Teacher Inquiry
From Knowledge to Knowledges

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Introduction

A concern for the quality of education for all children is prompting educational reform, and educational policies have brought about standardization and testing at many levels. This concern has also drawn attention to the nature of quality in teacher education and to ideas for its reform (Rennert-Ariev, Frederick, & Valli, 2005). A rich body of research indicates the basic knowledges that teachers should possess, including a type of knowledge specific to teachers, pedagogical content knowledge (PCK; Shulman, 1986, 1987), as well as the necessary dispositions and competencies of in- and pre-service teachers (Grossman et al., 2000; Korthagen, 2004; Ross, Lane, & McCallum, 2005; Wilson, Floden, & Ferini-Mundy, 2001).

Shulman (1986) described PCK as knowledge not only of content but also of how to teach that content and "what makes the learning of specific topics easy or difficult: the conceptions and preconceptions that students of different ages and backgrounds bring with them to the learning" (p. 9). Shulman (1987) presented PCK as coming from a study of the content to

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be taught, the sociocultural context in which a teacher is teaching, and the day-to-day "wisdom of practice itself" (p. 8). Hashweh (2005) further described PCK as "teacher pedagogical constructions" (p. 273), that is, individual, topic-specific knowledge that grows in a soil of private, personal knowledge, beliefs, and praxis (understood as the dialogic relationship among theory, action, observation and re-theorizing based on observed outcomes), and connects to other areas of a teacher's knowledge.

Some researchers recommend greater use of videos on "expert knowledge" in professional development (Bausmith & Barry, 2011). While this is helpful for new teachers, they need more than simply knowing what "good teaching" looks like and what research says about effective teacher practice (see van Driel & Berry, 2012, for a discussion of PCK in the context of professional learning communities). Raising the quality of pre-service teacher education requires rethinking how to educate in our schools and in our teacher education classrooms.

In some states, teacher educators are required to assess interns using an evaluation instrument that contains lists of actions that can be ticked off during an assessment observation. Often the instruments also call for the observer to interpret actions and to infer attitudes and dispositions. Such checklists and models are often used, however, without reference to context. Any approach to raising the quality of teacher education based on such standardization of teacher knowledge and behaviors supposes an identifiable, fixed, static knowledge and context. Specifically in teacher education, the use of standardized pre-service teacher evaluation instruments implies that we can identify a set of "best practices" that "work," irrespective of the time, place, or group composition.

Basic competency approaches to teacher education, models that are deemed uniformly expert, and standardized assessment procedures for students or student teachers are rooted in thinking that essentializes human action in an effort to make it law-like and predictable. This type of thinking can go only so far in nurturing the development of Shulman's (1986, 1987) PCK. These approaches do not problematize the underlying epistemology and theoretical bases of the construct of good teaching; rather they limit the role of teacher to "technician" and may even dumb down teaching by reducing the need for practitioners to think (Hughes, 2004).

The literature indicates that teacher educators have a responsibility to prepare new teachers philosophically and practically as reflective "researchers" who are in the habit of systematic, active, and goal-directed problem-posing and are attentive to the processes in which they are immersed (Braun & Crumpler, 2004; Cochran-Smith-Lytle, 1999; Darling-Hammond, 2000; Fendler, 2003; Loughran, 2002). We need to prepare teachers disposed to

draw on the accrued knowledge of the profession and to contextualize their thinking for the challenges of each specific work place:

> Teaching for problem solving, invention, and application of knowledge requires teachers with deep and flexible knowledge of subject matter who . . . can organize a productive learning process for students who start with different levels and kinds of prior knowledge . . . and adapt instruction to different learning approaches. (Darling-Hammond, 2000, pp. 166-167)

An inquiry-based approach to teacher education broadens the tradition of reflective practice and is part of the movement toward an epistemology that validates multiple knowledges.

The Nature of Inquiry: More than Just Reflection

Reflection on one's practice is now commonplace and is considered an essential part of good teaching. Nevertheless, reflection, in and of itself, does not necessarily help a teacher to grow professionally and can be counterproductive if it is limited to technical-rational issues or standardized behaviors on evaluation checklists (Loughran, 2002; Tabachnick & Zeichner 1991). Accepting reflection uncritically can just as easily reify existing personal and/or institutional beliefs, as it can be transgressive (Fendler, 2003). In this study, we understand inquiry as reflective practice that is systematized and pushed to deeper levels (van Manen, 1977) in which a person asks him or herself and others questions about his or her practice in an effort to move beyond or extend his or her current understandings. We looked at inquiry from three perspectives: as a process, as research, and as a stance.

Teacher inquiry as a cognitive process. As a cognitive process, teacher inquiry cannot be taught, but with practice it can grow. Lindfors (1999) identified two natural processes of inquiry in children that are a useful heuristic for considering the types of inquiry that can occur in teacher education classrooms: information-seeking and wondering. We prefer to think of these two processes as anchors of a continuum between fact-finding, if the prospective teacher is looking for technical strategies or "right" answers, and wondering, if the teacher's aim is to construct his or her own answer or avenue of exploration. This process can range from the search for maximally explicit knowledge that is public, universal, and propositional, to fully implicit private or local knowledge (Geertz, as cited in White, 2004).

Teacher inquiry as research. As a research paradigm, teacher inquiry includes the teacher as a co-constructor of knowledge. Distinct

from teacher reflection, teacher inquiry is more systematic, rigorous, and targeted. Unlike earlier process-product models of inquiry (Dana & Yendol-Silva, 2003), it engages in an ongoing, public, professional dialogue. Teacher inquiry research is maximally explicit, tends towards wondering, and generates "knowledge-of-practice" (Cochran-Smith & Lytle, 1999) that explicitly values individually-created local knowledge that is situated in the time and place of its creation.

Dewey (1960/1933) seemed to suggest teacher inquiry as research when he described how reflection involves a state of doubt and a deliberate empirical search "to find material that will resolve the doubt" (p. 12). He noted a purposive connecting of "present facts . . . with . . . other facts (or truths)" (pp. 11-12), such that knowledge derives from a knower's combining empirically experienced events with previous knowledge.

Inquiry-based teacher education is rooted in an epistemology that "engage[s] teachers in the process of producing, as well as accessing, new knowledge. [It allows them to] draw upon established professional knowledge, but also make their own meaning" (Reid & O'Donoghue, 2004, p. 564). This stands in contrast to folk knowledge of teaching, which derives from common sense experience. Inquiry-based knowledge is systematically and empirically constructed by the knower. This view of knowledge removes the distinction between theory and practice and believes that a valid goal of research is the ongoing construction, as opposed to accumulation, of knowledge.

Teacher inquiry as a stance. The kind of teacher inquiry that we seek to develop in our work with the teachers in our program comes from a stance that is critical and transformative, and can be understood as a disposition to wonder. From this stance, knowledge is inextricable from the mind and context of the knower/researcher who works in a professional community of inquiry. Individual knowers become an active part of the creation of their own professional knowledge by posing their own questions and systematically searching for answers. This approach involves methods and procedures that promote (and confirm) participatory responsibility on the part of learners and the willingness of teacher educators to share authority in the pursuit of professional growth.

If we accept as our goal the education of teachers who systematically build knowledge through inquiry, we need to model inquiry in our own procedures and programs. Our actions, perhaps even more than our espoused philosophy, will influence the inquiry in which our pre-service teachers engage. Therefore, our goal was to inquire into the nature of inquiry that we are eliciting at this moment in our teacher education program. Specifically, to see the kind and depth of inquiry that we are

fostering in our program, we conducted an inquiry into the inquiry of student teachers in a fifth-year master's program for prospective secondary language arts teachers.[1]

Our program. The one-year, two-semester teacher education program within which the conversations reported in this article took place is designed to promote analysis of accumulated pedagogical knowledge (i.e., research) in typical classroom settings. The first semester of the program includes a group of methods courses (i.e., literature, writing, reading, and ESOL) as well as experiences in local classrooms. The second semester consists of a ten-week internship, during which our future teachers take responsibility for an English language arts classroom and meet weekly with their classmates and university supervisor in a small-group seminar to debrief and reflect on their experiences.

Our program is premised on the belief that any knowledge grows as a result of action in specific moments in specific places (Wertsch, 1998) and within a particular experiential frame (Berger & Luckmann, 1966) as well as in interaction with peers and mentors with experience of the same situation (Lave & Wenger, 1991). In effect, we attempt to create a pre-service professional learning community for each cohort. We start from the belief that teaching is complex and socioculturally situated, and our goal for content and experiences is not so much teacher "training" as providing a starting point for a lifetime of reflective practice.

Methodology

Data Sources

In keeping with the dialogic nature of our inquiry, in the remainder of this article, we will use "we," "our," and our first names as we discuss the results. Student/teacher names throughout the text are pseudonyms. We began this project in a methods class in the first semester of our program with the full yearly cohort of 30 pre-service secondary English language arts teachers. The focus of the class was language and composition, and our inquiry began as a broad look at how pre-service teachers make sense of writing and writing pedagogy. We also wanted to look at their beliefs about themselves as writers. We were particularly interested in how and where we created space for inquiry in our program.

In the spring semester, our focus narrowed to a new venue: the small-group student teaching seminar. We use the term venue to refer to each of the multiple discourse sites in which learning can occur in a teacher education program (e.g., the classroom, written assignments, hallway conversations, teacher-student conferences). For this seminar, the original 30 students were divided into five groups of six students,

and each group met with a different university professor. At the end of this field experience, students would complete their master's program, sit the state teacher certification exam, and seek their first jobs as teachers. Our research continued with our group of six students with whom we met weekly to discuss their experiences in their field placements.

We obtained permission during the fall semester from all students in the original group of 30 to collect their writing and to audiotape every class. We felt that, by the spring semester, these students were so accustomed to sharing their writing and discussions that having to do so did not influence their production, even in the small-group context. This assumption was confirmed by member checking at the end of data collection.

Our data came from the following sources: (a) course assignments (both the language and composition class in the fall, and the student teaching seminar in the spring); (b) audiotapes of all class and seminar meetings, which were essentially discussion-based (whole class, small group, pair); (c) field notes of the class meetings (Katherine was both a student in the class and Jane's research assistant); (d) student journal entries; and (e) teacher journal entries of our impressions after each class or planning session.

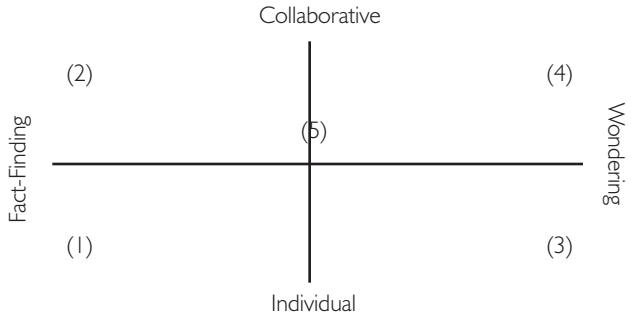
The Analysis: Making Sense of the Data

Using the constant comparative method (Glaser & Strauss, 1967), Katherine began to look for themes in the data as soon as she collected them. In that first semester, as we discussed our observations and reflections in light of the objectives for each class meeting, we noticed that different venues in the program seemed to give rise to different depths of inquiry into aspects of teaching and learning to teach. We began with Lindfors' (1999) two dimensions of inquiry (information-seeking and wondering) as a heuristic. We quickly saw, however, that the purposes of the inquirers were more complex, and we felt that we needed to further articulate Lindfors' two categories into five categories according to the extent to which inquiry was individual or collaborative and whether the answer was believed to be known by someone else (fact-finding) or needed to be constructed by participants individually or collaboratively (wondering).

To visualize this complexity, we developed a framework that illustrates how our five categories might be plotted on two intersecting continua relating what (fact-finding to wondering) and who (individual to collaborative). In Figure 1, quadrant (1) represents individual fact-finding; quadrant (2) collaborative fact-finding; quadrant (3) individual wondering; quadrant (4) collaborative wondering; and quadrant (5) represents collaborative constructing.

In the public venues of our program (i.e., places such as classrooms

Figure 1
Bisecting Continua of Inquiry Categories



and seminars where thought and talk is public, in contrast to private conversations and personal journal writing), we saw all types of inquiry: individual and collaborative fact-finding and wondering as well as a mix of these types. Each type of inquiry is discussed below.

Fact-finding inquiry by an individual. This was the primary form of inquiry in public forums such as whole class settings or the student teaching seminar from students who seek "correct" answers. We noticed that many students had a persistent "tell me how" orientation and seemed to share a belief that it was possible to collect lists of techniques and activities that would eventually make them good teachers. Perhaps the most obvious examples of this type of inquiry were questions regarding course assignments, program requirements, or certification procedures.

Collaborative fact-finding. This type of inquiry was most common in discussions in the methods class about the "right way" to do something. A striking and polemic example concerned how to respond to the diverse dialects of secondary students in public school classrooms. The issue resurfaced over several class meetings in both small- and large-group activities as these future teachers grappled with constructing their approach to appropriate classroom language use by culturally and linguistically diverse students. The purpose of the inquirers in this second type of inquiry was mutual information-seeking from the stance that a correct answer exists somewhere, but no one present had it. They inquired collaboratively about what they might ask or do to get it. The only difference between this and the first category is the fact that more than one person had the same question/s.

Individual and collaborative wondering. These types of inquiry were found almost exclusively in the journal writing (both individual and

"dialog" journals) and in the private conversations. The journal entries contained wonderings about enforcing discipline in the classroom, techniques, and strategies as well as feelings and reflections on issues such as student trust. The private conversations contained a good deal of these kinds of wonderings, which we discuss in the next section of this article.

Mix of individual and collaborative fact-finding and wondering. This type of inquiry was seen mainly in journals (individual and dialog) and occasionally in small-group seminar discussions (primarily concerning classroom techniques and strategies). It also was common in the private conversations discussed later in this article. The purpose of at least one inquirer seemed to be both information-seeking and wondering. Group members (or partners) appeared to agree that there was no single specific answer and that there may be many possible "right" answers. They were aware of the possibility that they could either find or collaboratively construct an answer themselves.

The ways in which different venues in a teacher education program might promote different kinds of inquiry seem a rich area for research, but we do not focus on the situatedness of inquiry. here Instead, we aim to present results from a narrower part of our research into one "learning venue" to which we rarely have access, as it is not usually planned as an official part of teacher education programs, i.e., private conversations between two interns outside of public venues. The conversations that we report here all took place during the second semester of our inquiry into inquiry.

We will apply the framework presented as Figure 1 to analyze the discourse we collected from these private conversations. We will describe what we heard when we listened to the private inquiry between two pre-service interns, outside the official venues of their teacher education program, as they tried to make sense of their practice and their new role as teachers and tried to link the theory they were learning at university to what they were doing in their internship classrooms.

The Private Conversations

Our initial analysis of the collected data, as well as informal conversations during the fall led us to believe that the deepest levels of inquiry, of which we were seeking evidence, may have been happening in a place we could not notice. We knew that two of the students in our six-person seminar group were friends outside of class and planned to meet privately once each week (in addition to our regular seminar meetings) to discuss materials, lesson plans, and their placements. Katherine took advantage of her position as fellow-student to ask them whether they

would be willing to audiotape all of their conversations. We worried at first whether we could trust the data to be natural, but both students (we call them "Bea" and "Zee") confirmed through member checking that the presence of the tape recorder was quickly forgotten. In fact, they worried about the fact that they often ended up with discussions on the tape completely unrelated to the research; as they relaxed, they often went off on tangents and talked about other things in their lives. They even wondered whether they should edit the tape before giving it to us. We assured them that it would be easy for us to locate segments of interest. They also were assured that they could, at any time, elect to not give us any tape that had private conversations that they preferred not to share. To our knowledge (confirmed in member checking), this did not happen, and they shared all tapes of their meetings. Although there was, indeed, much extraneous material, we were easily able to isolate relevant segments. The presence of such extraneous material led us to believe that these data were trustworthy and provided an accurate insight into private conversations between two pre-service teachers about their student teaching.

In a small-scale study such as this one, it is impossible to address the full range of possible areas of teacher inquiry. Therefore, in the analysis that follows, we limited ourselves to a discussion of what we noticed in ongoing conversations between two people about their specific field experiences.

These private conversations opened up the possibility of inquiry about anything and covered the full range of inquiry, from fact-finding to wondering and from information-gathering to questions about ethical and moral issues in classrooms. At some point in their ongoing conversations, these two future teachers attempted to make sense of the following, for which some examples will be presented below: (a) technical aspects of teaching concerning both logistics (i.e., "how to") and their own philosophical stances; (b) teacher/student relationships (trust, group differences, and dynamics); (c) the "correct" behavior of a teacher; (d) the "correct" role of a teacher and the coherence of this role with being human (e.g., reactions to students' passing gas or sleeping in class); and (d) values and principles: their own and broader societal educational values.

It is worthwhile to note that the importance of the right partner in inquiry was borne out in a member-checking interview, conducted after the internship was over, in which Katherine asked the two interns about their interactions. They concurred that, because they knew that their partner was of a similar mind and had similar students, they were able to share much more than they might have done either in other university-related venues or with some trusted partner from outside of education

(e.g., a mother or a friend). Neither of these two students felt that either had "the" answers. They perceived themselves as equally authorized to suggest possible valid answers; they both had permission to ask and to not know the answer. The two women were equal in status and equal in their concerns. In addition, they had deliberately sought each other out and tacitly agreed to help each other by being a sympathetic and responsive listener. As Lindfors (1999) noted, to weave dialogues, inquiry needs a willing partner.

Not only did the types of inquiry in the private conversations vary, this was the only context in which these teachers were able to go beyond technical and even contextual "fact-finding" levels of inquiry to what van Manen (1977) identifies as the deepest level of inquiry (reflectivity): a critical, dialectical reflection that concerns moral and ethical implications of education and teaching that can lead to transformative and emancipatory practice:

> It is on this highest level of deliberative rationality that the practical assumes its classical politico-ethical meaning of social wisdom. On this level, the practical addresses itself, reflectively, to the question of the worth of knowledge and to the nature of the social conditions necessary for raising the question of worthwhileness in the first place. (p. 227)

For us, this is a crucial thought, as we consider critical reflection/inquiry an ethical imperative in our ever more diverse technical-rational (teacher education) world.

What did their private inquiry look and sound like? As soon as the interns gave Katherine the tapes of their conversations, she transcribed and analyzed them using discourse analysis to interpret their meanings: "Our portrayals [in language] of social realities simultaneously describe and constitute the realities" (Garfinkel, as cited in Silverman, 1997, p. 25). After considering both the content and the process of each conversation, Katherine selected only sections that could be identified as inquiry from the total corpus for further analysis. Identification of inquiry was not limited to a specific linguistic form but also included the frame in which the words were uttered, the location of the segment in the whole conversation, the participants' intonation, and Katherine's interpretation of the apparent overarching purpose of the conversation, based on her knowledge of the context and the participants. These interpretations were later confirmed by member checking.

Listening to their voices, reading the transcripts, and thinking about the ways these teachers used language, phonology, and personal style to pursue inquiry raises the question: "How do we hear inquiry?" Clearly we cannot depend on canonical (interrogative) forms to identify it. While

transcribing the conversations, Katherine listened to them multiple times for intonation and paralinguistic features. Listening to the tapes helped greatly in interpreting the transcript and identifying inquiry, especially because we knew these students well and were accustomed to the way that each used tone and voice to signify. In our analysis, we identified inquiry as an act carried out by speaking that might include any surface linguistic form (e.g., a question, a sentence, a challenge, a confirmation, an expletive). Following Bruner (1986), we prioritized the speaker's intent over linguistic form. "As John Searle puts it, it is the illocutionary force and not the illocution that signifies the speaker's intent" (Bruner, 1986, p. 127). Additionally, for Lindfors (1999), inquiry is determined by the inquirer's apparent communication purpose in an interaction: "Inquiry is an act of purposeful communication and not a linguistic structure" (p. 23). The following exchange illustrates this. "Bea" begins with an exclamation, the purpose of which is to invite "Zee" to help her understand the ethical issue of a student's trust in his teacher. This excerpt concerns an entry in a student's reflective journal. The turns are sequential in consecutive lines, except where there is overlap, in which case the overlapping text is placed where it occurred within the first speaker's turn:

> *Bea*: I can't believe he . . . trusts me . . . you know what I mean, like he would . . . include that/Zee: WHEW!!/ in here
>
> *Zee*: well, it's like weird . . . because . . . maybe . . . it's just like a real outlet for so many of them (inaudible)
>
> *Bea*: That's what I'm surprised about . . . I really am . . .

Using our intersecting continua (Figure 1) as a tool, we present examples of the inquiry that we noticed in private conversations between two intern teachers.

Individual fact-finding inquiry. In this type of inquiry, the purpose of one of the inquirers is to get information. The inquirer's stance seems to be that an answer exists and may be known by the other participant, but that she, the inquirer, does not have it. Individual fact-finding inquiry happened less frequently and in a slightly different way in the recorded private conversations than in the whole group contexts described earlier. Here, the "expert" with the answers was not the teacher but a trusted peer. For example, in the following excerpt, Zee is asking Bea how to conduct a poetry lesson. (Bea's contribution is simultaneous with the end of Zee's statement):

> *Zee*: I . . . I wanna start poetry for the last two weeks of fourth period . . .

> but . . . I don't know like where to start. I don't know if I should start with technique and all that . . . or or . . . /*Bea*: I don't think you should . . . /*Zee*: . . . meter and stuff like that? /*Bea*: I don't think you should at all.

Zee seems to be inquiring from a stance of, "I want to know the right way to do this, and you have succeeded, so you can tell me how." Although, in this example, Bea functions as an expert, across all the conversations. either woman is equally likely to adopt this role.

Collaborative fact-finding inquiry. We did not find this kind of inquiry in the private conversations.

Individual wondering inquiry. In the first of our two wondering categories, the wonderer's stance is that she herself may have an answer. To get at this answer, she engages a willing partner to verbalize ideas that will lead her there. We find this similar to the type of inquiry that can be carried out alone in a journal.

This stance was very common in the private conversations. There is a lengthy turn by one of the participants while the inquirer is virtually silent, as seen below. Notice how Zee introduces her wondering about peer editing with a question and a statement and then listens as Bea explains her own recent experience with peer editing. Zee interjects only remarks that sound like acceptance and validation of Bea's experience.

> *Zee*: Also . . . the uh . . . did you do any . . . peer editing?
>
> *Bea*: Augh!
>
> *Zee*: . . . I don't know how I feel about peer editing.
>
> *Bea*: . . . because I put them in . . . I let them pick their own groups. Only because/Zee: Definitely!/ . . .I know that it's sensitive/*Zee*: Yeah!/ *Bea*: Ya know, but that also meant that all the a-holes were together all the jerkoffs/*Zee*: Yeah/ were . . . ya know . . . and . . . So really it was just like a free day to them . . . a few people really/*Zee*: don't you hate that!/ did look at each other's poetry . . . and it was like at that point I . . . I . . . it was my fault that it was/*Zee*: sigh/ like that, so I didn't feel like I could stop it and go "you guys are off task!"
>
> *Zee*: Well, right! What do ya do?!
>
> *Bea*: I didn't scaffold it.

Collaborative wondering inquiry. This type of inquiry was frequent in the private conversations and, in light of our goal of collaborative wondering, is, perhaps, the most interesting category. This type of inquiry moves into van Manen's (1977) third and deepest level of reflection, in which one inquires into the political and social meanings of

educational practices. It is an aspect of thinking that Goodman (1991) cites as fundamental to true reflection and is rare in our technical/rational academies; it is what Dewey (1960/1933) called "intuitive thinking." In the next example, Zee wonders about the value of forcing a high school senior to read Shakespeare. The student, who graduates in two months and will be taking over his family's business, is understandably, in Zee's opinion, not the least bit interested in Shakespeare.

> *Zee*: . . . meanwhile the guy in the back who's gonna be a mechanic is really interested in this whole lesson!!/Bea: right/so but . . . anyway . . . so that's . . . yeah . . . ya . . . it's just weird . . .

The next example presents a different sort of ethical dilemma, in which Bea invites Zee to join her in exploring whether it was correct to have read a love letter in the form of a poem that a student has "accidentally" (Bea is not sure) left in a poetry portfolio that the student had turned in.

> *Zee*: (inaudible, reading poem) OOHHHH, MY GOD!
>
> *Bea*: Course I read the whole thing, you would've right?
>
> *Zee*: Hell yeah! (Zee continues reading)
>
> *Bea*: I wonder if she knows it's in there.
>
> *Zee*: Oh wow . . . this is really sweet. WOW! She really trusts you!
>
> *Bea*: Yeah, I know.
>
> *Zee*: (inaudible start of comment . . .)
>
> *Bea*: For real though, I don't even feel comfortable with it.
>
> *Zee*: Can you imagine if you gave this to a teacher and she lost it?
>
> *Bea*: No, I don't feel comfortable having it right now. I'm thinking about giving it all back to her . . . except for what I need to read.
>
> *Zee*: You should . . . maybe you should give it back to her?

Collaborative, constructing inquiry. This last type of inquiry was a repeating pattern in the private conversations and is both individual and collaborative and ranges from fact-finding to wondering. For example, one participant recounted an experience or made a statement seemingly as an "expert" giving a "how-to" answer. However, on closer examination, the experience or statement seemed to function as a question, making it a mutual wondering: "Could this be an answer?" In the excerpt presented below, Bea (the inquirer) seemed to be saying, "Here's what I did. What do you think?"

> *Bea*: Here's some things that I already have . . . overheads of? /*Zee*:

> inaudible/ And then I did that activity with them . . . that . . . Dr. T did with us . . . where . . . or she told us about it /*Zee*: inaudible/ . . . you pick out a memory/*Zee*: uh huh/ . . . I did the whole positive negative/*Zee*: uh huh/ experience thing and then . . . you make a . . . a chart/*Zee*: uh huh/. A sensory chart? Of sounds, taste, touch, smell, or whatever /*Zee*: I did that/ Did ya do this one? /*Zee*: yeah/ You did do it?
>
> *Zee*: I wrote . . . yeah, 'cause I remember I did it on a . . . a car accident.

Bea presents her proposed solution, which Zee validates, based on her own experience in the methods class to which Bea refers as the source of the idea. These two pre-service teachers seemed to be inquiring from a tacit stance that, individually or collaboratively, a (or some) "right" answer(s) could be constructed, now or at some point in the future, and that they could help each other do it. What begins as individual wondering becomes collaborative when the inquirer invites another to join her in constructing the answer. Together, they open the possibility that they have the authority to collaboratively construct an answer themselves by applying knowledge from a methods class to a real need in their current classroom.

Further Research and Limitations

The above examples offer ideas for practice as well as for further research. In this article, we presented results from a narrow part of our practice that is not usually planned and is generally not an official part of teacher education: private conversations between two interns. From our work, questions arise that can be grouped under two broad issues that warrant further research. The first issue is the situated nature of inquiry, and the second is the nature of inquiry itself. Both have a direct bearing on how we design our teacher education curricula, procedures, and experiences to meet a fundamental program goal: to establish dispositions for inquiry as process, research, and stance in pre-service teachers.

Concerning the possible situatedness of inquiry, it would be interesting to further explore the interactions of task type and context on resultant inquiry types (e.g., a typology of inquiry that tends to occur in private conversations vs. small-group work in a methods class or seminar, in teacher-assigned journal writing vs. student-selected topics, or in journals vs. private conversations). Which program venues and tasks encourage the deepest levels of critical inquiry? How might different venues create qualitative differences in a student teacher's developing stance in regard to the availability of a "correct" answer and on his or her belief about who (teacher or student) can provide answers to questions about teaching?

In regard to the more basic question of the nature of inquiry, we can ask: How does one distinguish inquiry that is information-seeking (in the

belief that someone else knows the answer) from inquiry that comes from a stance that the inquirer him or herself can construct an answer, alone or with colleagues? Looking only at the data, it was initially impossible for us, in several cases, to say definitively that an instance of inquiry was "fact-finding" or "wondering." What are the qualitative differences between spontaneous inquiry and inquiry that arises from a writing prompt suggested by a teacher to a student? We believe that it would be risky to assume that the inquiry that we found in private journal writing has the same nature as what we observed in private conversations. This second issue bears directly on "inquiry" as a fundamental program goal to establish dispositions for inquiry as process, research, and stance in pre-service teachers.

The conversations we analyzed here represent only one set of possibilities for different types of inquiry. Different themes would have been explored by different participants in a different program, in another geographical place, at another time. Replication of this inquiry, especially in the form of practitioner research, would clearly add to the collective knowledge of our profession.

Conclusions

This study grew out of our stance that a habit of inquiry is essential to effective teaching and that one of our primary responsibilities as teacher educators is to model and promote it. We believe that an important implication of this study is that we, as teacher educators, need to think about, look at, and listen to how we encourage different levels of inquiry. We also believe that, as teacher educators, we need to conceptualize theoretical bases and epistemologies that value multiple knowledges in the process of preparing future teachers (Cochran-Smith & Lytle, 1999; Darling-Hammond, 2000; Reid & O'Donoghue, 2004).

Inquiry-based teacher education is important to educate teachers who are able to continually (re)construct their knowledge of each of their students in each of their classrooms as individual characteristics of each classroom and each student emerge. Such an approach requires better understandings of what inquiry classrooms look and sound like as well as support for pre-service teacher inquiry (Fecho, 2000). Inquiry-based teacher education is rooted in our belief that traditional deductive-nomologic (i.e., received, "factual") knowledge (Polkinghorne, 1983) is not the only valid source of learning and, indeed, may be less useful for developing professional knowledge of a context as complex as the classroom.

A lot of reflection on the part of beginning teachers concerns "how to," "nuts and bolts" issues, which these data certainly reflect. The qual-

ity of thought we saw most often in our various program venues was "routine" (Dewey, 1960/1933), concerned with authority, tradition, and external correctness. This was a dilemma for us because our own stance as teacher educators is that we need to encourage more wondering about issues in education and in our society for which no one correct answer exists. Our goal was to educate teachers who were not only empowered to pose difficult questions and search for solutions but also to feel that searching is part of their professional responsibility.

A stance that values multiple knowledges removes some of the distinction between expert and novice. It creates authentic support for a lifelong learning approach to teacher development that can be embedded in a teacher education program. When we adopt this stance, we communicate a disposition to pre-service teachers that all teachers, no matter how many years they practice, can engage in interrogation of their practice, of their context, of the rules and norms of their profession, and of the nature of knowledge itself. Our goal as teacher educators becomes not only to prepare teachers who are competent in the best research-based practices but also to prepare teachers who understand when and where selected practices are most effective and appropriate.

As teacher educators, we recognize that much learning can happen outside of our immediate sphere of influence. Consistent with our desire to encourage autonomous thinking and learning, and our desire to share authority in the pursuit of professional knowledge, we believe it would be valuable to include "official" space in teacher education programs for private conversations, even if we do not control and cannot plan them. These "learning venues" seemed to be perceived by our pre-service teachers as the safest place for a wide range of inquiry, as one might intuitively expect. Indeed, the data indicate, and the interns in this study concurred, that private conversations were more valuable and valued than were any other venue.

The issue that this raises for us is how to incorporate private conversations into the designed curriculum of a teacher education program so that we can tap the rich and varied inquiry that happens there, while maintaining the nature of this kind of interaction. One way that we have done this is to rethink the formal weekly seminar. We encourage students to form self-selected pairs (or trios) to meet on their own, with no instructor present. Taking turns, the student/teachers prepare a summary report of their private "seminar" for the university instructor after each meeting that includes the content and outcomes of their discussion. We acknowledge each report, add any comments that we feel are appropriate, and offer to join them should they wish to invite us (they don't!).

The weekly report from the private meetings functions like a journal, and the student/teachers have full control over what they share from their meeting. They also have full control over the content of each meeting. Student/teachers can talk to each other about any aspect of their field experience. Beyond a general instruction to "talk about your week in your field site," we suggest that they start each meeting by sharing one success and that they monitor their talk to avoid allowing the meeting to become a mutual complaint session. As teacher educators, we remove ourselves as the immediate "expert," while remaining available if our advice is requested. We still have access to the students' growing professional knowledge through lesson planning assignments and classroom observation projects.

Certainly all types of inquiry have their place in teacher education, but we wonder whether the circumstances of our programs do enough to facilitate wondering. Too often, an unwanted side effect of attempts to standardize teacher quality is the encouragement of a "how to" orientation of many student teachers (i.e., the "idea file" mentality), even while professing a desire to develop competence in wondering types of inquiry that validate systematic teacher knowledge as on par with "scientific" research. We hope that, by looking for and identifying inquiry in the preservice experiences that we create, as well as by working to model our own stances on the types and levels of inquiry in which we encourage pre-service teachers to engage, we can become better attuned to ways of promoting deeper levels of inquiry in our program.

We do not pretend, from so little data, to draw any conclusions or make generalizations. However, we hope that the findings presented here will engage others in similar inquiry, just as they continue to inform our own ongoing planning and inquiry into our practice. We believe that an inquiry stance in our own work as teacher educators is a positive first step, and we hope that our reflections will, in turn, invite others to reflect and converse on this issue.

Note

[1] This research was conducted under unfunded IRB protocol 2001-848.

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