Developing Action-Oriented Knowledge among Preservice Teachers:
Exploring Learning to Teach

By Frances Rust & NancyLee Bergey

Does teacher education matter? If it does, in what ways does it matter? What is the evidence? These questions are at the forefront of many policy-related discussions both here in the United States and abroad, and there is much at stake in who answers these questions and in the ways in which they are answered. On the one hand, there are those who take a broad view and claim that little is known (Cochran-Smith & Zeichner, 2005); on the other hand, there are those who claim that much is known in the general sense but that this general knowledge is inherently subject to contextual interpretation and enactment (Darling-Hammond & Bransford, 2005). Related to the latter viewpoint is the perspective that there is a knowledge base for teacher education (Reynolds, 1989) that blends theory and practice.

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Hiebert, Gallimore, and Stigler (2002) suggest that developing and drawing from this knowledge base in teacher education resides in systematic studies of practice that are shared in ways that support an alignment with cognitive theory and can lead to gradual improvement of the practice of teacher educators.

This is what LaBoskey (2012) describes as research that informs practice, that is, research that enables conversations around practice so as to improve practice (Ball & Cohen, 1999; Grossman et al., 2009); research that enables teachers to craft instruction to meet the needs of the learners in their classrooms (Cochran-Smith, 1999; Tomlinson & McTighe, 2006); and research that enables teachers to discern and draw on those "funds of knowledge" (Moll & Arnot-Hopffer, 2005) that shape and inform their students' understandings of and participation in the world. As Wideen, Mayer-Smith, and Moon (1998) contend, such research should embrace, the ecology of teacher education itself:

> The ecological approach we propose begins with a more eclectic methodology whereby efforts are made to bridge programs of research. Such an ecological approach would see researchers attempting to link their research to, and ferret out, its meaning as it relates to the social and cultural conditions where beginning teachers will teach, the needs of beginning teachers, and the values of teacher educators. (p. 168)

We see in this special issue of *Teacher Education Quarterly* a critically important opportunity for the type of systemic, ecological approach to research on teacher education that Wideen, Mayer-Smith, and Moon (1998) and Hiebert, Gallimore, and Stigler (2002) are calling for.

Our Study

In this article, our intent is to focus in on one elementary teacher education program and, specifically, on the ways in which that program has grappled with and continues to grapple with the questions of whether and how teacher education works relative to our claim that ours is a program committed to social justice and designed to "prepare ethical, reflective, collaborative, visionary teacher-leaders" for urban schools. Clearly, the values implicit in this mission are among those qualities that Gladwell (2011), in his discussion of the difficulties implicit in rating scales, finds "hard-to-observe" (p. 73); but, if we are set on graduating new teachers whose ways of interacting with their students as well as with colleagues, administrators, parents and other policy-makers exemplify our mission, then, it seems to us essential that we find out what is working toward those ends in our program and think about how to share our understandings with one another in the community of teacher educators. For, as Hiebert, Gallimore, and Stigler (2002) suggest, if there were a focused, shared conversation about teaching and learning, we could begin to build a genuine knowledge-base for teacher education that enables us to stand behind claims that teacher education works.

We have chosen to study our program in terms of what Shulman (2005) describes as its "signature pedagogies," that is, "the characteristic forms of teaching and learning . . . that organize the fundamental ways in which future practitioners are educated for their new professions" (p. 52). We posit that there are essentially four general signature pedagogies in teacher education:

* Choosing students / shaping cohorts
* Curriculum
* Field Work / Clinical practice
* Inquiry and Reflection

Taken together, they provide markers or guideposts for mapping the territory that is teacher education and learning to teach—hence, its ecology. We suggest that these signature pedagogies function as a frame for enactment of teacher education *programs* and that each of these signature pedagogies when deconstructed holds within it other pedagogies that should align in one way or another with a program's mission. Looking deeply then at a program's core pedagogies should enable teacher educators and researchers to determine the extent of alignment between pedagogies and mission, hence, as assessment events, and as the learning opportunities that Clark and Rust (2006) suggested should be inherent in every assessment.

We further claim that, because teacher education is (or should be) essentially focused on professional preparation, the programmatic pedagogies of teacher education should enable opportunities for what Grossman and colleagues (2009) describe as representation, decomposition, and approximation of practice. Here, we look at a key pedagogy of our teacher education program: assessment as inquiry. We focus specifically on the program's summative assessment, the inquiry portfolio, because it is designed to draw across the students' entire program experience so as to enable our students and us to trace their professional growth with evidence of their and their students' learning. Using the lens provided by Grossman et al (2009) as we study the inquiry portfolio, we want to know if and in what ways the experience of the program has enabled our students to integrate theory, inquiry, and action so as to enable what Urzúa and Vásquez (2008) describe as action-oriented knowledge (AOK), i.e., the representation and formulation of practice into concepts, pedagogical techniques, and strategies that arise among practitioners in problem-solving and decision-making situations. Thus, our focus here is both narrow and broad in the sense that Wideen, Mayer-Smith, and Moon (1998) describe:

> We can no longer regard courses, programs, and the other participants and structures of teacher education as unchallengeable and operating in isolation. These features must be seen as interconnected and regarded as examinable and problematic in both research and practice. (p. 169)

The Program

The master's program is designed to prepare teacher-leaders for urban education. As Kumar, Pupik Dean, and Bergey (2012) who studied the elementary program note,

> The program's emphasis on urban issues in education might be summarized by its focus on two themes: (1) social justice and the question of what a just system of schools should look like and (2) issues of poverty, racism, and immigration

that have played a role in shaping schools in large, post-industrial cities (Sugrue, 1993). Our students may arrive with preconceptions of urban communities, but we aim to complicate these ideas for them, resisting both essentialization and a deficit perspective. (p. 86)

In the elementary program, we generally admit 40 students: about half of the students are local; the others from around the country. They choose the program for two reasons: its emphasis on preparation for teaching and potential leadership in urban education and its position in a renowned university. We choose them both for their professed commitment to urban education and their capacity to engage in a rigorous and, in some ways, high-pressured, graduate program. Very few come directly from college. A small number (2-4) will have had some experience in urban education with programs like City Year but the majority enter with anywhere from one to 10 years experience in fields as diverse as law, architecture, public relations, and theater.

Students move through the program as a cohort beginning together in July and finishing in May. From their first days, they are taking their courses together and are simultaneously engaged in the neighborhoods in which they will be teaching—a curricular approach specifically intended to enable students to use the community assets of the neighborhood, the cohort, and the university to shape and strengthen their classroom teaching practices within a continuously evolving process of inquiry, critical reflection and revision (Murrell, 2001). (See Figure 1.) As Kumar and colleagues (2012) point out,

> . . . the program's design draws on sociocultural theories of learning that emphasize the appropriation of mediational tools through experiences of legitimate

Figure 1
Outline of Elementary Teacher Education Program

Term / Theme	Classes plus mini-courses Fieldwork	Integrated assignment
I - Children and Neighborhoods	2½ plus 2 32 hours total	Neighborhood Study
II - Learners and Learning	5½ plus 1 2 days/week	Portrait of a child— sections for each course
III - edagogy	5½ plus 1 2 days/wk	Inquiry into practice— analysis of 4 lessons with framing question
IV - Curriculum	1½ (intensive) 4 days/week	Integrated curriculum
V - Praxis	1 5 days/week	Inquiry Portfolio

peripheral participation (LPP) and boundary crossing (Lave & Wenger, 1991; Tsui & Law, 2007; Tsui, Edwards, Lopez-Real, & Kwan, 2009; Wenger, 1998). This framework suggests that individuals learn by being involved with people who think in different ways and by having experiences that challenge them to rethink prior assumptions. (p. 88)

In a very real sense, this framework describes what Wideen et al (1998) name as the ecology of a program in that "everything is connected to everything else" (p. 168).

Summer

Students begin in the summer by conducting an ethnographic study of the community in which they will be teaching. The program structures students' entry into the student teaching neighborhood in a variety of ways. An introduction to the city itself and specifically to the effects of de-industrialization and the pockets of poverty that were left in its wake are accomplished through "Mural Tours." Philadelphia is known as the City of Murals, and, since a careful process to insure that the murals reflect the desire of the neighborhood residents is followed in the creation of murals, the murals really tell the story of the neighborhoods. The Mural Tour occurs on the second day of orientation to our program each July. The morning is spent with everyone exploring the neighborhood of the University, and, in smaller groups in the afternoon, students investigate an individual neighborhood usually by following a pre-arranged tour route.

On the third day of orientation and following these general tours, students are led into the neighborhood of the school where they will student teach by a "liaison," generally a graduate of the program who has student taught at that school. The liaison will have found a resident to serve as a guide for the tour so as to provide an emic perspective on the neighborhood, and will have scouted some neighborhood resources that the incoming students might contact as part of their neighborhood study. Subsequently, students spend approximately six hours a week during their five-week summer term volunteering in a summer youth program while continuing work on the neighborhood study. This initial phase of the program is purposefully designed to introduce the school's neighborhood and help new students feel comfortable in it.

Fall

In early fall, students are asked to use their fieldwork time in several ways: The first is by observing their Classroom Mentor (cooperating teacher). They get help interpreting what they are seeing from both the Classroom Mentor and a Penn Mentor (field supervisor). We are well aware of what Lortie (1975) describes as the apprenticeship of observation. This activity is designed to begin for our students the process of making the familiar strange, that is, to expose the complexity of teaching that is often hidden from them as students in the classroom. A second use of the fieldwork involves developing a portrait of an individual child (Term II). This assignment is followed by analysis of lessons that each student conducts in each of the curricular

areas—math, science, social studies, and reading with adaptations for children with special needs and speakers of English as a second language (Term III).

Term II: Through a series of formal and informal measures, each student develops a profile of a learner. This is intended to be an in-depth examination that includes a Carini-style descriptive review (Himley & Carini, 2000) as well as investigation of the child's level of skill and knowledge attainment in the content areas of math, science, literacy, and social studies. The assignment is read and graded by each of the content area instructors as well as the instructor of the field seminar. Although students often appear anxious to begin teaching, and sometimes express frustration because they do not understand, prospectively, the value of this work, we have held to this assignment because we have seen demonstrated over and over again that, in the process of completing it, they learn how important to the work of teaching getting to know one's class is.

Term III: In Term III students learn about lesson design. During this phase of their program, they develop and implement a lesson for a small group of students in each of the content areas—math, science, literacy, and social studies. These lessons are planned around a question about practice that each student identifies as part of their inquiry work for their field seminar class. The resulting lesson plans are checked by the appropriate "methods" instructor as well as the Penn Mentor, and, sometimes, by the Classroom Mentor, before they are acted upon. The Term III assignment for each of the five areas including the seminar is an analysis of what the student has learned in the process of conducting these lessons. It ends with a tentative answer to the question the student has posed. The assignment is read and graded by each of the content area instructors as well as by the instructor of the field seminar.

Spring

Students move into the spring semester with full time student teaching and developing and teaching a curriculum unit that integrates several major curricular areas. By the end of the Spring, they will have completed their inquiry portfolios.

Term IV—Integrated Curriculum: During the early part of the spring semester, students' use backward design (Blythe, 1998; Tomlinson & McTighe, 2006) to develop a curriculum unit that integrates at least two of the major elementary content areas around a theme that the student and Classroom Mentor have agreed upon. Ideally, this unit, or part of it, is taught during the two weeks when students assume full responsibility for their classroom in the late spring (part of the state mandate for certification). Although the curriculum is written in Term IV, it is enacted in the final term, and so discussion of its impact generally occurs in the student's inquiry portfolio.

Inquiry Portfolio: The inquiry portfolio is not described as the Term V assessment. This is important for a number of reasons the most salient being that this

assignment is intended to be and is pursued across the program as the students' culminating reflection. Hence, the inquiry portfolio incorporates and builds on all that has come before. It is presented in a website-based format and takes the place of a Master's degree examination in our program. The portfolio is focused around a question that has engaged the student throughout the program, and the student bolsters his or her explanation of current understanding with artifacts from across the year. These artifacts may include examples of children's work, entries from the student teacher's journal, assignments from classes, pieces of previous integrated assignments, and, increasingly, annotated audio or video segments. These items are drawn from summer, fall, and spring courses, studies, and field work, full-time student teaching in the Spring, readings, and conference activities—hence, a culminating and summative study.

Method

For this study, we use one inquiry portfolio as representative of the larger body of eighty inquiry portfolios (40 each year) that we have examined. For the whole, we have drawn extensively on work done by Kumar, Pupik Dean, and Bergey (2012) who focused on the ways in which students' attitudes and perceptions about urban neighborhoods and the role of teaching changed over the 10 months of the program. They used several assignments from the summer—students' reflections on first entering the neighborhood of their school, a neighborhood study, specific readings related to equity and social justice (Murrell, 2001; Moll, Amanti, Neff, & Gonzalez, 2005; Nieto, 2006; Sugrue, 1993; Yosso, 2005). Kumar and colleagues looked for evidence of these assignments in the spring semester when students completed curriculum units and their inquiry portfolios.

Following on that work and using a grounded theory analysis (Strauss & Corbin, 1990), we examined preservice students' descriptions of and reflections around practice as indicators of their growing action-oriented knowledge (AOK) (Urzúa & Vásquez, 2008), i.e., the representation and formulation of practice into concepts, pedagogical techniques, and strategies that arise among practitioners in problem-solving and decision-making situations. Specifically, as we followed Kumar and colleagues' (2012) study of echoes of the summer, we examined the portfolios to determine which elements of the whole teacher education program—activities, readings, specific teaching strategies, program structures such as field experiences and cohort design—figure in preservice students' descriptions of their practice. In this way, we have tried to capture a sense of the program's ecology so as to determine the extent to which our teacher education program holds together as a coherent effort aimed at preparing "reflective, collaborative, visionary teacher-leaders" for urban schools.

Tracing Learning to Teach through Janet's Portfolio

We have chosen Janet's portfolio not because it was the best (although we

acknowledge that it is among them). We have chosen it because it serves as an exemplar showing ways in which the program's five core assessments seem to scaffold the development of action-oriented knowledge (Urzúa & Vásquez, 2008) among our students.

Summer: Janet Enters the Neighborhood

Like many of the students who come into the program without prior experience of urban schools and neighborhoods, Janet, an Asian student from the west coast with a bachelor's degree in the history of architecture, had developed a set of expectations about the city, its neighborhoods, and its schools. In her reflection paper describing the experience of entering the neighborhood she wrote, "I had expected it to be … dilapidated and run-down … judgments formed due to other people's perceptions." After the neighborhood visit, Janet wrote:

> In contrast [to what I had been lead to expect], my tour … was very eye opening … The neighborhood carries [a] sense of culture, diversity of peoples and character … Coming from an architectural history background, I was immediately struck by the diverse mixture of architecture as well as … the quality of the upkeep of the homes.

While not all students are influenced by the architecture and while it may take some several days of interaction with children, families, and community during the summer, the experience of gaining new perceptions seems to be universal and to be supported both by the field experience and the course, School and Society, that students take along with it.

Fall: Term II—Janet's Portrait of a Child

Initially, developing a nuanced portrait of a single child is often resisted by many students. They would rather be teaching and working with the whole class. They often express reluctance and feelings of awkwardness about singling out one child and learning how to observe, interview, and analyze the child's work and their conversations. They question the relevance of knowing one child this well. Janet was no exception.

For the Portrait of a Child, Janet studied a child whom she described as standing out not because he was a top student or low functioning student but because he was kind to his classmates and respectful of authority. At the end of her paper she remarked:

> Conducting this child study project was a challenge in capitalizing on little moments, the nuances of behavior. I have learned to find importance in the day-to-day, mundane actions that we often take for granted as "normative behavior."

Later she writes:

> Certainly going through this process has influenced the way that I will approach my future classroom. In conducting these interviews, I have been able to establish a

trusting relationship with my child study student. If he were a student in my class, I think that this establishment of trust would have lasting benefits in the child's future learning success, as he feels comfortable approaching me to ask questions or bring up concerns…

I have learned, though, … that observing a child is an ongoing and continuous process that will never be complete. While this may be discouraging, making the effort to conduct these observations is certainly an important and worthwhile task. There are so many instances when students are neglected because it is impossible to gain a good sense of their strengths and interests. I think that making the effort to meet and talk with each student individually can prove to be a valuable effort in the long run, helping to establish trusting relationships with one's students.

The action-oriented thinking that Janet demonstrates here is not unusual. As students step back and reflect on the experience of coming to know one child well, most come to the realization that it is essential to find ways, as Janet has voiced here, to come to know all of one's students. Their journals, like Janet's show how the observational and record-keeping techniques that they adopted for the assignment are gradually becoming staples to support the careful planning for small group instruction that is core to the Term III assignment.

Term III—Janet's Inquiry into Practice

The question around which Janet framed her Inquiry into Practice was, "How can I plan and implement lessons that encourage participation and individual students' voices to be heard while also establishing a collaborative learning environment?" For her Term III assignment, Janet experimented with a variety of groupings for different content area lessons while simultaneously assessing the role of the individual student, the group as a whole, and her role as the teacher/facilitator. At the end, she wrote:

Building a classroom community can thus be facilitated through the thoughtful planning of lessons that incorporate and take into consideration the diverse needs and skill levels within a class.

And specifically (see Figure 2):

One important idea to consider is that students' silent voices do not mean that they are not engaged. There are certain zones of comfort that you can tap into with students who do not feel comfortable talking in the large group. These students may excel in the written word or prefer discussions within the small group or paired setting. I think it is vital and imperative, then, to have multiple modes of discourse and assessment in a class as a means of fairly taking note of which students are contributing to a classroom learning community, verbally or not.

At this point in the program, students have developed a website in which artifacts from the summer and fall assignments are available. They situate their Inquiry into Practice (Term III assignment) relative to the child, class, school, and

Figure 2
Learning about Multiple Modes of Assessment—Term III

Harry's drawing about going to his grandfather's house and having a picnic.

Janet finds that a child's drawing can work for formative assessment and can open up opportunities for language development.

neighborhood in which they have been immersed since the summer, and they structure their presentations relative to what they are learning about teaching math, science, literacy, and social studies. Like Janet's, their questions, seem to combine a sense of place and people with a growing understandings of the complex work of teaching. In their effort to answer their own questions, they, like Janet, move into writing about instructional dilemmas, taking action and reflecting on it, drawing on evidence of their own and their students' learning. For us, their instructors, our focus turns to our students' readiness to move into a full-time classroom commitment.

Spring: Janet's Full-Time Student Teaching

Given the broad developmental range of children in elementary school and the variety of teaching techniques and skills needed, we encourage our students to choose a second school placement for the spring. Because of the focus on test preparation in some hard to staff urban schools, many students choose a high-functioning school for this placement. Janet is one who took the opposite course; she moved from one of the best schools in the district to a more typical, although still effective, urban school.

In January, Janet began on the full-time student teaching phase of the program. She chose to move into a new school and a new neighborhood. She chose a neighborhood with a diverse immigrant population hence meeting the needs of English Language Learners became very important to her. Meanwhile, Janet's feeling of comfort in these urban neighborhoods continued to grow as evidenced

in her description of her morning trip by public transportation into her new neighborhood:

> Once we edge closer to [street name] and the storefronts shift from English to an assortment of Asian and Spanish languages, the neighborhood characteristics dramatically shift. The houses narrow in width and height, the streets become increasingly more compact and crowded, and commercial skyscrapers are replaced with neighborhood staples … I cherish the sense of comfort that overwhelms me every day as I step off of the …bus … The four corner intersection envelops me, welcoming me to the neighborhood with open arms. I feel at home, even though I am worlds away from my temporary dwelling in West Philadelphia and even more so from my permanent home in southern California.

Term IV—Janet's Integrated Curriculum: Janet's growing sense of comfort with the neighborhood of the school along with her own background in architecture may have contributed to her choice of "Place and the Neighborhood" as the topic for her curriculum unit. In her context and rationale statements, Janet cites The National Trust for Historic Preservation that describes schools as "important anchors that help define and sustain our neighborhoods."

Janet introduced her unit by showing the children a photograph of their school from 1926. The children recognized the school immediately but then began to notice what was different in the picture: the cars, stores, even the signage and the shape of telephone poles. This introduction was followed by having the children learn about architectural features (see Figure 3), take several neighborhood walks

Figure 3
Learning Different Architectural Features
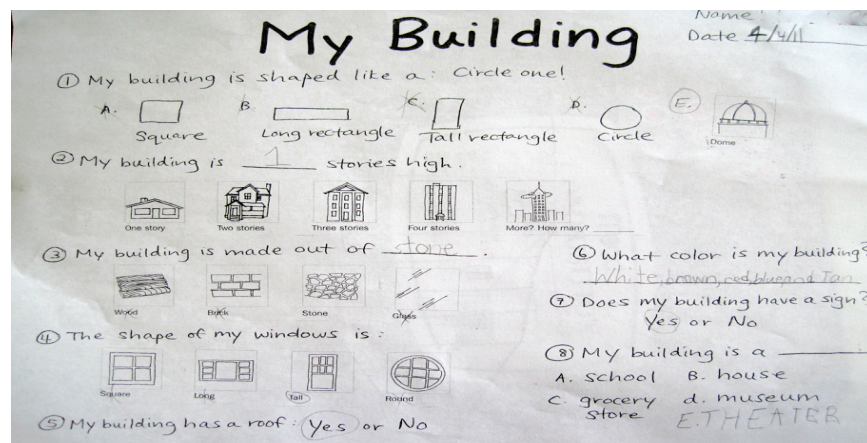
This new school had a significant number of English language learners. Janet strove to accommodate them, allowing them to show what they knew by designing worksheets that relied on visual information.

to locate these features (see Figure 4), design a building to fit into the neighborhood (see Figures 5 & 6), use maps, and, finally, have each child make a personal map to show what was important to him or her in the neighborhood (see Figure 7).

Figure 4
Different Map Worksheets for Children Who Were Proficient
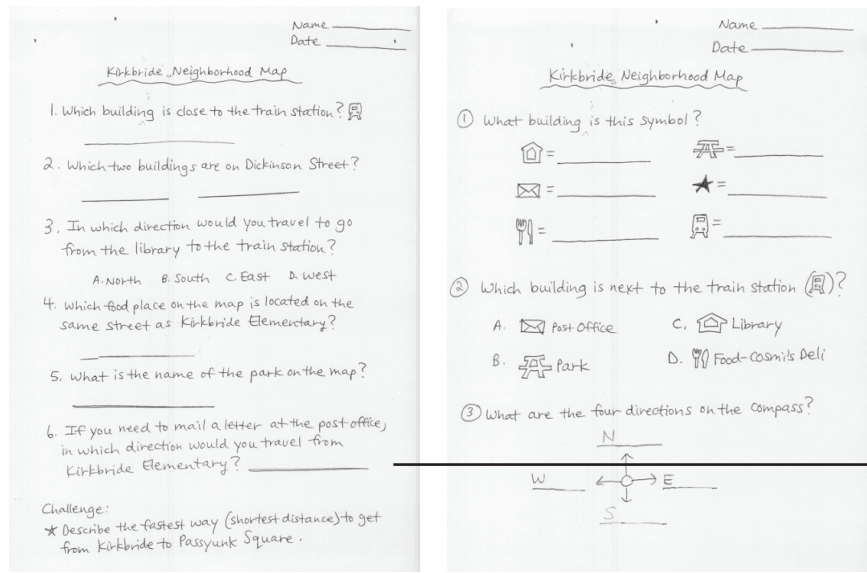*in Reading English and Those Who Were Not*

Figure 5
The Task—Developing Assessment Opportunities
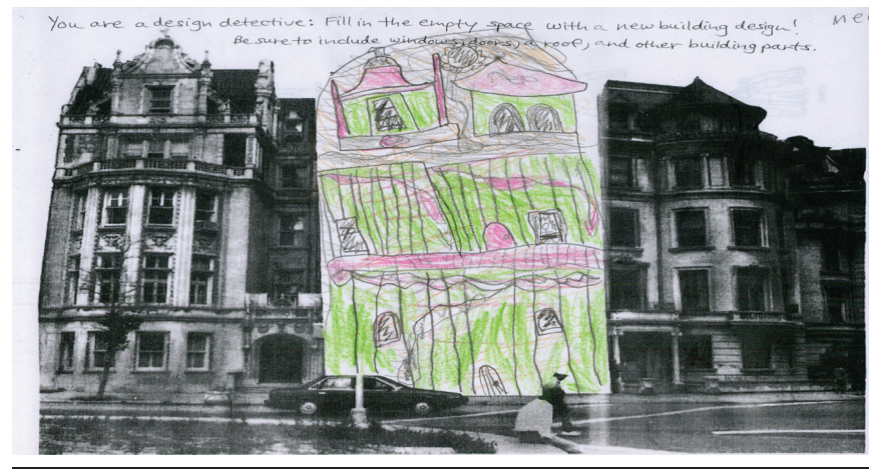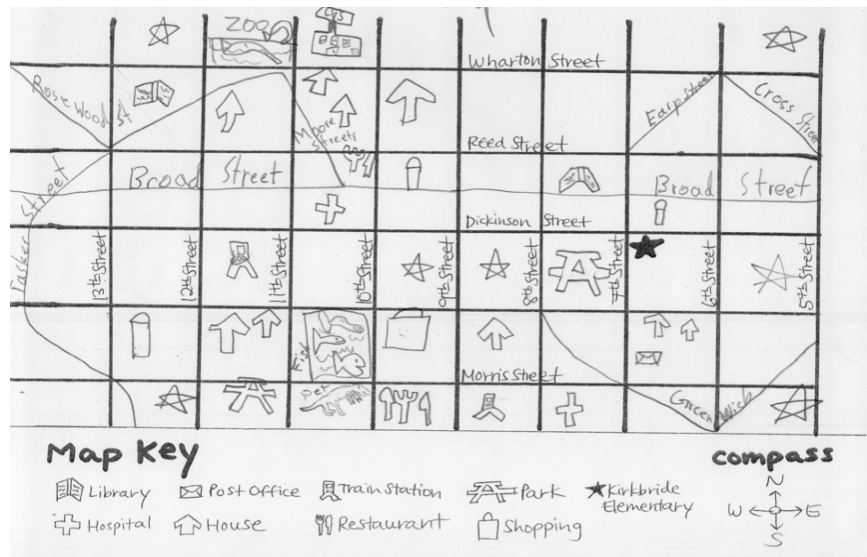*in Which All Learners Feel Supported and Challenged*

Figure 6
A Variety of Responses to the Design Task

Figure 7
Individual Maps Showed Students' Views of Neighborhood Assets

As noted earlier, students are required to develop an integrated curriculum in which at least two and often three content areas are brought together around what Blythe (1998) and Wiggins and MicTighe (2005) describe as "overarching" or "enduring" understandings and are intended to be accessible to all students in the class (Tomlinson & McTighe, 2006). The structure of the assignment calls for their describing constraints they are likely to experience, standards they will try to address, and assessment activities upon which they will draw. Thus, Janet's effort to develop a curriculum that would be accessible to all of her students, even those for whom English is a second language, is not unusual. Neither is it unusual that her work would be informed by the summer and fall assignments since these are purposefully intended as scaffolds for the students' full-time student teaching experience. As a faculty, we expect to see elements of these assignments informing both the students' construction of their units and their inquiry portfolios.

Janet's Inquiry Portfolio: The inquiry question that Janet developed during Term III, "How can I create a classroom learning environment in which all students are supported and challenged?" becomes the focus her of her portfolio and thereby enabling her to reach back to her experiences during the fall and early spring terms. In her portfolio, Janet highlights various versions of worksheets she developed so that students whose reading or writing of English were at different levels would be able to participate equally (see Figures 3, 4, 5, 6, 7). Relying on her own strong visual sense, Janet developed symbol-based activities that allowed her English Language Learner students to show their full understanding (see Figures 3, 4, 7)

Despite her and most of her students' evident success, Janet continues, even at the end of her portfolio, to ask hard questions:

> I am left with many questions after my student teaching experiences: Firstly, it is discouraging that there are some students who are still left behind. How can I implement a curriculum that is differentiated and supportive yet still challenging for students who are above grade level? In addition, in attempting to differentiate, how does one successfully do this on a consistent basis for every lesson and for each subject? How can you successfully challenge students who are always finishing early, how can you continue to motivate and engage students who always do their work, but make sure that they are being challenged and learning as well? Finally, how do you reconcile such vast differences in levels across a classroom of students and still maintain a cohesive, supportive, welcoming, and thriving learning environment?

However, she has provided herself some tentative answers particularly around assessment (see Figures 5 and 6) with which to start her career:

> I think that many of the answers to these questions must be built from day one in the establishment of a positive classroom learning environment. I feel like it is so difficult to make sure that all students are on the same page. As such, the time spent in the planning stages before a lesson is implemented is so vital to determining

what you as the teacher want each individual student to gain from a lesson. Then, you can design assessments or modify your direct instruction in such a way as to provide the necessary skills and tools for the lesson's goals. Thereafter, you can structure guided practice so that students are again receiving modeling of the skills and behaviors that you teaching. Finally, when students go to independently practice the skills of the day, you can circulate and provide those students who need extra support with assistance.

Analysis

We began our study with the question of whether and to what extent our students are able to embrace the program's commitment to social justice and its claim that it "prepares reflective, collaborative, visionary teacher-leaders" for urban schools. We chose to use the five core assessment events of the program as the lens through which to study our students' progress and, as a way to go after what Gladwell (2011) describes as "hard-to-observe" (p. 73) program qualities. Following Clark and Rust (2006), we have looked at those assessments as "learning opportunities" and have asked, "what is it that our students learn relative to the program's mission and goals?" Are they developing the action-oriented knowledge that Urzúa and Vásquez (2008) suggest arises among practitioners in problem-solving and decision-making situations? In short, is the ecology of the program such that students find support to experiment with and adopt new understandings of teaching and learning?

Giving Meaning to "Urban"

Janet's story surfaces the most obvious answer, that is, that our students' understandings of "urban" and "urban schools" change—sometimes, as in Janet's case, quite dramatically. She arrived with preconceptions about urban schools that she candidly describes: "I had expected it to be … dilapidated and run-down … judgments formed due to other people's perceptions." What she initially discovers is an unexpected vibrancy in the community and a diversity of architecture to which her undergraduate experience made her especially sensitive. We can watch her understanding of the breadth and depth of the community's assets grow such that, when she could move to a more affluent and better resourced setting (as about a third of her colleagues do), she chooses not to. Hers is not a romantic vision. Rather, she seems to have interpreted her summer readings of Moll et al, (2001), Murrell (2001), Sugrue, (1993), Yosso (2005), and others as a mandate for action. So, she situates herself solidly in the community and takes up the challenge of teaching her students about their community—both the neighborhood and the city.

Developing Practical Skills toward Becoming a Teacher

In the process, Janet demonstrates another major learning that she and, actually, all of the students in the program have apprehended: that is the capacity to plan and the capability of enacting a curriculum unit that is targeted thoughtfully and

appropriately at her students. She engages them and they learn, and she, like her peers in the program, demonstrates that she has developed ways of determining what interests them, how to differentiate instruction to meet their needs, how to determine where they need support, and how to use the data of formative assessment to shape future action.

This ability to plan way beyond individual lessons is supported and encouraged by a configuration of individual and small group activities situated both in and outside of courses and field experiences that provide students with ample opportunity to engage with core pedagogies of teaching in the ways that Grossman et al (2009) suggest are critical. The key program assessments, particularly the Term II and Term III assignments, showed Janet's ability to decompose instructional practices so as to make sense of them. This was abundantly clear, for example, in her adapting a lesson for her focus child in the fall (see Figure 2) and in her experiments with grouping throughout winter and spring. Throughout her field experience and especially in the assignments associated with the Term II and III assessments, she had opportunities for approximations of practice that supported her move into more independent practice in the spring where formative and summative assessment assumed major importance in her efforts to address her inquiry question (See Figures 5, 6, 7).

Becoming a Teacher Researcher

In reading Janet's portfolio, we discover echoes not only of the summer neighborhood study but also of each of the prior assessments and, in these echoes, we see her growing competence as a teacher researcher. To complete her portrait of a learner (Term II assignment), Janet engaged in interviews for each content area; she collected samples of student work; she worked from classroom maps to determine movement and verbal flow at different times of day; she made anecdotal records; she began keeping a journal. These and other research strategies show up in Janet's development of artifacts to buttress the claims that she makes about her learning and to support her effort to address her inquiry question. What is important to note here is that each research strategy that she used has been consciously and systematically embedded in the core program assessments.

Reflecting in and on Action

For students like Janet, the tools of teacher research are spurs to reflection. As she notes when describing her portrait of a learner, "Certainly going through this process has influenced the way that I will approach my future classroom." She clearly sees the possibility of continually deepening and expanding knowledge of each child; and she gets that the trust and interdependence that such knowledge brings is essential to successful teaching. Will it continue? Our bets are on for Janet as we saw her effort to get to know and understand students, herself, the context, and the impact of her instructional decisions. We saw this effort at reflective practice sustained and deepened throughout the year.

Do other students in the program demonstrate a similar inclination to this depth of reflection? Simply put, the answer is that all show some, but few show this depth. Zeichner and Liston's (1987) and Rust's (2002, 1994) suggestion that student teachers quickly learn to say and write what we, teacher educators, want to hear holds true here; what our assessments cannot tell us is how deep it goes. To know this, it is essential that new teachers be followed into their first years of teaching and beyond.

Discussion

It is difficult to identify the entire constellation of factors that enable a student teacher like Janet to go deep when others seem not to. We can speculate that Janet's life experiences have mapped well with the ways of knowing proffered by the program and that this fit may be less good for other students. If this is the case, the question becomes, can we better engineer the ecology of the program—the schedule and structure of courses, assignments, field experiences, assessments—to enable our students to engage more deeply in a reflexive process that equips them to examine and make use of their personal experience relative to their efforts to become teachers?

Seeking a Learning Community

Like many other programs, a core pedagogy of this teacher education program is its cohort design. Our students begin together in July and move through the entire program taking the same courses at the same time. We take this pedagogical structure more deeply into the placement of students in the field by placing students in school cohorts, and, when possible, pairing them in a classroom, trying to place counseling students in the same schools in which we have student teachers, and encouraging the formation of small learning communities. We also take the cohort design deeply into the shaping of class sections, and into the very design of some of the learning tasks within individual courses. So, it is not surprising that Janet, like most of the students in the program, would seek to create a collaborative learning environment within her classroom. What was unexpected in Janet's work was the dual focus on the individual and the entire learning ecosystem that begins in her lesson analysis (Term III) and can be traced as a through-line across her assignments.

Kumar and colleagues' study (2012) of Janet's inquiry portfolio suggests that the combination of student teaching placements with supportive program and classroom mentors was instrumental in her effort to enable each child's voice to be heard in the classroom and to remove barriers that might prevent full participation from English Language Learners. By using these resources in the act of shaping her instruction so as to incorporate her conviction about the importance of community to learning, Janet moved herself into working within a community of practice that included her Classroom mentor and her Penn mentor. This is, as

research on teacher professional development (Ball & Cohen, 1999; Lieberman & Miller, 2001; Little & McLaughlin, 1993) makes clear, an essential stance that supports both the individual growth of teachers and a high level of practice across an entire school. And, it fits well with Wideen, Mayer-Smith, and Moon's (1998) contention that,

> We can no longer regard courses, programs, and other participants and structures of teacher education as unchallengeable and operating in isolation. These features must be seen (by students, teacher educators, and researchers) as interconnected and regarded as examinable and problematic in both research and practice. (p. 169)

However, as remarkable as Janet's work and that of other students in the program was with respect creating and participating in communities of learners, our key program assessments do not call for and so do not measure the extent to which students, in their first years of teaching, seek out collaborative arrangements that could support their learning to teach as well as their movement toward teacher leadership. We know that such opportunities to practice and experiment with these techniques during our program are there for them: for example, the math problem solving, moon journal sharing in science, and emphasis on "whole is greater than the sum of the parts" projects in the integrated curriculum of the program. In terms of professional communities the "modified lesson study" in the literacy portion of Term III is another example of collaborative work. Further, we have always encouraged our students to take part in all meetings at the schools, when they can: grade level groups, CSAP meetings, parent conferences, professional development – all of which are opportunities to share insights and responsibilities with others who have an interest in the child or class.

The point here is that unlike apprehending teacher research skills or reshaping definitions of urban, we have not specifically planned for measurement of students' development of collaborative skills. As with reflection on action, we do not have any way of saying definitively that there is a precise moment when students will see this as an essential aspect of their practice or that they have adopted a stance that will propel them toward collegial practice. In this as in so much else about learning to teach, who one is as one comes to the program and the ways in which the contextual strands of the program are interpreted have a lot to do with what prospective in terms of affective frames and world views teachers take away with them.

Conclusion

We know that teacher preparation programs occupy a small moment of time in the course of a teacher's professional life and that, in the best of all possible worlds, teacher preparation can effectively launch new teachers on a long and learning-filled career (Rust, 2009). The question is which programs, which practices will insure that new teachers begin well and that they are well equipped to engage in the reshaping of education in ways that enable the achievement of what Banks (2010)

describes as "(1) meaningful learning goals, (2), intelligent, reciprocal accountability systems, (3) equitable and adequate resources, (4) strong professional standards, and (5) the organization of schools for students and teacher learning" (p. xi).

Our recent efforts to substantiate our claims have focused us squarely on the four core pedagogies of the program and on the evidence that we have garnered from the key assignments of the programs. Our study suggests that, when assessment events are carefully crafted to align with program goals as the ones in our program are, they can help both preservice students and teacher educators to determine how closely preservice students are coming to realizing those qualities that Banks (2010) has set out. However, these are not enough or, rather, we may not have studied them carefully enough. In their study of two digital inquiry portfolios completed by elementary students, Kumar, Pupik-Dean, and Bergey (2012) showed us what we can learn if we drill down into the assignments and look across the program to find their echoes. We are also seeing that, as Wideen, Mayer-Smith, and Moon (1998) suggest, we need more systematic inquiries engaged in by program faculty, mentors, and students that can give us insight about those "hard to see" qualities that enable us to support the claim that our graduates are well prepared for work as teachers and, eventually, leaders in urban schools.

In the long run, what may be needed is an expanded understanding of teacher education that positions learning to teach as integral to and part of the continuum of teacher professional development (Stein & Mundry, 1999; Rust, 2009). Reconceptualizing teacher education in this way could change the ecology of teaching: It could enable new teachers to transition with confidence into schools where the conceptions of learning and teaching that they have developed and learned to bring into practice are honored and supported. It could enable teacher educators to be situated as colleagues with school teachers in the development of powerful pedagogies that can change the experience of learning for new teachers and for the children whom they teach.

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