry by teachers" (p. 83). Action research is also described as research that teachers do to investigate their own professional practice in an attempt to understand and improve the nature and specifics of their work and to develop a stronger voice when communicating about it (Ogberg & McCutcheon,1987). Critical action research, as defined by Kemmis and McTaggert (1988), requires teachers to engage in a cycle of questioning, planning, reflecting, acting, observing, reflecting, replanning, and often questioning further. Carson (1990) also identified planning, acting, observing, and reflecting as significant components of teacher action research because this process sets critical, reflective action research apart from ordinary problem solving. For the purposes of this study, we define teacher action research as systematic inquiry by teachers with the goal of improving their teaching practices.

Teacher educators involved in doing action research with preservice and experienced teachers find that both novice and experienced teachers become more reflective, critical, and analytical about their teaching behaviors

in the classroom as they engage in the action research process (Cardelle-Elawar, 1993; Carr & Kemmis, 1986; Henson, 1996; Sparks-Langer, Colton, Pasch, & Starko, 1991). Other educational researchers (Catelli, 1995; Darling-Hammond & McLaughlin, 1995; Friesen, 1994; Lieberman, 1995) suggest that providing opportunities for preservice teachers and experienced educators to work collaboratively through the action research process may help establish effective professional development school (PDS) practices and lay the groundwork for productive pedagogical partnerships in these settings (Friesen, 1994) because of the opportunity to engage in shared dialogue and critical inquiry. Rosaen and Schram (1997) suggested that future studies should look at the potential for shared inquiry among novice and experienced teachers to promote professional dialogue about teaching and learning and whether it results in greater learning experiences for both sets of teachers.

In this article, we focus on what occurred when five pairs of preservice teachers and their cooperating teachers engaged collaboratively in planning, implementing, and evaluating action research projects to improve their practices during a semester-long internship experience in their PDS sites. The collaborative action research process in this study involved the following five steps undertaken mutually by the participant pairs: (a) identifying an issue to be researched; (b) forming a strategic plan of action to resolve the issue; (c) collecting data in various forms to determine the effects of the action; (d) reflecting on the results of the action to make sense of the processes, problems, issues, and constraints that resulted from the action plan; and, finally, (e) creating action steps to be taken based on what was learned. Although this cycle is typically kept in motion through the creation of new action steps resulting from the questions and issues that emerge from the inquiry process, we focus on one complete action research cycle undertaken by each pair of teachers to describe what the preservice and experienced teachers learned about collaborative relationships.

Collaborative Action Research as Professional Development
Recent scholarship on professional development for teachers calls for change. According to Sparks and Hirsh (1997), it is time to find ways to move beyond the dominant training-focused models of professional development to modes that support learner-centered views of teaching. Lieberman (1995) characterized effective professional development as that which is grounded in inquiry, reflection, and participant-driven experimentation, naming the role of teacher-researcher as an appropriate means. According to Darling-Hammond and McLaughlin (1995), professional development today should provide "occasions for teachers to reflect critically on their practice and to fashion new knowledge and beliefs about content, pedagogy and learners" (p. 597). Teachers must have opportunities to develop themselves as active learners within the classroom, and teacher educators have the responsibility to teach preservice teachers the skills and processes necessary to facilitate continual renewal and growth in professional knowledge, attitudes, and identity (Holmes Group, 1990).

Cochran-Smith (1991) recommended that the internship should be arranged so students, in collaboration with experienced teachers, can learn to "teach against the grain." "Collaborative resonance" is the phrase she used to describe programs that foster critical inquiry within a culture of collaboration so that "novices and experienced professionals alike work to learn from, interpret, and ultimately alter day-to-day life of schools" (p. 284). Cochran-Smith (1991) concluded that "the only way for beginners to learn to be both educators and activists is to struggle over time in the company of experienced teachers who are themselves committed to collaboration and reform in their own classrooms" (p. 307). Engaging in collaborative action research requires preservice teachers and practicing teachers to struggle together as they become active learners of students and pedagogy. It is through this kind of struggle that meaningful learning emerges and has the potential to bring about change and development for those who choose to engage actively. This study examines these claims regarding the prospects of collaborative action research as a viable means for effective professional development for both novice and experienced teachers. This article focuses on the views of both novice and experienced teachers regarding the costs and benefits of doing collaborative action research as we elaborate on the development of the mentor/mentee relationship between the preservice and experienced teacher pairs with regard to what they learned from this experience.

Empirical Studies of Collaborative Action Research

Two single case studies (Catelli, 1995; Friesen, 1994) about collaborative action research projects involving preservice teachers and their cooperating teachers have been published recently, although descriptions of schoolwide, collaborative action research projects also are available (Cochran-Smith & Lytle, 1993; Goswami & Stillman, 1987; Oja & Smulyan, 1989). In their research, both Catelli (1995) and Friesen (1994) reported strong evidence to support the use of collaborative action research as a professional development tool in an internship setting. They suggested that this process has the potential to create a different kind of relation ship between a mentor and a mentee; a relationship that focuses on critical analysis of teaching and learning rather than simply replicating see-and-do-as-I-do mentoring that often occurs between a preservice teacher and mentor teacher.

Friesen (1994) examined the pedagogical relationships that developed between one triad that included a student teacher, cooperating teacher, and university supervisor as they engaged in an action research project. He found that the traditional roles of novice and expert were given up as three educators worked together collaboratively to understand specifics about the teaching and learning process. Friesen (1994) found in this instance that action research promoted relationships within the student teaching triad that were characterized by dialogue and collaborative inquiry. He concluded (Friesen, 1994) that "pedagogy is more a matter of fostering the being and becoming of each member of the triad than ensuring the efficient transfer of knowledge and skills from the cooperating teacher and faculty advisor to the intern" (p. 252).

Catelli's case study (1995) studied the impact of collaborative action research conducted through a school-university partnership. In this study of a cooperating teacher, student teacher, and university supervisor working together, Catelli (1995) found that the three educators became a strong research team and provided support for one another during their inquiry project. The views of the cooperating teacher and student-teacher about educational research became more favorable and they began to internalize the systematic nature of the investigation and how it can affect change. The action research project also led each participant to question, reflect, evaluate, and act intentionally. Catelli (1995) claimed that action research is a way to integrate and improve both preservice teacher education and in-service professional development simultaneously because the process of inquiry is introduced to the beginning teacher and at the same time influences the thinking and practice of an experienced teacher.

Design of This Study

In our research, we extend the work of Catelli and Friesen by describing what occurred when five pairs of preservice teachers and their mentors, or on-site teacher educators (OSTEs) as we call them, designed and conducted collaborative action research projects together. We used a multiple case study design based on criteria for case study research methods established by Yin (1994), Stake (1995), and Merriam (1998) to offer a rich understanding of how the experience of collaborative action research is similar and different across five cases of preservice teachers and their OSTEs in a semester-long internship prior to full-time student teaching in their PDS settings. In addition, we used a cross-case analysis to see if there were any themes or patterns that emerged across the five cases.

Participants

The participants in this study were recruited from a cohort of 25 senior-level preservice teachers and their OSTEs who would serve as their cooperating or mentor teachers for an entire year. These five pairs of preservice and experienced teachers volunteered to participate in this study, although all members of the cohort group at these PDS sites were required to mutually plan and carry out action research projects with their OSTEs. The volunteer preservice teachers were all White, female, traditionally college-aged, senior-level elementary education majors. Four of the OSTEs were White females and one was an African American female. The teaching experience of the OSTEs varied from 2 years to 29 years. All volunteer pairs planned to work together for the entire school year, which included the internship semester during which this study took place, and the subsequent student teaching semester that followed. Names of all participants and PDS sites were changed to maintain confidentiality.

As a part of the requirements of their PDS program, the entire cohort of preservice teachers participated in a joint action research project during the semester prior to this study. The purpose for doing this group action research project together was to familiarize them with the process of conducting action research collaboratively, including making decisions mutually about a research question, identifying useful data to collect, and experiencing effective procedures for analyzing and interpreting these data. The main carryover from this first action research experience was the preservice teachers' awareness that interviewing their students would be a useful data collection tool in almost any action research study they might undertake in the future.

The OSTEs were introduced to the process of action research during a 2-hour professional development session held at the end of the semester just prior to this study. This session, although brief, included information about the purposes and processes of conducting action research and an overview of their roles and responsibilities in undertaking collaborative action research projects with their preservice teachers during the following semester.

Context of This Study

This study was conducted in two PDS sites located in a large county school district in the southeastern United States: Allen Elementary PDS and the Gibson Primary PDS. These two PDS sites maintain partnerships with the University of North Carolina at Greensboro (UNCG) School of Education, serving as sites for the clinical preparation of preservice teachers and the ongoing professional development of teachers.

Allen Elementary PDS is a high-needs school. Approximately 60% of the students receive free or reduced lunch. Of the 605 students attending Allen, 69% are African American, 12% are Asian, 10% are Caucasian, and 9% are Hispanic or have other ethnic origins. This school is considered by the university to be an excellent PDS site because preservice teachers have rich experiences working with a diverse group of children who have a wide variety of needs.

Gibson Primary PDS has a larger middle-class population and is somewhat less diverse than Allen. Approximately 30% of the students receive free or reduced lunch. There are approximately 600 students at Gibson, of whom 75% are Caucasian, 20% are African American, and 5% have other ethnic origins.

The elementary and middle grades teacher education program at UNCG has been part of the broader PDS movement since 1990. The UNCG PDS model represents state of the art practice in preservice programming through the collaborative efforts of school and university-based faculty (Holmes Group, 1990). It also provides opportunities for collegial research on teaching and school improvement. The term *internship* in this context describes semester-long, 10-hour weekly field placements in a PDS setting. In addition, preservice teachers regularly participate in professional development activities designed by school and university-based faculty that focused on the needs of local PDS community.

Candidates who are accepted into the elementary or middle grades PDS program at UNCG become members of a cohort group, which we call an inquiry team, take their methods courses together, and concurrently participate in extensive field experiences for four semesters. Preservice teachers involved in this program spend more than 1,000 hours in PDS settings by the end of the student teaching semester. During three internship semesters prior to full-time student teaching, all elementary preservice teachers engage in experiences that include observing in a variety of K-5 classrooms, planning and teaching lessons to small and whole groups, tutoring individual students, and interviewing students to learn more about the cognition and development of elementary-age children.

Data Sources

Data sources for this study included (a) pre-and post-individual interviews with each preservice teacher and on-site teacher educator; (b) individual interviews with each participant at midsemester; (c) audiotapes of the planning, midsemester evaluation, and final evaluation conferences of participant pairs; (d) written action research plans including reflections by preservice teachers; (e) written final action research reports and

reflections written by preservice teachers; (f) INTASC portfolio reflections written by the preservice teachers; and (g) fieldnotes kept by the researchers during the study.

Data Analysis Procedures
Data analysis procedures for this study were qualitative in nature and guided by the work of Merriam (1998), Bogdan and Biklen (1992), and Yin (1994). Data analysis was an ongoing activity (Merriam, 1998). All audiotapes of interviews and conversations between participant pairs were transcribed, and transcripts were given to the participants so that they could review the data and make any necessary corrections or amendments. No participants made significant changes to the content of the transcripts, although two made grammatical changes and one teacher changed her language from "kid" to "student."

We used invivo coding—reading and rereading the texts and color highlighting in the body of the texts the sentences and passages that related to themes suggested by our research question (Clark et al., 1996)—and made multiple passes through the data to search systematically for emerging themes and patterns. Any recurring themes that emerged were documented in a table using a checklist matrix (Miles & Huberman,1994), and those that were triangulated within and across cases we reported in the cross-case report, with careful attention to maintaining an audit trail back to the original cases. This process was followed to create five preservice teacher case studies and five on-site teacher educator case studies, and to develop the cross-case analysis.

Content of Collaborative Action Research Projects
The focus of this study is on the perceived costs and benefits of the collaborative aspects of undertaking action research projects by preservice and experienced teacher pairs in PDS sites during a semester-long internship. However, we will briefly describe the kinds of projects each pair of teacher-researchers undertook and summarize important learning outcomes for both members of the collaborative action research teams. Additional information about what the preservice teachers learned from their experiences with collaborative action research projects can be found elsewhere (Rock, 1999).

Two second-grade teams and one fourth-grade team studied the implementation of various incentives designed to increase their at-risk students' motivation to read more books and participate more actively in a reading incentive program at their schools called the Accelerated Reader program. Another first-grade team studied the implementation of learning centers designed to increase their students' independence and responsibility in their classroom, and a second-grade team studied the implementation of a sharing time for students designed to increase prosocial behaviors displayed by their students.

Learning Outcomes for Preservice Teachers Undertaking Collaborative Action Research
The learning outcomes for the preservice teachers in this study included improved understanding of the self as teacher, of their students, and of their roles and responsibilities of teachers. The concept of self as teacher was used in this study to name the way in which the participants visualized themselves as a teacher. Written requirements of the collaborative action research project provided opportunities for all of the preservice teachers to explore images of themselves as teachers, clarify their personal teaching philosophies, recognize characteristics of self that they needed to develop, recognize inaccuracies in their prior beliefs and assumptions, and increase their sense of confidence in themselves as teachers. According to some research, novices who lack a clear self-image tend to be more inclined to blindly imitate cooperating teachers and more likely to flounder when they enter their own classrooms as beginning teachers, so this outcome was welcome. Four of the five preservice teachers in this study learned the value of focusing their attention on their students and found that they gained insights into their students' perspectives and an increased awareness of their students' needs. This outcome supports Haberman's (1992) conclusions that teachers who engage in action research often are required to interact more with students and consequently increase their awareness of student needs within the class. In addition, three of the five preservice teachers showed additional understanding about their roles as teachers including recognition of the teacher as researcher as an important role. They also identified reflective practice as a critical responsibility of teachers and recognized that professional growth and development is a personal responsibility.

The novice teachers in this study also expressed learning in the areas of curriculum content, collaboration, and knowledge of the action research process, although this varied among the preservice teachers. For example, the extent to which the preservice teachers explored curricular content issues was dependent on the question that drove their collaborative action research projects. If the action research question required preservice teachers to attain a better understanding of the curriculum, such as in the learning center and sharing time projects, then significant learning in this area occurred. However, when the focus of the inquiry was centered elsewhere, such as with the three projects focused on experimenting with different motivators for the schoolwide reading incentive program, then the preservice teachers achieved little understanding associated with curriculum content. Nevertheless, four of the five preservice teachers expressed recognition of the need for an appropriate balance of curriculum content, acquired deeper knowledge of curriculum content, realized need for repeated practice of curriculum, and reinforced their understanding of the need for aligning curriculum objectives. This evidence supports Cornett's (1990) findings that through engagement in action research, preservice teachers can begin to understand their role as teachers in determining and shaping the curriculum. Learning outcomes for preservice teachers that focus on collaboration during the action research process are described below.

Learning Outcomes for Experienced Teachers Undertaking Collaborative Action Research
In addition to expressing insights about their roles and responsibilities in preservice teacher education, which is discussed in detail below, all five of the OSTEs revealed some new understandings about their students and teaching/ instruction as a result of engagement in their action research projects. The OSTEs in this study said that the action steps they undertook to promote student growth and success during the inquiry projects offered them new insights about students. They also expressed that as they focused attention on students, they gained new insights into students' perspectives, increased awareness of students' needs and motivations, and gained knowledge of students' progress, abilities, and achievement. These findings also support Haberman's (1992) study. Learning outcomes concerning teaching /instruction expressed by the OSTEs suggest that much of what they learned through the collaborative action research project was unique to their inquiry and to the context in which it was carried out. For example, three of the OSTEs expressed that their inquiry project impacted their classroom instruction, feedback, and motivational strategies and reinforced their belief in the importance of teacher facilitation in the teaching process.

Other learning outcomes for the experienced teachers in this study varied greatly. For example, only two OSTEs displayed evidence of increased understanding about themselves as teachers, although only one teacher revealed any learning about curriculum content through the action research process. In this study, only the preservice teachers were required to turn in a final written report about their collaborative action research projects, although they collaborated with their OSTE partners in completing their final reports. The level to which an individual teacher reflects is a likely factor that contributes to whether the concept of self is explored during the action research process. This may explain why all the preservice teachers expressed understandings related to self as teacher regardless of the research question they investigated. It is possible that other OSTEs developed some understandings of self as teacher during the inquiry but did not have opportunities to communicate them. An alternative explanation may be that the questions they selected to investigate contributed to why some OSTEs explored the concept of self as teacher whereas others did not.

In the remaining sections of this article, we report in more depth on the perspectives of the novice and experienced teachers in this study about the costs and benefits of doing collaborative action research, and we elaborate on the development of the mentor/mentee relationship between the teacher pairs. We then explore various definitions of collaboration and dialogue, and conclude by offering some guidelines for engaging preservice and experienced teachers in collaborative action research based on our own learning during this research.

Preservice Teacher Perspectives on Collaboration
Each of the five preservice teachers in this study gained new appreciation for and a greater understanding of collaboration as they worked with their OSTEs through this project. The following five themes reflecting the

costs and benefits of collaborative action research emerged from analysis of data about collaboration from the perspective of the preservice teachers:

1.	Time constraints of internship schedule are problematic.

2.	Persistence and commitment are required for successful collaboration.

3.	Depending on another person can be frustrating.

4.	Collaboration can result in additional perspective, support, and feedback.

5.	Shared dialogue is critical.

Laura, Shelley, Carrie, and Stephanie experienced frustration in the collaborative process because of time limitations imposed by their internship schedule. They reported that being in their PDS sites only 10 hours per week restricted the collaborative action research effort. Laura told us that for collaborative efforts to succeed there must be time set aside for its purpose and a plan of action that all participants are capable of implementing. "Thank goodness for the three conferences we set up to discuss the project, otherwise I probably would get very little input or feedback from her. There is just not time in the day" (L.N., personal communication, fieldnotes).

Carrie learned firsthand that collaboration requires persistence and commitment if it is to be meaningful and rewarding: "I wish we had talked more about the project, it would have been more interesting. But, the time just seemed to slip away from us" (C.M., final interview). In this case, where the collaboration was not as successful, the evidence suggests that a lack of effort, persistence, and dialogue on the part of both members of the collaborative pair may have been the cause.

Laura, Shelley, and Stephanie also communicated another frustration inherent in their collaborative work based on having to rely on others to carry out part of the project. Even though the preservice teachers experienced these frustrations with the collaboration process, all but one was able to find ways to work around the constraints to successfully complete the project. Two solutions they found were (a) spending time discussing the project on the telephone and (b) eliciting the help of students in collecting data by using interviews, surveys, and student work samples.

Laura, Carrie, and Heather further stated that they had a deeper appreciation for collaboration because of the additional perspectives, support, and feedback they received as a result of these collaborative action research projects. "It was meaningful to work with Brenda because when we would sit down to have our conferences, she would bring things to the discussion that of course I didn't notice or think about" (L.N., final action research interview).

Shelley and Heather also stated that they gained insight into the importance of shared dialogue as a critical component of collaboration. In fact, they found the dialogue to be the most rewarding aspect of collaboration and crucial to its success:

> Having the opportunity to consult with another professional colleague proved to be a quite valuable ex-perience. When conducting research, it is helpful to be able to have support and feedback from another person. Being able to share ideas, opinions, and reflections is important as well because it either pro-vides the other person with confirmation or it allows room for new ideas or suggestions. This experience has encouraged me to seek collegial help, advice, and feedback in future research studies, or in any other situations that would warrant collaboration of ideas, thoughts, and experiences. (H.J., INTASC portfolio reflection)

These themes reflect the learning outcomes of the preservice teachers in this study about the collaboration and relationship aspects of undertaking collaborative action research projects. Their concerns focused largely on the logistics of undertaking an inquiry project with their OSTEs, their thoughts about their roles as emerging professionals, and the impact on their relationships with the experienced teachers who they would continue to work with during their student teaching semester. The overall understanding of the preservice teachers seemed to be that involving themselves in this collaborative inquiry required work and dedication, which was frustrating at times; yet they expressed that the rewards of the process outweighed the negatives they experienced. At the conclusion of the project, each preservice teacher felt the collaboration had been beneficial and they gained a new sense of the effort and commitment required to develop and maintain such a relationship. The other benefits for preservice teachers of engaging in collaborative action research included learning more about themselves as teachers, their students, their roles and responsibilities as teachers, and the content of the curriculum (Rock, 1999).

Experienced Teacher Perspectives on Collaboration
The five mentor teachers who were partners with the preservice teachers expressed their understanding of the costs and benefits of collaboration in various ways during their interviews and in taped conferences with their inquiry partners. The following five themes emerged from these data that expressed the perspectives of the OSTEs about collaboration in conducting action research:

1.   Highly dedicated to their roles as on-site teacher educators.

2.   Challenged to experiment with new roles and responsibilities as teachers.

3.   Main responsibility in this project was to assist preservice teacher in her growth as a teacher and as a university student.

4.   Involvement limited mainly to verbal feedback, discussion, and joint reflection.

5.   Engagement diminished as other responsibilities competed with the action research project.

It appears from our data that the OSTEs perceived that their main purpose for engaging in the collaborative action research process was to assist the preservice teachers in their growth as teachers and as students at the university. This relates to their perceptions of their roles as OSTEs whose job it is to aid the preservice teacher assigned to them. This notion was evident in data from four of the five OSTEs and is represented by this statement: "I want to help her, I said just let me know what I need to help you do and I will. I want to help her all I can" (G.L. initial interview). Personal or professional development for the OSTEs was perceived as a secondary outcome, with their primary concern being the preservice teacher's professional development through the project.

However, two mentor teachers, Georgia and Ginger, were challenged during this study to reflect on and experiment with new roles and responsibilities as part of their action research projects, which resulted in additional learning outcomes for them. In fact, these experienced teachers visualized themselves as learners through engagement in the action research process. For example, Georgia took on the roles of learner and facilitator in contrast to her usual teacher-centered, direct-instruction approach to teaching during the implementation of her action research project, which focused on implementing learning centers for the first time in her 24-year career as a first-grade teacher. A veteran with 14 years of teaching experience, Ginger attended more to her responsibility for teaching tolerance to young children as she read new literature, observed children, and shared insights with her preservice teacher about their inquiry project, which focused on promoting prosocial behaviors through implementing a sharing time in their second-grade classroom. In these two cases, the OSTEs were put in the position of having to rethink their traditional teaching practices and to teach in ways they had never taught before while trying to implement and study the impact of a new teaching practice (learning centers or sharing time) on the learning and behavior of their young students. They both learned to

construct new classroom roles and responsibilities as a result of the action research projects they undertook with their preservice teachers. These two case studies support the contentions of Carson (1990) and Evans and Winograd (1995) that engaging in collaborative action research has the potential to impact the way teachers think about their roles and responsibilities when inquiry, reflection, and change become part of their roles as professionals.

There was no clear indication within our data that any significant changes occurred in the way the other three OSTEs perceived their roles and responsibilities as teachers as a result of engaging in this project. Katherine, who had been teaching for 5 years, alluded to an increased understanding of the importance of the "teacher as researcher" compared to what she typically does as a teacher in her final interview, but Martha, a veteran with 29 years of teaching experience, conveyed that her vision of what she was capable of doing as a classroom teacher did not include the role of "teacher as researcher" because there was not enough time for her to engage in such practices in her classroom.

Once their jointly planned action research projects were designed and underway, the involvement of Barbara, Martha, and Katherine was reduced to verbal feedback, discussion, and orally sharing their insights and reflections with their preservice teachers about the projects. As the inquiry projects progressed, three of the five OSTEs relinquished their planned data collection obligations to their novice partners as other responsibilities in the classroom increased. Perhaps the nature of the action research projects undertaken by three of the pairs did not engage the experienced teachers enough to influence their thinking or their practices. However, their disengagement was probably also the result of the lack of accountability built into the project for the experienced mentor teachers and an underlying perception on their part that the action research project was ultimately the responsibility of the preservice teacher. It may also have been the result of the research questions they posed for their action research (Rock, 1999). Three of the projects focused on trying out several new incentives in their classrooms to motivate their students to read more books as a part of the Accelerated Reader program going on in their school. Apparently this project did not engage these teachers enough to influence or change their teaching practices, even though the question was selected for inquiry jointly with their preservice teacher partner.

Collaborative Action Research and the Mentor-Mentee Relationship
In this section, we present a summary of the participants' perceptions of how the collaborative action research experience affected their mentor-mentee relationships during the first semester of a yearlong field experience. Listed below are four patterns that emerged from our cross-case analysis. Both the preservice teachers and their OSTEs agreed that their engagement in collaborative action research allowed them:

1. More opportunities to work together, due to the projects they designed;

2. Reasons to understand their partner's pedagogical beliefs;

3. Occasions to learn to communicate more effectively;

4. Time for building relationships before the student teaching semester.

Nine of the 10 participants indicated that a benefit of the collaborative action research process was the opportunity it provided them to work together as partners on a project they mutually agreed to undertake. The following examples are representative of the feelings expressed by the participants: "It was nice to work with another person professionally in answering a question that's valued by both of us" (H.J., preservice teacher, final interview); "It was meaningful just getting to work with her, you know, having a project that we were both working on" (B.R., OSTE, final interview).

As they worked through the collaborative action research process, two of the participants spoke of how they got to know one another on a much deeper level, which enhanced their professional relationship. Ginger stated,

I felt like it was a really good project and I got to know her. I felt like I knew her pretty well to begin with but I got to know her feelings about some things, where she stands on things. (G.L. OSTE, final interview)

Shelley, a preservice teacher, also supported the notion that the collaborative action research experience allowed her to work closely with her OSTE and to develop an understanding of her partner's teaching beliefs and practices.

My professional relationship with my OSTE also improved. We worked well together. My OSTE was there to support my endeavor. However, she also gave me the freedom to try any new ideas I had to improve the centers. There were creative differences, yet we seemed to work through them. I am now very comfortable working with her. I am very thankful for her assistance and patience during this action research project. I feel she has more respect for me and I definitely have more respect for her. Most important, I understand her teaching philosophy, which helps me to work with her from day to day. (S.C., preservice teacher, INTASC portfolio reflection)

Such statements indicate that the collaborative action research projects provided these participants the opportunity to understand their partner's pedagogical beliefs and philosophies, which we believe is foundational to a productive mentor-mentee relationship between teachers. During the action research process, differences in beliefs, knowledge, and approaches surfaced. These differences required the participants to work through them, or at least come to an understanding about the reasons behind the differences, for the project to progress. Both the preservice teachers and their OSTEs mentioned that the project assisted them in learning to communicate with one another. For example:

It gave both of us a lot of practice on how to communicate with each other. It really helped us get to the nitty-gritty, and learn how to communicate with each other. (G.L., OSTE, final interview)

I think it opened Shelley up to talking more freely with me. Sometimes she got very frustrated and at the beginning I don't think she wanted me to know. But I just would say "OK, you've got to come clean, Shelley, how are you feeling about it?" So I think we spoke frankly about it.... She gave me lots of calls on the weekend. We conversed away from the situation. (G.G., OSTE, final interview)

I think that communication is extremely important because you can get way off track and you can waste a lot of time spinning your wheels if you're not communicating. This project helped us. I think this helped us get into that mode of talking together and working together and I think it's extremely important. (B.R., OSTE, final interview)

We worked closer together, whereas before I'd see her twice a week and that was it. I was forced to call her on weekends and talk about this and that ask her questions and I think that really got us a little more comfortable with talking to each other. (S.C., preservice teacher, final interview)

One exception to these findings was the relationship between Carrie and Martha. From Carrie's perspective as a preservice teacher intern in Martha's classroom, the project did not seem to have much of an effect on their mentor/ mentee relationship. Following the initial action research planning conference, this pair did little sharing about the project. Carrie did what she needed to do to complete the project but received minimum input from Martha. Carrie attributed their lack of collaboration to time constraints during the internship but also felt that Martha's personality played a role.

When I ask her questions, she's very good with answering my questions and that kind of thing. She just doesn't give a lot of feedback on her own, and that's one thing I have to get used to, and it's just kind of the way she is, which is just different from me. I mean, I just say my opinion regardless but I kind of

have to ask her before she'll really talk to me about this project or anything else going on in the class-room. (C.M., preservice teacher, final interview)

Nevertheless, Carrie felt this knowledge she gained about Martha was valuable to their teaching relationship. She learned that she had to take the initiative and ask questions if she wanted feedback or insight from Martha as they continued to work together during student-teaching semester.

Two of the preservice teachers and two of the OSTEs said that the timing of the action research project, which was carried out during the semester before student-teaching, was beneficial. Due to the action research project, they felt they were able to build a solid relationship prior to the upcoming student teaching experience. Barbara said,

Well, it definitely helps you to get closer, and I think learning to plan together now is important to carry over into student teaching. (B.R., OSTE, final interview)

Heather supported this when she wrote,

Another benefit for myself was to be able to work closely with my OSTE, talking and communicating about a professional question, students, and their learning. It is just another opportunity to build a good relationship before student teaching. (H.J., preservice teacher, final written action research report)

DISCUSSION

These five case studies echo many of the findings of Friesen (1994) and Catelli (1995), thus reinforcing their claim that engagement in collaborative action research has the potential to build collaborative pedagogical relationships in internship settings. In four of the five cases in this study, both the preservice teacher and the OSTE indicated that the action research project assisted them in developing meaningful and collaborative mentor-mentee relationships. Participation in the collaborative action research projects provided opportunities for deliberate, focused dialogue about teaching and learning, while revealing important personal and professional understandings about one another. The participants found these valuable in building a solid and productive teaching relationship. In addition, the case in which the action research project did not have much impact on the mentor/mentee relationship adds to our understanding of the importance of commitment to dialogue that seems to be crucial in developing an effective pedagogical relationship during the collaborative action research process.

Little (1987) found that mentoring should be more than just social and moral support, that these are important, but that professional support is critical in such relationships. In four of the five cases, collaborative engagement in action research projects appeared to enhance social and professional aspects of the collaboration between experienced, in-service educators and their inexperienced, preservice teachers, which ultimately enhanced their communication and their relationships. However, hierarchical differences in these five mentor/mentee relationships were not profoundly changed in this study as they were in the Friesen (1994) and Catelli (1995) studies. In this study, the OSTEs were still the experienced teachers with expertise and insights to offer and the preservice teachers were still the inexperienced intern with much to learn. This may be due to the local context of this study, the level of development of these preservice teachers, or to the unique nature of the participants in the Catelli and Friesen studies.

Given this difference between our study and the work of Catelli (1995) and Friesen (1994), our findings lead us to question whether these were truly collaborative efforts. According to Clark et al. (1996), "collaboration is not defined by the fact that everyone does everything but rather by the fact that everyone gains from the interaction" (p. 227). Clark et al. stated that dialogue, because of its emphasis on voice and full participation, is the "central shared feature of collaborative research" (p. 197). These authors stress that collaboration is not about doing the same research work; rather it is an understanding of the work of one another.

According to Clark et al. (1996), the experiences described in this study would constitute collaboration because documented in each of the cases was a commitment to dialogue and shared understandings with mutually beneficial results. The exception would be the Carrie-Martha case. In their case, the collaboration needed to analyze and reflect on their data did not happen because of time constraints and differing priorities. Carrie was left to come to her own conclusions and understandings when writing up the final action research report without the benefit of dialogue with her OSTE, Martha. The lack of dialogue and shared understandings in this case would indicate an unsuccessful collaboration according to Clark et al.

However, John-Steiner, Weber, and Minnis (1998) challenged the definition of collaboration by Clark et al. (1996) by stating that the emphasis on dialogue is simply in response to the fact that teacher-researcher collaborations are often perceived as burdensome to teachers who face many responsibilities in the classroom.

> We agree that dialogue is important to mutually respectful joint endeavors, but, unless it is linked to the participants' values, shared objectives, and common work, the result is not necessarily collaboration. (John-Steiner et al., 1998, p. 775)

Instead, John-Steiner et al. (1998) offered the following definition of collaboration:

> The principles in a true collaboration represent complementary domains of expertise. As collaborators, they not only plan, decide, and act jointly, they also think together, combining independent conceptual schemes to create original frameworks. Also, in a true collaboration, there is a commitment to shared resources, power, and talent: no individual's point of view dominates, authority for decisions and actions resides in the group, and work products reflect a blending of all participant' contributions. We recognize that collaborative groups differ in their conformance to this profile and that any single group may exhibit some of the features only episodically or only after long association. (p. 776)

According to this definition of collaboration by John-Steiner et al. (1998), participants' values, common objectives, and shared work must be considered in addition to engaging in dialogue.

We assert that all the participant pairs in this study did possess common objectives in their inquiry projects because their objectives were determined jointly as a team in their first planning session when they decided on their action research question. Furthermore, they each believed in the value of their action research project and professed in their initial interviews that the outcomes would benefit all parties: preservice teachers, OSTEs, and students. However, all participants did not share equally in the work because the preservice teachers completed all formal, written reports for the project and in all but one case did the majority of the data collection. Nevertheless, the OSTEs did share in some of the work by assisting in the formulation of the research question, designing the plan of action, observing students during the process to gather data, and by reflecting on and sharing their insights, understandings, and interpretations during scheduled action research conferences.

These case studies demonstrate that when groups engage in collaborative efforts, collaboration will not necessarily look the same. If successful collaboration is to occur, attention must be focused on sustained dialogue, shared work, and a common mission. The more participants engage in dialogue and actively participate in an action research project, the more likely it is that each person's learning will increase. An example of this is the case of the OSTE, Ginger, who involved herself in collecting and recording data throughout the project. Her learning and understanding from the inquiry process did increase.

> I always thought I was (aware of students' needs), but this makes you take a bigger look at it, and then reflecting upon it when I write my little script down in the research journal makes me more aware. (mid-term interview)

A counterexample is Martha, who limited her active participation to the initial planning session and then had only sporadic and informal conversations with Carrie about their project. For Martha, there was little to no

active collaboration in the real work of the project, and her understanding was restricted in comparison to the other OSTEs who were more actively involved.

It is our experience as researchers and university-based supervisors that frequent, focused encounters between preservice teachers and their mentor teachers are the exception rather than the rule during field experiences in preservice teacher education. Even in PDS settings, often the only time that a focused conversation occurs between preservice teachers and their OSTE is following a formal observation of a lesson. In these situations, it is common for the conversation to be centered on what the preservice teacher was doing and on suggestions the OSTE has for growth. Although these types of conversations are important and necessary for teacher development, the collaborative action research projects in this study added value to the interactions of the participant pairs. That is, the action research conferences provided opportunities for the OSTE and preservice teacher pairs to have discussions about their thinking related to the classroom without the discussion being centered on the preservice teacher's performance in the classroom. Consequently, the discussions were centered more on students and the topic of inquiry rather than the preservice teacher's abilities. This type of exchange is important in clarifying the value of talking with colleagues as a means to better understand students and pedagogy rather than engaging in dialogue solely for evaluative purposes.

We believe that establishing a professional working relationship that values open communication may give preservice teachers an advantage during their student teaching experiences. It is possible, as a result of this collaborative action research experience, that these preservice teachers will be able to concentrate their efforts on the teaching and learning under their direction much sooner in the student teaching experience, rather than spending time dealing with relationship issues. It is also possible that the nature of the inquiry, the actual question studied, the type of data collected, and the level of involvement of the mentor teacher and the students in the classroom may also impact the level of collaboration. However, it would take additional research beyond the scope of this study to identify all the conditions necessary for ensuring successful collaborative action research. In addition, studying the actions and the relationships of these mentor/mentee pairs as they worked together during the subsequent student teaching semester would be an ideal follow-up to this study.

IMPLICATIONS AND CONCLUSIONS

If a goal of conducting collaborative action research is to achieve maximum professional development for all participants, then we must find ways to encourage accountability and ownership during the action research process. With this in mind, we offer the following guidelines for engaging preservice and experienced teachers in collaborative action research based on our experiences during this study:

1. Provide both preservice and experienced teachers adequate training, and, if possible, give preservice teachers prior experience with action research before they complete a collaborative action research project.

2. Increase ownership and accountability of experienced teachers by setting up informal group presentations and/or formal school presentations of action research projects. In other words, provide a wider audience for sharing and disseminating the results of action research projects.

3. Establish ways for experienced teachers to receive credit for their efforts by earning professional development or renewal credits from their district, or by earning university credit.

4. Allow action research questions to emerge from the interests and concerns of the experienced veteran teachers and the preservice teachers and not solely from the university's agenda.

5. Give adequate time and support to the question formulation period and to discussion and assessment of the value and practicality of the action research questions posed. The key is to identify an area of inquiry that assists all the participants to address their immediate needs and to work on their long-term professional goals at the same time.

6. Encourage data-collection strategies that include information gathered from students' perspectives. We say this because additional findings from this study (Rock, 1999) indicated that collecting data from students (e.g., individual interviews, class surveys, student work samples) provides valuable knowledge about students, which appears to help both preservice and experienced teachers focus (or refocus) on students' needs in the classroom.

In conclusion, if engaging in collaborative action research as professional development is to achieve beneficial results for all participants, then adequate time must be given to the formulation and analysis of the proposed research question, training in how to undertake action research, and a system of rewards and accountability. In addition, support structures should be offered to encourage and facilitate collaboration.

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