Student Teacher Inquiry as an "Entry Point" for Advocacy

By Barbara J. Merino & Pauline Holmes

Purpose of the Study

Much has been written about the value of teacher research for inservice teachers. Hollingsworth and Sockett (1994) present teacher research as a viable source of teacher knowledge and a force within the movement toward increased professionalism of teachers. Cochran-Smith and Lytle (1999) describe five major trends in the teacher research literature: (1) the prominence of teacher research in teacher education; (2) teacher research as part of school reform; (3) the genesis of conceptual frameworks for teacher research; (4) teacher research as ways of knowing in communities; (5) teacher research as practical inquiry. Despite these affirming words, studies that richly describe how student teachers learn to do teacher research and then investigate the impact of inquiry on student teachers and teacher educators, particularly in culturally and linguistically diverse settings are rare (Fueyo & Neves, 1995; Grant and Secada, 1990; Olmedo, 1997).

This study provides a description of two models of preservice inquiry and an analysis of their value over time as perceived by two teacher educators working with five cohorts of student teachers in promoting the role of teacher research in culturally and linguisti-

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cally diverse settings. More specifically, this study asks two sets of questions: One set focuses on the teacher educators (1a) How do teacher educators describe and implement their practices designed to promote advocacy and teacher research? (1b) How do they evaluate student teacher growth in their effectiveness as teacher researchers? (1c) How do they reflect on the changes in their practices and their impact over a span of five years? The second set of questions focuses on the student teachers: (2a) How do student teachers perceive the effectiveness of teacher educator practices in promoting their skills for advocacy and teacher research? (2b) How do they assess their growth in pedagogical knowledge, advocacy and teacher research at the end of the program and one year after graduation?

Theoretical Framework

Multiple traditions of teacher research exist in the research literature (Zeichner & Noffke, 1998). Three definitions drawn from these traditions guided our thinking in casting the framework for developing teacher researchers in this study: (1) research as systematic inquiry (2) action research and (3) participatory research. Our one-year credential program began with a broad definition of research purposefully in order to entice prospective teachers to an agenda that often seems too complex for a beginner. Hatch and Farhady (1982) in their research handbook for second language teachers define research broadly as "the systematic approach to finding answers to questions" (p.1). This opens up the domain of inquiry for student teachers within the pragmatic context of their practice, through investigations, which can be couched as self-study of practice. We also drew on Noffke & Zeichner (1987, p.1) for our definition of action research as referring to "research conducted in a 'field' setting and involving those actually 'native' to the field, usually along with an 'outsider.'" The outsider in this context, was the teacher educator who participated in the process by leading small teacher research groups. Another tradition that informed our conception of teacher research was the tradition of participatory research: "a philosophical and ideological commitment which holds that every human being has the capacity of knowing, or analyzing and reflecting about reality so that she becomes a true agent of action in her own life" (Noffke & Zeichner, 1987, p. 8).

Two models of teacher research were investigated systematically over a span of five years. Both were grounded in constructivist learning theory at the process and content levels (Richardson, 1999). In Model I, teacher research was operationalized as a short term intervention designed to test out a strategy or approach to improve learning in one child or a small group of children developing literacy in two languages. This model required that the student teachers design their own inquiry through a cycle of steps: (1) collecting preliminary data to identify a need; (2) identifying a strategy to address the need through a literature search and expert interviews; (3) designing and testing out the effectiveness of the strategy by collecting and analyzing baseline, process and outcome data on student learning

and engagement; and (4) sharing each aspect of the process within the community of the class as the inquiry unfolded.

In Model II, the teacher research component evolved from inquiry about any issue related to the student teachers' practice to more focused research oriented around the discipline of teaching English language arts. Prospective teachers were directed to closely examine a curriculum question that emerged from their teaching. Focusing their questions, reading about related ideas, making changes in lesson planning and implementation, working together in feedback groups, and presenting "final" papers to their peers led candidates to increased pedagogical understanding.

Over the span of five years, we shifted our approach to focus on inquiry and techniques used to scaffold the development of the inquiry projects. Changes in our practice as teacher educators, perceptions of the impact of these changes and analyses of student teacher inquiry practices were the targeted areas of inquiry for this study.

Context of the Study

The site for this study is a large research university in California with a teacher education program that prepares teachers for multiple (elementary) and single subject (secondary) teaching credentials. Two programs were targeted: Model I—the elementary program, which prepares teachers to work in bilingual settings, and Model II—the secondary English program which prepares teachers to work in linguistically-diverse settings. Within the context of the teacher education program, the development of the role of teacher researchers was facilitated in conjunction with three other related roles: teachers as reflective practitioners, teacher as collaborative professionals and teachers as advocates for educational equity. The teacher education faculty through a joint inquiry with cooperating teachers identified these roles as the framework for the program. For this study, which was conducted as part of a broader accreditation evaluation, multiple data were gathered through surveys, questionnaires, interviews, observations, logs, portfolios, and email dialogue. The study targeted here draws on the broad data base collected from five years of cohorts of student teachers in all the programs and from the more narrow data set of teacher educators and student teachers in the targeted elementary and secondary programs. The authors and researchers are two teacher educators, acting in partnership, each interviewing the other, observing each other's practice and collaborating on data analysis.

Two key contextual variables are critical to an understanding of our inquiry. The first is the setting in which our inquiry takes place and the second is the participants engaged in the inquiry. The school communities where student teachers were placed vary significantly in terms of ethnic and linguistic diversity. The school districts' student population ranged from a low of approximately 2000 in a small rural district to a high of 10,000 in the urban districts. All districts have

a high percentage of Hispanic students (usually close to 50%). In all districts, the percentage of students participating in free or reduced lunch is quite high, with typically 60% of students enrolled in this program. Percentages of English language learners also are high in all districts. All are long-term partnerships with the university's teacher education program.

Student teacher placements in the schools were carefully selected to meet the following criteria: (1) culturally and linguistically diverse classrooms; (2) commitment to advocacy as evidenced by faculty who are appropriately trained; (3) commitment to exemplary practice as evidenced by participation in teacher development activities directed toward reform.

In a program oriented to develop student teachers' knowledge of culturally and linguistically diverse communities, the very diversity of the student teachers is also a critical element. One of the best ways to ensure that a teacher education program promotes student teacher growth in sensitivity to issues of diversity is through improving the diversity of the cohort itself. The program has made significant advances in the percentage of culturally diverse students over time. Each year, in the five year cycle of the study, the diversity of the pool has reached at least 22% or better, reaching a high of 43% in the fifth year.

Data Sources

There were two principal data sources for this study: (1) the teacher educators who led the teacher research groups (two) and (2) the student teachers participating in the program over a three-year span of intensive data collection (N=56). Log entries, portfolios of practice, observations, interviews, and structured reflections were the principal means of data collection for the teacher educators and student teachers. Student teacher data also included: process data on the inquiry as it unfolded, final reports, reflections on the process of inquiry, self assessment of growth, evaluation of key activities and materials designed to support the inquiry as well as reflections on the impact of inquiry on their practice. Post graduation reflections were gathered through a variety of approaches including interviews, observations, focus groups and surveys. Two major surveys were used. One was a year-end program evaluation administered to all students every year and designed to provide students with an opportunity to rate the effectiveness of key program elements in promoting the roles. The second survey was administered to program graduates, one to ten years after graduation. It was designed to target several domains including key components linked to the program's vision to develop the four roles and key components reflected in the literature on exemplary teacher education programs with items drawn from an instrument developed in a national study of teacher education programs (NCTAF, 1996). Here we target only those survey results relevant to our inquiry.

Data Analyses

Case study design guided the framework for data collection and analyses. Qualitative analyses were conducted on the student teacher data by targeting cases of students who were exemplary or typical for each cohort. These cases formed the basis for detailed analyses. Throughout the period of data collection, we conducted research on each other's practice through periodic interviews, observations, and structured reflections. Data analyses on the main used traditional qualitative approaches to review data and abstract themes (Miles & Huberman, 1994).

Teacher Educator Practices and Perspectives

Approaches used to scaffold inquiry through teacher research evolved over time, changing in several key ways. Both models were much more open ended at the beginning. Model I began with inquiry about an intervention focused on any type of learning, with limited suppport to a more focused intervention, systematically scaffolded and designed to enhance the literacy development of a case study student or small group of students for whom instruction was not working. Model II moved from inquiry about any issue that appealed to the student teacher to the requirement for inquiry about the discipline of English language arts. Changes in the amount of scaffolding provided student teachers were made largely as a result of our analysis of student teacher reflections' about what techniques facilitated the teacher research project. Increased scaffolding included imposing a structured sequence for the discussion and exploration of the inquiry, greater mentoring of the writing through the use of email and peer feedback, and an increase in the presentation of approaches to data collection. Model II moved to a lengthening of the period of the assignment from ten weeks to sixteen weeks.

Model I-B's Story of Moving
from Curriculum Units to Interventions.

The genesis for the teacher research component in this model evolved from reflections and the joint thinking of our community of teacher educators. Programs preparing teachers to work with bilingual students are required to engage student teachers in curriculum development focused on the development of biliteracy. Most teacher education programs, require the development of a unit of lessons, which are often designed thematically (Merino, 2000). For several years, I had organized a Language, Literacy, and Culture course around this assignment, analyzing different models of curriculum development, exploring research on effective practices, presenting sample cases of curriculum development and requiring students to develop a thematic unit. Students were required to build a needs assessment based in part on the community in which they were doing their field practicum, articulate principles for the curriculum, justify these from a variety of

perspectives, develop a one to two week cycle of lessons, generate an evaluation plan and provide a brief presentation to their colleagues illustrating their approach through one lesson prototype. Students were encouraged to try out at least one subset of lessons and report on their results. Students were very satisfied with the course, rating the experience quite highly and presenting their units as key pieces of their portfolios. They seemed to learn about curriculum development including how to negotiate with colleagues, but I felt conflicted about the results. The focus of the students' interest tended to fall principally in creating a set of fun, creative, learning activities and not so much on the impact of these activities on student learning.

Late Phase Version of Model I

As we restructured all our programs, organizing their content and process around the roles we expected our preservice teachers to develop, I began to recast the structure of the course in the early nineties. One key insight in facilitating the development of the role of advocate for educational equity came from my conversations with student teachers. After analyzing multiple definitions of equity (Freire, 1980) and reflecting on inequalities of opportunity in their field placements, the student teachers became convinced that they wanted to promote equity but wondered precisely how they could. Targeting Cohen's (1997) definition of an equitable classroom, as a place with a focus on learning, where teachers worked to narrow the gap between under-performing students and the rest of the class, proved to be a very productive approach to operationalize advocacy. Students were asked to target a small group or a single child who seemed to be lagging seriously in literacy development. This then became the central issue to explore in the class: How to develop an intervention that would enhance student learning for a particular child or group of children?

Pedagogical content knowledge about the development of biliteracy is fostered in the course within a complex inter-disciplinary framework, encompassing linguistic, psychological and anthropological research on literacy. Literacy is defined as a complex phenomenon and students read and discuss multiple perspectives on how it develops in linguistically and culturally diverse children, targeting societal, community perspectives (Delpit, 1988) as well as concrete examples of interventions in early and later stages of literacy (McCaleb, 1994). Cases of literacy development in bilingual children are featured each class, analyzing content, process and presentation (Valdez, 2001). Student teachers are also introduced to reviews of the literature that synthesize knowledge of key concepts, phonological awareness in Spanish speaking monolinguals and bilinguals, for example (Denton, Hasbrouck, Weaver, & Riccio, 2000). Usually these syntheses are paired with a close look at one primary source, to help students understand the genesis of findings and learn to critique and adapt data collection procedures. Here I emphasize the importance of knowing as much as possible about the construct we are seeking to influence. To promote phonemic awareness student teachers need to consider how

researchers have defined it, measured it and developed it. This knowledge can then inform how to design strategies to promote it.

Children's literature is presented as a key component in motivating reluctant readers and writers and as a way to connect with parents. At every session, one genre of children's literature in English and Spanish is presented as a possible vehicle for complementary use in an intervention. Oral folklore traditions in English and Spanish are also presented. For example, after reading Carrillo's (1994) study on the development of phonological awareness in monolingual Spanish speakers, I present the children's song, "Chocolate, Chocolate." This song with its segmentation of the multi-syllable word into syllables provides an example of how parents can reinforce skills at home. The use of literature as an intervention is presented through both demonstrations and reviews of sample interventions targeting not just the children in the class but exploring ways of working with parents (Ada, 1988). The class itself is organized as a community of learners and as a cohort of teacher researchers, sometimes termed a community of practice. In such communities interaction is collaborative, joint problem solving is valued, and all voices are affirmed. In the case study cohort in Year 5, there were eleven bilingual credential students in the class as well as one expert teacher. Eight of the eleven were Latina women. All eleven were highly proficient in English and Spanish. All were placed in bilingual classrooms where biliteracy was a central program goal.

Each weekly session we targeted an aspect of the inquiry project: (1) identifying the issue/problem, collecting preliminary data, (2) describing the context, (3) exploring possible interventions by exploring the research literature, interviewing experts, analyzing methods texts, (4) developing a rationale for the intervention, (5) defining key principles of the intervention, (6) operationalizing the intervention through prototype activities, (7a) collecting baseline data, (7b) collecting process data, (7c) collecting exit data, (8) data analysis, (9) linking data analysis to conclusions, and (10) presenting and reflecting on the inquiry.

For each session, examples from published literature and examples from previous cohorts were presented. During each session, time was allocated for both pair and large group sharing about each step of the inquiry. In between sessions, students communicated with the instructor and each other via email. Out of class communication was most intense during the first few weeks as students explored possibilities. Typically, they began by shadowing a child or group of children they believe needs extra help. Much of the discussion is designed to clarify, to provide rich examples, to explore alternative explanations. Another period of intense informal, out of class communication comes when they are considering possibilities of how to intervene. As the instructor, I consciously try to promote dialogue among members of the class, and through interviews with other experts. All students must conduct an expert interview and an expert teacher comes to class to be interviewed about literacy practices. Student teachers develop a protocol of questions designed to inform their inquiry when they conduct their own interview.

The protocol I followed in setting up the intervention/inquiry project as a series of steps included: the description of the context, profile(s) of possible targeted cases with some preliminary data, a brief description of the issue to be addressed with a rationale about its importance, a sample strategy or lesson to address the issue with a rationale of its appropriateness, presentation of two ways of collecting baseline/outcome data and two approaches to monitor the process, sharing of data on student learning with a proposal for analysis, a final short presentation to the class about the inquiry. Each step involved both group discussion and a written response, with feedback from peers and/or the instructor. The final product integrated all these pieces and was first submitted as a rough draft. Feedback was provided at the class presentation guided by a protocol by both peers and the instructor.

Some Sample Cases

Here I will draw from some sample cases to illustrate how these steps have shaped the inquiry. Models were used to illustrate approaches based on the areas of inquiry selected by the students. In discussing how to look at context, we reviewed Hudelson's (1989) case study of two children learning English. We began with the descriptions of the children and discussed which essential elements should be included in the profile of an English language learner. We targeted language history, looking at the age of onset of English input and at the sociocultural features of the contexts the child experienced in the home country and the United States. In Hudelson's study, one child was a Marielito from Cuba and the other was Puerto Rican. These journeys to the mainland United States represent very diverse experiences. First we reflected on the implications of these diverse experiences in making sense of Hudelson's data. Then student teachers explored the journey for their focus students, reflecting on how contextual factors influence children's experiences at school. For example, one student, Sonia reported that her focus student who lived out in the country, often came late and was frequently absent and seemed not to "care" about school. When we discussed the case in class, we first focused on analyzing how we as teachers define "care." Were there any other indicators that showed that this focus student was engaged in classroom activities? Students from another district reported how valuable home visits were in connecting with parents. Sonia set up a home visit and found out that her focus student, as the oldest child, had been assuming child care responsibilities for her younger siblings as her mother struggled with a bad case of the flu. As part of her intervention, Sonia set up homework activities that involved the mother in shared reading with her daughter in preparation for a play.

One key principle I applied in the early stages of preliminary data collection encouraged the student teachers to look at each child from a perspective of strengths and not just weakness and to observe the child in and outside of the classroom using "in the midst notes" and noting behaviors and the contextual features of the tasks

the child is engaged in. For example, one student, Lina, reported that her focus student, a rambunctious fourth grader named Jaime, had low scores in reading comprehension and did not engage in sustained guided reading. When Lina observed Jaime in the classroom she found that the books available to read were largely narratives and that he would pick them up, glance at each quickly, and move on to the next. At recess, Jaime was a leader in the playground, organizing games of all sorts. Lina in consultation with the class and the research literature decided to set up a basket system to introduce students to different genres of children's literature targeting informative sub genres. As part of her intervention, Lina would introduce a sample book from the sub-genre, of sport biographies, for example, read a bit and encourage students to select a book to explore for the week. Time on task reading became one of the data sets that Lina used to compare engagement with reading before and after the genre baskets were introduced.

Data collection procedures and analyses figured as key themes in the class discussions and reading. Research questions were designed with a focus first on what student teachers wanted to change, such as engagement with writing for example. After discussing approaches to data collection already used in the classroom, students read published accounts as exemplars, reviewed portions of reports from previous cohorts, discussed their own plans for data collection, wrote a draft of their procedures and brought data sets to discuss and analyze in class. The principle we followed was that of a community of teacher researchers who needed to provide support in the development of the inquiry and supply a record of documentation to and understand how learning unfolded.

Student Teacher Responses

Every year students were asked at the conclusion of the course to indicate their perception of key course activities using a survey. Hearing colleagues' presentations, presentations on children's literature, interviewing expert teachers, reviewing videos of exemplary practices and setting up the intervention as a series of steps are the most highly valued activities. In open-ended responses, collaboration was frequently cited as important in designing the intervention: "The collaboration with colleagues, with the professor and specialists at my school was critical." (BMS-11-2000). Modeling and guidelines were also frequently cited as effective elements: "Step-by-step guidelines, sample works, sample techniques for data collection and analysis were very useful" (BMS-02-2000).

Email communication was perceived as either very helpful by some or not helpful by others. This response tended to reflect the students' experience and access to technology. Those who did use it, used it frequently and rated it highly. As an instructor, I found that email was a very helpful vehicle for jump-starting the process. Students who used it tended to identify an issue to address more quickly and developed a coherent intervention much earlier.

Another approach I use to judge the quality of the teacher research experience is to ask student teachers to make a judgment of their growth in different aspects of inquiry. Using a survey at the end of the course, students are asked to anonymously respond to an array of skills integrated within the course (See Table 1). A five indicates a high rate of growth.

Among the areas where this cohort saw the most growth were: identifying a focus of inquiry, interviewing expert teachers, identifying data collection procedures, analyzing data, and linking data analysis to conclusions. Areas with less growth were the more complex tasks of intervention design, creating a rationale, operationalizing the intervention as a coherent process and monitoring teaching practices in general. Students commented how it is easier to provide a rationale that is based on another teacher's expert opinion than it is to justify an approach through their own empirical research. A frequent request was to provide more examples of teacher research exploring different ways to intervene.

Teacher Educator's Reflections

As I have sought to improve my practice by providing more models, structuring the discourse with greater focus, learning when to probe and when to allow for free exploration, the quality of the teacher research has improved substantially. More student teachers now seem to understand and learn from the process and in more instances their interventions are more focused on reasonable goals and their pupils appear to make substantive gains in targeted areas. Inquiry projects have ranged from tightly focused interventions designed to help a kindergartner learn how to write her name using a multi-sensory approach to more complex interventions

Table 1: Student Teacher Assessment of Growth: Year 5 – Model I

MS BCLAD – N = 11	Means
Areas of Growth	
1. Identifying focus of inquiry	4.1
2. Describing learning context	3.8
3. Interviewing expert teachers	4.2
4. Develop intervention rationale	3.6
5. Operationalize intervention	3.5
6. Identify data coll. techniques	3.8
7. Use process data to monitor	3.6
8. Analyze data to monitor prog.	4.1
9. Link data to conclusions.	3.8

designed to increase students' writing by having students' write letters about their problems to "Mafalda", a witch with big feet who had to cope with the teasing of fellow witches. Helping students come up with a reasonable implementation plan, however, is often the most challenging work.

One key byproduct of the inquiry focus on improving learning has been the sense of empowerment student teachers report in making a difference on their students' lives by changing the status quo. As Marina who worked with one struggling reader using a Montessori inspired approach, with object boxes and acting out letter shapes remarked,

> I had very modest expectations for my intervention, but V is now recognizing letters and sounds that he didn't appear to know in our pre-tests. He has a new-found confidence. . . . I realize now I can really make a difference.

Casting the inquiry/intervention as creating a new opportunity to learn allows student teachers to be advocates for equity within the boundaries of the classroom. The intervention becomes a tool for taking action, a path for moving beyond rhetoric.

Model II—Story of How Pauline
Reconstructed Her Model of Action Research

The secondary English cohort used to begin the action research project with an introduction from an Area III Writing Project teacher researcher who guided students to identify "puzzles" they faced in their classrooms. Topics emerged around curriculum questions, management issues, organizational procedures, and department or school policies. As mid-year student teachers, no one was at a loss for ideas. Students mulled over possible topics and questions for several weeks by looking at student work and their own struggles with teaching. Students worked in weekly response groups helping each other with possible approaches, resources, and general writing feedback as the projects developed. They consulted their resident teachers and university professors in addition to traditional library resources. Through surveys and feedback forms, they assessed student opinions and skill levels. Finally, students presented their papers and artifacts (i.e. student work, lesson plans, documentation, etc.) to their peers at a mini research seminar at the end of the year.

In the first years, some students explored curriculum issues through this assignment, such as leading effective literature discussions, using models at different stages of the writing process, and developing pronunciation skills with English language learners. Others examined topics related to class management and organizational routines, such as procedures for opening class, parent communication strategies. I began to worry that we had missed the opportunity to work together on pedagogical issues when students chose non-curricular topics. When I reviewed the projects carefully, I began to see patterns that helped me scaffold teacher research more appropriately, guiding future cohorts to explore curriculum issues. Although

the assignment allowed new teachers to explore interesting and important issues, I was concerned that as it existed, this project was not furthering all teacher candidates' development of pedagogical content knowledge. To facilitate a culminating experience for preservice students' best thinking about secondary literacy instruction, I planned earlier exposure to the concept of teacher research and embedded inquiry activities throughout the program to integrate the teacher research strand throughout the year. These changes began with the 1997-1998 cohort of nine students and have continued to the present with new adaptations.

Late Phase Version of Model II

At the beginning of the academic year, I began to concentrate on regular reflections that tied preservice students' own learning processes with approaches they use in their classrooms. For instance, at the end of each of the ten class sessions of the fall language arts research and methods course early in the year, we review the strategies I use and each student assesses the relative effectiveness of them in service of the course objectives. These reflections become the basis for a graphic model of each student's own learning processes that accompany an analysis of effective language arts teaching methods at the end of the course. Students create a metaphor for their learning styles (i.e., journeys, gardens, pieces of pottery taking shape) and illustrate what supported their learning as symbols within that metaphor, (i.e., stops along the journey, growth of plants in the garden, phases of development from lump of clay to finished vase). As they present their models in class, students discuss variations in their learning styles and usually discover that what worked for their own learning did not necessarily work for everyone else in the group. That revelation opens the discussion of exploration of multiple approaches to assign-ments—an introductory step in developing skills for classroom inquiry.

Soon after the intensive methods course, student teachers begin planning units of instruction under the guidance of experienced mentor teachers in their Fall classrooms. To foster the development of practical questioning of approaches that they are being asked to implement, three required journal responses guide students' identification and discussion of problematic curricular issues from their teaching. Written in seminar sessions, these entries prompt debate about appropriate strate-gies within specific contexts and help students weigh alternative approaches given an array of classroom factors. At this stage student teachers are beginning to know their students well, and they explore options or defend practices based on situ-ational knowledge. Using seminar time to have these discussions allows me to probe understanding and suggest resources for further research on a particular topic. It is during these discussions that I preview the teacher research project with possible questions and ways to gather data in classrooms. Students do not receive explicit directions for the assignment at this point, but do realize that their inquiry must relate to a curriculum or student learning issue.

Spring finds my cohort in new student teaching assignments where they take over full teaching responsibilities for two classes. We continue our discussions of classroom questions after they have been teaching for a few weeks. At this point I am also scanning weekly journal entries and lesson plan reflections suggesting possible questions for teacher research projects. One year we read Janet Allen's work (1995) to learn approaches for working with reluctant or struggling students, but also to explore a model of a classroom teacher investigating her own practice. In addition to the modeling, Allen also provides data collection tools that can be adapted for many purposes. Students hear a presentation by an experienced teacher researcher who gives an overview of this research approach and spurs student teachers to think about issues they could investigate in their classrooms. Three critical components of classroom-based inquiry are stressed: (a) it is systematic, (b) it is intentional, (c) it is classroom or school-based. This general introduction gives my new teachers a purpose for doing these investigations. They all want to improve their instruction and looking more closely at their classrooms seems reasonable at this point—not another "assignment" to take them away from the work they are trying to do with their students.

These new teachers then focus in earnest on their journal entries, student work, and my observation notes to define a specific question. Using part of each week's Spring seminar sessions to stay abreast of progress on this project, students work in writing groups of their own choosing to help each other along, suggesting resources and new approaches to problems. The group members direct much of the meeting time, but I initiate specific activities to jump-start the groups during several class sessions. The first is a graphic representation of each student's identified question. Interest in drawing differs greatly within each cohort, but most students find value in thinking through their questions and possible roads of inquiry with pictures. Four of the six students in the 1998-1999 cohort reported enjoying and learning from this activity, for example. After graphics are completed, students meet in their groups to explain the pictures and share their investigative approaches to the questions. They develop timelines and work plans, and leave class with a clearer sense of direction.

During the next few sessions I ask students to respond to a prompt about the importance of their questions, review data collection and analysis strategies, share sample papers from former students and experienced teacher researchers, and prepare for our mini-conference.

While the final assignment has not changed significantly over the years, my approach to it continues to evolve, as I create new and earlier opportunities for student teachers to analyze their classrooms. As a result of emphasizing curriculum topics of inquiry before they decide on specific questions for their projects, students gravitate toward concerns about student achievement. Documenting and tracking the examples of student achievement patterns sets the scene for further study. My students then use a variety of resources to support their interventions and alternative approaches in their teaching. Including references from professional journals,

research studies, and experienced teacher interviews enables student teachers to advocate for solutions to questions from a larger body of knowledge. The final presentation has not changed, but filming each speaker during the sharing of "final results" to the cohort seems to elevate the level of importance and quality of each student teacher's ten-minute talk.

Finally, student teachers write responses to each presenter identifying what they learned from the presentation, what similar experiences they have had as teachers, and what data tools and methods of analysis appeared most relevant to the study. These responses are distributed immediately to the presenter and allow everyone to clarify understanding and make connections to their own instructional dilemmas.

Emphasizing curriculum issues has increased the number of investigations focused on pedagogical issues among the cohort. Curriculum topics such as sustained silent reading (SSR), development of oral English skills among English language learners, uses of models in writing instruction, and teaching vocabulary effectively were the focus issues of inquiry in seven of the ten projects the first year of the new format.

A Sample Case: Lana's Story

The following example highlights the pedagogical content knowledge one student teacher developed through the teacher research strand of her teacher education program. I believe the refocused emphasis on inquiry and student achievement throughout the credential year increased her success with her students and embedded an expectation for inquiry into her conceptual knowledge about teaching.

Lana took over instruction of a heterogeneously grouped ninth grade English class at an urban high school at the end of January. Working closely with the resident teacher, Lana maintained a strong focus on the use of writing to respond to literature and attempted to build skills in areas of need as she assessed student work. She quickly took control of the class, experiencing few discipline challenges and went right to work with the assigned curriculum for the semester: "Antigone," a poetry unit, "The Tragedy of Romeo and Juliet," independent reading, and two writing genres. Although she did not identify her teacher research question until I formally assigned the project (about six weeks after she began teaching this class), she raised concerns about her eventual topic—effective use of models in writing instruction—after her first cycle of instruction when students copied sections of her model nearly word-for-word in a Dear Abby-type letter. Although glad that students found her model useful, she questioned their dependence, wondering if "this was a form of plagiarism, or were students simply too dependent on my model?"

After reviewing this first set of papers, she began experimenting with different approaches to writing models and used three texts from her coursework to better understand how to help students develop independent writing skills. Lana admitted being surprised by the expectation that teachers write with their students to model strategies and processes.

> When I first entered the credential program I never thought I would have to do the same writing assignments that I gave my students. I merely thought that I would show them how it is done and then let the students experience the craft of writing on their own. It did not occur to me that many of my students would need to be *shown* how to write. (1999, L 01)

Throughout the year Lana read writing experts like Nancy Atwell who used or created their own writing for students to model particular approaches to writing problems. Returning to these authors as she defined her questions, Lana found practical applications of their ideas and began viewing her students' work differently. "Atwell indirectly states that they will move forward and grow less dependent as they become more mature writers. After reading this I realized that my models should be the students' starting points and not the finishing line" (1999, L 02).

She also reconsidered how research on modeling reading strategies might apply to writing. Reviewing the idea of explicit teaching of skills, Lana realized that when she had demonstrated a particular piece of an essay (i.e. conclusions), her students concentrated on that part and were more successful with it in their own work. Thus, she came to believe that

> modeling in pieces is the key…. The students did not need an entire essay that I had written to show them how to write an essay. Instead, showing them piece by piece, and then letting them create the whole seemed to be a more successful approach. (1999, L 03)

In her next assignment, Lana focused on paragraphs that included the kinds of information required from the writing prompts, to provide students different strategies for accomplishing similar writing goals. Using different fonts and underlining phrases in the models, Lana showed students specific examples of ways to include answers to prompt questions and restate theses, for example. Those models helped students grasp the concepts and apply the same strategies in their own work.

Pleased with the improved writing skills and positive responses from her students, Lana ended the semester and her credential year having a better idea about the appropriate use of models for writing instruction. However, questions remained for her about how much modeling is appropriate and at what point high school students have "truly learned an approach that works for them and that they can experiment with." She left our program feeling comfortable with some effective tools for instruction, yet aware that all of her questions had not been answered. In her final response to the teacher research strand, Lana indicated that the "topic is something I will always work on in my teaching."

Student Teacher Responses

The last two sets of project evaluations included many comments about teaching improvements with a focus on student learning as a result of changes student teachers made in their classrooms based on insights gained from their inquiry:

> It forced me to really look at the project and dig deeper for the real impact —ask more questions- wonder about the answers…If I keep it up, I may be able to anticipate the problems before they arise. (1999, E 01)

Other comments go to the heart of my original goal to increase pedagogical content knowledge. These remarks indicate new teachers who see themselves as ongoing learners:

> I will always be concerned about modeling strategies to continue a successful SSR program, and I need to learn more about vocabulary acquisition. (1999, E 02)

Finally, some students found value in the inquiry process itself:

> This was an important part of the program because it tests our inquiry skills, which we will need when we begin to teach on our own. The ability to identify a problem and investigate it to solve it (is important). (1999, E 04)

Project evaluations also indicated ways to improve this process for future credential students. Suggestions included beginning the project earlier in the year, providing more models, publishing previous students' questions for possible extensions by new teacher researchers, and experimenting with a group inquiry project during fall quarter to familiarize students with the process. Time is always an issue, but this cohort appeared pleased with their accomplishments and the opportunity to investigate their own questions.

Summing Up—Student Teacher Practices
and Perspectives after Graduation

Survey results from both year-end program evaluations and follow-up of graduates affirmed the value of inquiry. Student teachers frequently reported seeing the inquiry project as a way to reconstruct their role as advocate, seeing intervention inquiry as a useful tool for reconceptualizing a problem as a point for inquiry and not a personal teaching failure. This view also shared by us as teacher educator/ researchers served to promote the community of practice. Some students expressed frustration with the demands of carrying out the intervention inquiry project within such a short span of time during a time when they were still learning to teach. This perception is reduced when the inquiry is extended over at least two quarters. Responsiveness of the program to student reflections about the efficacy of program elements was also a key feature mentioned in the alumni surveys as an affirmation of the value of inquiry. More recent cohorts of graduates tended to rate themselves as more able to conduct inquiry to inform their practice in contrast to graduates from the earlier years of the program before the inquiry project was in place.

Some Final Thoughts

As Cochran-Smith and Lytle (1990) have argued, teacher research can be a vehicle for increasing classroom teachers' voices in educational research in spite

of obstacles some in the university community may field against it. When it is practiced with rigor, supported within a community of practice and with attention to student teachers' concerns about teaching and learning, teacher research can be a powerful pathway to explore challenging issues.

Our efforts to introduce new teachers to classroom inquiry practices are intended to help them "empower themselves by adopting a more public and authoritative stance on their own practice, (making them) more likely to create the contexts for their own students to be empowered as active learners" (Cochran-Smith and Lytle, 1990, p. 9). We believe that folding these practices into beginning teaching expectations and experiences sets the stage for ongoing critical reflection as a way of knowing and understanding classroom practice. As teacher educators, teacher research is a source of continual intellectual stimulation. In fact, we find our questions growing with every change we make in our approach to teacher research.

◆ Does teacher research help new teachers become advocates for all of their students?

◆ How do the inquiry perspectives of preservice teacher research become habits of mind?

Closely tied to many traditions of reflection and teacher development, teacher research as an integral strand of a preservice education program provides opportunities for prospective teachers to develop inquiry methods and new ways of understanding their students and classrooms. Teacher action research during a preservice program allows new teachers to systematically analyze their practice and their students' performance, without resorting to whatever approach seems most expedient. Action research can make student teachers and teacher educators systematically rethink their teaching and move them from the lore of generic definitions of effective practice to more empirically-based practice. Recent research on our graduates suggests that novice teachers who have been given experiences in teacher research and who have seen how inquiry can be a tool for action and advocacy as we have cast it, continue to pursue this stance in their practice (Athanases & Oliveira, in press). Future research needs to focus on the longevity of these effects in professional practice throughout teachers' professional lives and on ways to promote inquiry early in novice teachers' careers.

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