Finding Their Way On: Career Decision-Making Processes of Urban Science Teachers

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ABSTRACT: This article reports on a research study investigating the career decision-making processes of urban science teachers as one element central to understanding the high rates of attrition in the field. Using a longitudinal, prospective, context- and subject-specific approach, this study followed the career decisions of case study teachers over a period of 12 months. All eight of the case study teachers envisioned themselves eventually moving out of classroom teaching positions. Each used an ongoing and active process of decision making to evaluate their professional direction and sought confirmation of their contribution to the field before moving into new roles and responsibilities. This article describes the experiences of several teachers who exemplify these decision-making processes. These cases suggest potential benefits for differentiated roles, professional mentoring, and recognition and feedback from professional communities.
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INTRODUCTION

Teacher attrition rates in the United States are high, with almost 40% of new teachers leaving the field during their first 5 years in the profession (Ingersoll, 2003). High opportunity costs and challenging work environments make urban science teachers particularly susceptible to attrition (Murnane, Singer, Willett, Kemple, & Olsen, 1991; Urban Teacher Collaborative, 2000). This poses a significant burden to schools and students both financially

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and academically (Ferguson, 1991; Grissmer, Flanagan, Kawata, & Williamson, 2000; Ingersoll, 2003; Texas State Board for Educator Certification, 2000). This article reports on a research study examining the career decision-making processes of urban science teachers. These decisions are viewed as an essential aspect of their career trajectories and central for understanding their retention in the field. In the past, career moves have been primarily studied after they have already been made. This study takes a process approach, following science teachers over time as they are making career decisions. It focuses on teachers at particularly high risk for attrition, those in their early years in the classroom in challenging urban high schools. In this research, I find that these urban science teachers planned to move out of the classroom, used an active process to continually evaluate their professional direction, and sought a sense of confirmation of their contribution before moving on to new roles and responsibilities.

This study extends existing research on teacher retention, which has identified both individual and contextual factors related to longevity in the field (Rinke, 2008). Individual characteristics, including demographic factors like age, race, socioeconomic status, marital status, geography, and number of children as well as the personal factors of education level, academic ability, and individual characteristics, have been shown to matter for teacher retention (Boe, Bobbitt, Cook, Whitener, & Weber, 1997; Boyd, Lankford, Loeb, & Wyckoff, 2005; Dworkin, 1980; Heyns, 1988; Vance & Schlechty, 1982). Likewise, contextual characteristics like salary; school factors including facilities, size, support, leadership, and culture; the population; discipline; and motivation of the student body also make a difference for teachers' career plans (Bobbitt, Faupel, & Burns, 1991; Bridge, Cunningham, & Forsbach, 1978; Buckley, Schneider, & Shang, 2005; Haberman & Rickards, 1990; Murnane & Olsen, 1990; Theobald, 1990). These primarily survey-based studies are extremely valuable for identifying factors linked with retention or attrition. However, they are limited for understanding the process of career decision-making, which is an inherent part of teacher retention. This study uses an approach facilitating a more in-depth look at decision-making processes, one that includes a process orientation, context-based perspective, urban setting, and subject-specific nature.

Process Orientation

Much of the existing research on retention is survey based and retrospective in nature, asking current and former teachers to reflect back upon their reasons for prior career decisions (e.g., Chapman & Green, 1986; Heyns, 1988). Asking teachers about their career moves after they have already been made is limiting because it does not allow for an unpacking of the decision-making process. It also forces teachers to select a concrete reason for their career moves, when in reality the decisions may be based on several complex factors. The reason teachers ultimately report on a survey may only be the most recent or most visible factor. This study instead opts for close examination of teachers' career decisions as they are in progress, allowing for an exploration of the full complexity of career decision making.

Context-Based Perspective

Existing research on teacher retention also separates the individual from the context (e.g., Bloland & Selby, 1980). Research at the individual level of analysis focuses on the influence of personal attributes, whereas work at the contextual level of analysis emphasizes the impact of workplace conditions. Even certain studies that consider both individual and contextual factors (e.g., Bobbitt et al., 1991; Heyns, 1988) deem them distinct rather than interacting factors. This study takes the perspective that the individual and the context

coexist in a dynamic fashion, necessitating a methodology that can consider them at the same time (Chin & Young, 2007). This study regards the individual within a complex web of school and out-of-school networks (Lieberman & Grolnick, 1996).

Urban Setting

Although existing research suggests important implications for retaining teachers in urban schools, few studies specifically address the experiences of teachers in these high-need environments. With a few notable exceptions (e.g., Imazeki, 2002; Quartz & TEP Research Group, 2003; Theobald & Michael, 2002), the majority of the work treats urban teaching as equivalent to other teaching settings. However, studies in urban education demonstrate that the experiences of urban teachers are, in fact, unique, and the challenges of working in high poverty, low-resource, majority-minority schools require particular characteristics and skills (Boyer & Baptiste, 1996; Clewell & Villegas, 2001; Haberman, 1996; Murrell, 2001). The needs of teachers in these settings should be directly addressed (Day, Sammons, Stobart, Kington, & Gu, 2007). This research is distinct in its exclusive focus on urban schools and the pressing issue of retaining teachers in high-poverty districts.

Subject-Specific Nature

Although some individual studies have addressed the retention patterns (Murnane & Olsen, 1990; Shugart & Hounshell, 1995) and particular perspectives (Espinet, Simmona, & Atwater, 1992; Friedrichsen & Dana, 2005; McGinnis, Parker, & Graeber, 2004; Moin, 2005; Wang, 2004) of science teachers, the majority of the research does not consider teacher retention to be subject specific. However, research indicates that the departmental structure within high schools brings science teachers into a subculture onto themselves (Siskin, 1991). This subculture often enjoys a higher status than other academic fields (Ball & Lacey, 1984), owing to its elevated position in higher education (Little, 1993). Furthermore, science teachers report that their subject matter is an integral part of how they see themselves both personally and professionally (Helms, 1998). Therefore, this study considers the subject-specific nature of teachers' experiences, focusing on science teachers at particularly high risk for attrition. Together this approach, with its process orientation, context-based perspective, urban setting, and subject-specific nature allows for a close analysis of the career decision-making processes of this high-needs group of teachers.

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

This study aims to understand the process of career decision-making central to teacher retention. It builds upon a literature base that values the voices of teachers in discussing their own careers and career decisions. Prior research indicates that teachers' professional priorities and their ability to reach those priorities are consequential for their career decisions. This section outlines the ways in which these three central constructs—priorities, ability to reach priorities, and career decision making—have been treated in the existing literature. It then highlights the ways in which the literature base provides a foundation for the guiding conceptual framework.

The notion of professional priorities has been featured in the educational literature for decades as part of a larger discussion of what teachers value for themselves and their students. In particular, two studies feature the ways in which teachers prioritize the

various rewards of teaching. Lortie (1975), as part of his discussion of career and work rewards, notes that teachers place priority in their own psychic rewards over and above the material and time benefits of teaching. More recently, LaTurner (2002) studied how teachers with different preparation routes prioritized the rewards of teaching. He found that beginning teachers with stronger qualifications prioritized commitment to the field and income, whereas those with only subject-matter qualifications wanted to "make a difference."

Related studies examine the ways in which teachers prioritize what they hope to accomplish with students. In a seminal case study, Bullough (1989) follows the teacher Kerri through her first year of teaching and find that over the course of the year she actively prioritizes classroom discipline and interaction with colleagues. Schempp, Sparkes, and Templin (1999) likewise discuss the ways in which beginning teachers are forced to prioritize their interactions with subject matter, school life, and students as part of a process of establishing the self in teaching. They note that first-year teachers select the welfare of the child as a central priority.

Across studies, the concept of priorities is central to the discussion of what teachers value for themselves and their students. This idea of prioritizing is critical because while teachers would like to accomplish a wide array of aims, they operate within a challenging system of finite time and resources. Time and again they are forced to choose among a variety of worthwhile goals to focus on what they value the most. Thus within this context, priorities can be defined as those personal and professional aims teachers choose to emphasize for themselves and their students.

Even once teachers identify key priorities, they are not always able to achieve those priorities. Three key studies highlight the concept of achieving priorities for self and student. In a study examining teachers' careers in an inner-city school, a wealthy suburb, and a working class community, Yee (1990) looked closely at the process of context-specific career decision making. She specifically focused on how teachers made career choices within the context of their work environment. She found that career decision making was an ongoing negotiation between the individual and the workplace context. Moreover, she identified the concept of perceived efficacy as a key component of job satisfaction and consequential for teacher retention. This notion of perceived efficacy can be understood as reaching goals. Yee explains, "A satisfying career, then, is one in which individuals seek and experience a sense of achievement and accomplishment during the course of their work" (p. 199).

Johnson (2004) and Johnson and Birkeland (2003), as part of the Project on the Next Generation of Teachers, studied the perspectives of 50 new teachers during the first 4 years in the classroom. They conducted biannual interviews and a survey to better understand the perspectives and career moves of today's new teachers. These studies found that new teachers were in search of a workplace environment where they could feel successful with students. In fact, they found that a number of teachers left their current teaching contexts in favor of more supportive school climates. Johnson wrote, "When they were reasonably hopeful that they could become effective with their students, these teachers were likely to stay in their schools. However, those who thought that their schools interfered with successful teaching often moved on" (Johnson, 2004, p. 113). This research indicates that a sense of success was central to teachers' career decisions.

Finally, research conducted by Hammerness (2006) on the role of vision in teaching speaks to the interaction of vision and career moves. Hammerness (2006) understands vision to be teachers' images of ideal classroom practice. She develops in-depth cases of four teachers and their professional visions. Although her study looks primarily at the role of vision in classroom practice, she also finds that teachers who were unable to bridge the

gap between their vision and reality made career moves, selecting work environments that would better support their ability to enact their images. Like Yee (1990), Johnson (2004), and Johnson and Birkeland (2003), Hammerness (2006) suggests that the relationship between teachers' individual visions and the realities of their workplace contexts was relevant to career decision making.

These three studies, each exploring teachers' career decisions in light of their personal perspectives and workplace contexts, provide the foundation for an in-depth look at career decision-making processes. Much of the existing literature on teacher retention treats career decision making not as a process but as an outcome, identifying a variety of individual and contextual factors predictive of attrition or retention decisions (Billingsley, 1993; Gold, 1996; Rinke, 2008). Some studies take an alternate approach, following teachers' career moves over time and allowing the complexities of decision making to emerge. Smulyan (2004) followed her former teacher education students over a period of 10 years in an effort to better understand how they constructed the profession of teaching. Likewise, Quartz et al. (2008) followed their graduates of a specialized urban teacher preparation program for 6 years and found not only attrition and retention but frequent role changing as well. Although these studies move toward the consideration of decision making as a process, both maintain a focus on related factors. Smulyan (2004) looks at teachers' prior social, familial, and educational experiences, whereas Quartz et al. (2008) examine patterns related to race/ethnicity, gender, credential type, and age.

Although studies of teacher retention do not explicitly deal with the idea of decision making as a process, they can be informed by work in the field of vocational psychology. Several theoretical lenses in vocational psychology acknowledge career decision making as a complex and ongoing process. For example, Gottfredson's theory of circumscription and compromise discusses the process by which children begin to narrow their "zone of acceptable alternatives" as part of their career choices. In addition, Social Cognitive Career Theory (SCCT) states that individuals develop interest in those areas for which they have strong positive self-efficacy beliefs and perceive desirable outcomes. Part of SCCT suggests that behaviors are based on exposure to experiences and cognitive appraisal of those experiences (Lent, Brown, & Hackett, 1994; Swanson & Gore, 2000). Together, these approaches in vocational psychology indicate that career decision making is an ongoing process over time that takes place in the interaction between individuals and their environment. This study seeks to better understand this interaction in the context of teacher retention.

Existing literature indicates that teachers select certain priorities in their professional lives, that they are not always able to achieve those priorities, and that the interaction between these priorities and the workplace context may play a role in career decision making. However, it is not entirely clear how these interactions operate as a process of decision making day-to-day. The insights from previous research could be strengthened with an understanding of how achievement of teacher priorities might contribute to career decisions on an ongoing basis. This important need guided the research toward looking at decision-making processes in a more detailed manner than previously considered. This study focused in particular on gaining insight into the research question, "How do urban science teachers make career decisions?"

METHODS

The research question guided data collection toward methods that could appropriately capture the process of decision making in an ongoing manner. Rather than interviewing teachers at the end of each school year, when career moves typically occur, this study

instead used a case-based approach designed to follow teachers' perceptions, interactions, and contexts over time. In this case approach, selected teachers were interviewed and observed in a variety of contexts over a period of 2 school years. These case studies relied upon multiple data sources to gather evidence and identify patterns in career decision making (Merriam, 1998; Yin, 2003). They also answered calls for more qualitative work in the field of teacher retention (Billingsley, 1993; Bloland & Selby, 1980).

This study is situated in the William City Public Schools,[1] a K-12 urban school district on the Eastern seaboard with approximately 90,000 students and 12,000 teachers and staff, making it one of the 30 largest school districts in the United States (National Center for Education Statistics [NCES], 2001). Of those students, 88% are African American and 81% receive free and reduced meals (FARMS). They also report a greater-than-average number of minority students, as compared with other large school districts in the United States (NCES, 2001). William City reports low achievement academically, with a 54% graduation rate and a 36% passing rate on one of the major high school exit exams (State Department of Education, retrieved August 2006).

William City has numerous teaching vacancies and reports an immediate need for science teachers at both the middle school level and the high school level (Urban Teacher Collaborative, 2000). The district spends an estimated $19 million annually on costs associated with teacher turnover (Malik, 2007). Consequently, they rely heavily on local and national alternative certification programs in the hiring of new teachers, with Teach for America (TFA), a national corps of recent college graduates teaching in underresourced schools, placing more than 500 teachers in the district since 1993 (Teach for America, 2005). A local alternative certification program has also placed almost 500 new teachers in the schools since 2002 (retrieved from Web site, September 29, 2005). William City has also recruited hundreds of experienced teachers with expertise in science and math from abroad (Coates, 2005). These strategies reflect the experiences of urban districts nationwide, where alternatively certified teachers make up a significantly greater percentage of the teacher workforce (Shen, 1998, 1999; Zeichner & Conklin, 2005).

The study began with a district-wide survey intended to select and situate participants. The survey contained questions about professional priorities, practices, school climate, professional motivations, and long-term career plans. It was distributed to all first, second, and third year high school science teachers within one urban school district ($N = 73$) and received a 54.8% response rate. Beginning teachers were targeted because they are most likely to make career adjustments (NCES, 2004). Eight case study teachers were selected from survey respondents by using purposeful sampling based on criteria already shown to be important in the teacher retention literature, including demographics (e.g., Bobbitt et al., 1991; Dworkin, 1980; Heyns, 1988), certification route (LaTurner, 2002), and workplace conditions (e.g., Rosenholtz, 1989; Weiss, 1999). Analysis of the survey data situated the case study teachers within the larger school district and indicated that selected teachers followed the same general trends as the district population with respect to perspectives, practices, professional motivations, and long-term career plans.

Specific selection variables and characteristics of the eight case study teachers are outlined in Table 1. Selection variables included gender, years of teaching experience, age, race, certification route, subject area, professional background, school structure, and school climate. Six of the case study teachers were female, and two were male. The majority were under 30 years old, although one teacher was in her early 40s. Six were white, and two were African American. They taught a range of science subject areas in comprehensive,

[1] All names are pseudonyms.

TABLE 1
Overview of Case Study Teachers

	Gender	Experience at Start of Study	Age	Race	Certificate Type	Subject	Educational/Work Background	Initial School Structure	School Climate
Alexandra	Female	2nd year	20–25	White	Alternative	Computer Science	Bachelor's	Comprehensive	Moderate
Alison	Female	3rd year	25–30	White	Traditional	Chemistry	Bachelor's	Restructured	Strong
Charlotte	Female	1st year	25–30	White	Alternative	Physics and Earth Science	Master's	Alternative	Weak
Denise	Female	1st year	20–25	Black	Alternative	Biology	Bachelor's	Comprehensive	Moderate
Matthew	Male	3rd year	25–30	White	Traditional	Environmental Science	Master's, work	Restructured	Moderate
Mitch	Male	2nd year	25–30	White	Alternative	Chemistry and Biology	Ph.D.	Magnet	Weak
Raya	Female	3rd year	40–45	White	Alternative	Environmental Science	Master's, career changer	Restructured	Weak
Talisha	Female	1st year	30–35	Black	None	Chemistry	Master's, career changer	Restructured	Moderate

restructured, alterative, and magnet high schools.[2] School climate at these schools was determined based on responses to survey questions drawn from the Center for Research on the Context of Teaching (1991, 2001, 2002). Weak school climate was defined as an average response of less than 3.0, moderate as between 3.0 and 3.5, and a strong climate as greater than 3.5 on a five-point Likert scale. And finally, the majority of case study teachers came from alternative certification routes because of William City's reliance on alternative certification routes to fill teaching vacancies and the high concentration of alternatively certified teachers in urban schools, particularly in science (Shen, 1998, 1999; Zeichner & Conklin, 2005).

Data collection for the case studies began in January 2006 and continued through December of the same year, with a break over the summer. Data collection was designed to take place over the course of two academic years to track case study teachers' career moves over time. Nine to 10 interviews were conducted with each teacher for a total of 76 interviews, each one to one and a half hours in length. The interviews, which were audiotaped and transcribed, were semistructured based on an interview guide. Interviews covered a range of topics, including teachers' background, priorities, support, relationships, workplace context, and professional plans, as well as their ongoing experiences, rewards, and frustrations. To avoid influencing the data, I intentionally did not initiate explicit conversation about career moves. However, teachers brought up their career decisions frequently and it was a common topic of conversation. Fifty-seven professional observations were also conducted in a variety of professional settings both within and outside of the school context. Observation sites were selected by case study teachers tooffer a more comprehensive window into their everyday worklives and interpersonal interactions. At each observation, I took comprehensive fieldnotes specifically focusing on their enacted priorities and their ability to achieve those priorities in various contexts.

Data were analyzed both during and following data collection (Bogdan & Biklen, 2003), using a series of techniques designed to attend to the research questions and conceptual framework while also being responsive to the experiences of the case study teachers. Interview transcripts and observational fieldnotes were annotated with analytical notes, memos were developed, data were coded based on the conceptual framework and emerging themes, and individual cases were constructed to attend carefully to particular circumstances (Merriam, 1998). The within-case analysis focused on factors identified as significant in the conceptual framework and literature review, such as professional goals, practices, autonomy, support, structure, community and school relationships, feelings of success, and planned career movement. These cases were also constructed chronologically to attend to potential variation over time.

Cross-case analysis consisted of a series of matrices, 13 in all, reducing, describing, and ordering variables across all eight cases (Miles & Huberman, 1994). The cross-case analysis was conducted by returning to the original conceptual framework and modifying it based on key concepts that appeared salient across the eight case studies. New models were developed, challenged, and revised on the basis of peer analysis, member checking, and identification of outliers and anomalies, undergoing seven iterations before reaching their current form. These models investigated potential relationships between priorities and career decisions, including personal, professional, and school context factors. This analysis

[2] Comprehensive schools are large, community-based schools that teach all students using a variety of program options. Restructured schools are small, autonomous, community-based schools, often located in the former building of a comprehensive school. Alternative schools offer additional support for students who are not successful in a traditional high school context. Magnet schools serve a city-wide population of students. Students must apply and gain acceptance based on past academic success.

led to the identification of certain common elements in the decision-making processes of these eight urban science teachers.

CASES

The data point to certain patterns that cut across the experiences of all eight case study teachers in terms of their decision-making processes. Although just beginning their teaching careers, all eight of the case study teachers envisioned themselves eventually moving into positions outside of the classroom. They continually evaluated their future career plans in an active and ongoing manner, changing them regularly based on challenges or achievements in their school contexts. And finally, they all wanted to feel that they had made some form of contribution prior to moving on to the next stage of their careers. This section describes how these decision-making processes were enacted over time for the eight case study teachers.

Moving On

The first striking theme that emerged from the data was that each of the eight case study teachers eventually planned to leave the classroom. Some planned to leave immediately, others stay a bit longer, but each one envisioned a professional future apart from classroom teaching. This pattern appeared to hold true regardless of demographic situation, science background, teaching preparation, experience, or workplace context; they simply did not see teaching as a long-term endeavor. Although some made lateral moves between schools over the course of the study, each one hoped to eventually move out of the classroom and take on different roles and responsibilities. Although their plans changed continually over time, at the conclusion of the study the case study teachers envisioned their careers taking the following paths:

- Alexandra had a bachelor's degree in biology. She taught for 2 years in a large comprehensive high school as part of TFA. Seeking a more supportive school culture, in her third year she moved to a small charter school. Her new position had a technology coordinator component as well as a reduced teaching load. Alexandra planned to continue teaching at this school while pursuing a master's degree and training for a new career in public health.
- Alison earned a bachelor's degree in chemistry and worked for 3 years in a reconstructed high school. She played a critical role in developing the new school culture. In her fourth year, she was promoted to mentor teacher for the science department and began to phase out her teaching responsibilities. Alison enjoyed supporting newer teachers and hoped to eventually take on a full-time mentor teacher role. She enrolled in classes at the local university to help prepare her for this career direction.
- Charlotte had both bachelor's and master's degrees in physics. She left a doctoral program in physics to pursue a 2-year stint as a high school teacher. In her first year, she taught at the district's alternative high school. After that school was closed, she moved to a highly academic magnet school. Charlotte missed the intellectual stimulation of her academic work and was actively reapplying to doctoral programs.
- Denise earned a bachelor's degree in biology and entered teaching through the local residency program and taught for 2 years at a large comprehensive high school. Although she enjoyed her classroom work, for a long-term, she envisioned herself taking on an administrative role, perhaps becoming a principal or opening her own school. She was in the process of investigating training programs for administrative positions.

- Matthew held a bachelor's degree in wildlife biology and held two different environmental science teaching positions in William City, both at small reconstructed high schools. His immediate career plans included moving out of the city and taking a position in a suburban school. For a long-term, however, he hoped to become a department chair without classroom responsibilities, because he particularly enjoyed his work organizing school-wide environmental activities and supporting newer teachers.
- After earning a Ph.D. in chemistry, Mitch taught for 2 years at an all-girls magnet school in William City. Seeking a more professional culture and hoping to be closer to his family, in his third year he moved to a high-needs school in a rural area. For a Long-term, Mitch hoped to enter school administration and specifically aimed for the superintendency.
- Although she began with a bachelor's degree in marine biology and a master's degree in science communication, Raya enjoyed a varied career in science journalism before becoming a founding faculty member in a small reconstructed high school. After 4 years she became frustrated with the large class sizes and planned to move to a school with more guaranteed support for teachers. She intended to teach for a few more years and then envisioned herself moving into an urban education-related field such as consulting.
- After earning bachelor's and master's degrees in biology and working for 10 years in the pharmaceutical industry, Talisha taught for 1 year at a small reconstructed high school. Just before her second year, she accepted a job at a mobile educational laboratory, which brought biotechnology equipment to schools statewide. She was pleased with this new position, although at times still considered returning to graduate school for more advanced training in the medical field.

All of the case study teachers envisioned their own unique professional directions, including support roles, administration, graduate school, and even new careers outside of education. However, none of them saw themselves in the classroom for a long-term. Each one eventually planned to take on new roles and responsibilities.

Actively Exploring

All of the teachers saw themselves moving outside of the classroom in one way or another. Knowing that classroom teaching was a short-term endeavor, the case study teachers were engaged in an ongoing and active process of career exploration. They continually weighed the options available to them and formulated evolving plans for their professional futures. This section describes the experiences of four teachers, Denise, Matthew, Charlotte, and Talisha, as a way of illustrating how career decisions were negotiated in an active and ongoing manner. Denise's case is highlighted in greater depth and Matthew's, Charlotte's, and Talisha's more succinctly in an effort to capture the true complexity of individual experience for at least one of the four teachers.

Denise

Denise grew up in public housing in New York City, an older sister to four brothers. She explained that she always enjoyed teaching them,

> [I was] always playing school. And I know, algebra, we used to do it with letters, like a + b = c, and we used to make up stuff. . . . I just felt like that's what I wanted to do" (2-24-06).

Although Denise knew that she wanted to be a teacher from an early age, she was told again and again that, "they don't make no money (2-24-06),

so while pursuing a biology degree at a local college she explored related fields such as medicine, pharmacy, and laboratory research. She even spent a summer in Texas doing research on glaucoma and presented her work at a conference for minorities in science. However, at the conclusion of college she decided to apply for William City's teacher residency program, returning to her original professional direction. She commented, "I ended up back where I wanted to be" (2-24-06).

When I began working with Denise, she was in the middle of her first year of biology teaching in a large, comprehensive high school in William City. She selected that school after meeting the department chair at a career fair and sensing that it would be a supportive working environment. Half-way into her first year, she did indeed find it to be supportive. The department chair organized weekly meetings among the science teachers to share ideas, resources, and prepare systematically for the state exam. In addition, because of the large number of new teachers in her building, the school district provided a mentor specifically designated for beginning teachers. Although Denise was given few material resources, working essentially without science lab supplies or even a computer to record grades, she was grateful for the support she found within the department and the school as a whole.

When we began talking in January of 2006, Denise planned to teach in William City indefinitely. However, she was curious about the surrounding suburban school district. Knowing that I had taught in both urban and suburban schools, she asked me to compare the two for her. She talked about teaching summer school in a local suburban district to test it out as a potential career direction. Urban teaching, followed by suburban teaching, seemed to be a possible career trajectory for Denise.

By March, however, her plans had changed. She was extremely frustrated with the school-wide practice of giving "work packets" to students who had not attended all semester and passing them if they completed these packets (3-23-06). This practice was particularly prevalent among seniors who were expecting to graduate. The situation came to a head in her senior microbiology elective when one student who was out for a week and a half without an excuse demanded her makeup work and Denise asked her to come after school to get it. This drew the attention of the principal and the department chair, who encouraged Denise to be lenient with the student because she had a child at home. Denise expressed her frustration with the situation:

> Well, my principal and my department head came to me too about the girl. . . . So I just asked them . . . "What do ya'll want me to do? Do you want me to just pass everybody?" Because I just feel like if you want me to give somebody a makeup packet to make up what we did for the whole entire year because, ok, two semesters came, you failed. The third semester you'd think, ok, I need to get at least a 90 to make up for those [semesters]. . . . And you come and you do the same thing and you don't come for help. So the fourth semester, you're waiting for me to give you packet to make up the whole year. I just feel like I should just come in, give them a packet, and they could work on it for the whole year, and I could do nothing and plan for people who want to learn something. (3-23-06)

Denise felt that the common practice of work packets undermined her diligent daily preparation and instruction.

After this conflict, Denise declared that she was "ready to quit" (3-23-06), explaining, "I'm just trying to make it through the year . . . and then I'll decide if I'm coming back" (3-23-06). She commented,

> I just think that I like teaching, and I think it's fun, and I mean all the other struggles with not having money and the kids not having books, the kids not being up to level, then I still

> have to pass everybody, and I just think that defeats the purpose, and I think I work too hard for that. (3-23-06)

At this point, Denise began to consider a number of professional alternatives, primarily within the educational system but outside of education as well. She talked about moving to a different educational environment, one with "some standards" (3-23-06). At the same time, Denise also considered applying for a principal's training program as well as leaving teaching altogether. She posted her resume on three online job banks and began to review teaching and administrative positions as well as general management jobs outside of education. Denise also began to test the waters with her students, telling them she was planning to leave to see their reaction. From the fieldnotes:

> She also told me that some of her students (about six) came back from service learning early . . . and she told them she was going to leave to go work at a charter school (she made up this charter school). They just laughed at her and told her she wasn't going anywhere. They told her they did chase away some teacher who left earlier in the year, but they knew she wouldn't leave. She told me she wasn't serious about this, she just wanted to see how they would react. (3-31-06)

Frustrated with the norms at her school, Denise began actively pursuing career alternatives.

By May, things had changed once again in Denise's professional life. Now Denise entered a time of great satisfaction with teaching. The statewide testing ended and Denise engaged her students in several engaging activities, including a health competition in which they were challenged to drink eight ounces of milk every day for a week, an outdoor ecology scavenger hunt, and a frog dissection. She felt her hard work was paying off for her students, explaining, "And this girl was like, oh, I've been drinking milk at home. And now my parents like make me drink milk, so. Something little like that I didn't even think would have a big effect" (5-26-06). Denise also attended the senior prom and enjoyed seeing her students get dressed up for the event. As she shared her photographs of the event with me, she commented, laughing:

> And they really felt good because they've never really dressed up like that before. So they were . . . like, "Don't I look nice?" . . . Now they like, "Oh, I can't wait till next year." . . . They want to dress up and stuff. It was funny seeing them walk in heels 'because they don't wear heels, so they were all like, "Can we take these shoes off?" [laughter] (5-26-06)

Denise became heavily involved in end-of-the-year festivities, but felt her students had been cheated out of some of the opportunities she had during high school, such as going on a ski trip and having a senior week where they could wear pajamas to school. She decided to join the graduation committee next year to provide more opportunities for her students.

At the conclusion of the school year, Denise felt she had made a difference with students:

> DS: I just wanted to be a driving factor . . . give kids motivation and just be a role model as far as setting the example because I came from the projects and the inner city . . . just letting them know that they can do it . . . I try to be a positive role model. . . .
>
> I: . . . Based on what you can see now, do you feel like you have done that?
>
> DS: Yeah. I mean with some of the kids . . . I just see that they look up to me. . . .

> I: Uh huh, like how can you see that?
>
> DS: Because they always around me, they always asking me stuff. . . . Even kids I don't have in my class have asked me about choosing colleges and different stuff. They would just come and say, "Oh, Ms. Sargent, can you do such and such?" . . . I had kids I don't even have, "Ms. Sargent, are you gonna come to prom to see us?" . . . I'm like, "I don't even know you." (5-26-06)

At this point, Denise declared, "I'm surviving, and I'm still smiling" (5-26-06). She planned to spend the summer working part-time at a tutoring center and attending biology professional development and then return to her same position in the fall.

When Denise returned to school in the fall, things once again changed. Her academy, a small school community within the larger comprehensive high school, had been considered one of the stronger ones in the building, but this year they received a new academy principal, who served as an assistant to the school-wide principal. Denise did not like or respect this new principal, who she thought of as a "by the book" bureaucrat not looking out for the best interests of the students or teachers (9-15-06). Denise experienced conflict after conflict with this new academy principal. Denise explained how the principal marked her absent, because she arrived at school before the sign-in book, mistook her for a student, and wrote a memo criticizing her for allowing students to leave class to go to the water fountain. Denise explained:

> She . . . cc'd the principal of my school . . . and she told her . . . I'm defying her authority and I'm trying to . . . rebel against her control. . . . She told my department head that I'm being uncooperative. Everything that she's setting up. . . . I'm going against her . . . authority. That's what she said . . . I'm going against her authority. (12-4-06)

Denise was exasperated with the situation and vowed not to work with her in the future, saying, "I don't want to work with her. I don't like the lady. I don't want to work with her. I want to go somewhere else" (11-8-06). However, she liked her school and was excited about the upcoming opportunity to teach Advanced Placement biology, so instead of leaving the school altogether she began looking into ways to switch to a different academy within the same building. If she was unable to switch, she planned to seek a voluntary transfer to another school within the district.

When we conducted our final interview in December, Denise had once again refocused professionally. While her frustrations with the academy principal persisted, she had turned her attention to her ultimate career direction, becoming a school principal. She located an alternative certification program for principals, similar to the one she attended for teachers, and planned to enroll after she completed her master's degree in teaching. Denise envisioned a long career within the school system, which included serving as a principal, opening a charter school with an "intertwined" curriculum, writing a book to tell the "truth" about her experiences, and possibly teaching a few courses at the local community college (12-4-06). In addition, any thoughts of moving the suburbs were gone. She and her boyfriend were in the process of buying a house in the local community, not too far from where her students lived. Her students were excited about this possibility, hoping to have Denise as a neighbor. When I asked whether she planned to stay in William City long-term, she explained, "Maybe not this city here. Maybe if we move to another city, but I would want . . . inner city" (12-4-06). At the end of the year, Denise was focused on her opportunities to grow within the urban educational system.

Matthew

Matthew, a third-year environmental science teacher at a small high school in William City, also engaged in a process of active career exploration over the course of the year. When the study began in January, Matthew was very pleased with his professional life. He liked being one of the more experienced teachers among a young staff. However, by April he had begun to consider the possibility of taking a teaching job out west, in Colorado. He explained:

> We don't have any family here. . . . We could do without the friends that we've made. . . . They're good, but they're not . . . lifetime friends. . . . So there's nothing holding us in William City. And our work, our jobs are challenging. We're losing hair, we're getting gray hairs . . . getting wrinkles. . . . Is it worth it? . . . You should be happy with what you're doing. You should be getting so much out of your job. And I'm getting a lot out of my job. It's just taking a lot out of me too . . . I'm getting a lot out of my job, but I think I have more coming out of me than . . . taking in . . . I would love to live in Colorado. . . . It's just like my state, outdoorsy . . . beautiful. (4-21-06)

Matthew and his girlfriend spent their spring break investigating places where they would like to move.

By May, Matthew was enjoying his work once again, particularly his role as the tennis coach. His team was achieving great success and several students had made the regional tournament. With this success, he resolved to stay in William City indefinitely, commenting, "I thought I had found my niche for now, not permanently, but for now" (5-17-06). However, just as he was deciding to stay, his ideas evolved once again. Matthew explained, "I just had the wind knocked out of me yesterday" (5-17-06). Two of his top tennis players were transferring to neighboring schools, decimating his team. Faced with this news, Matthew renewed his efforts to find a new teaching job. He and his girlfriend both sent out resumes to contacts in California and internationally, explaining, "Now there's nothing keeping me in William City. The kids didn't do it on purpose, but they took my job away, they uprooted me, that's what's going to end up happening" (5-17-06).

In June Matthew changed his thinking again. Matthew and his girlfriend decided once again to stay in William City and bought a house not too far from the high school. In explaining his decision, Matthew reasoned that he had a chance to become the department chair down the road, which would be a positive career move for him. He said, "I feel that I probably could be the . . . department head next year, and I think that would be a good step professionally for me, and I see myself in that position more than as a teacher, in the city anyway . . . I like to support people" (6-16-06). They moved into their new home the first week of school, in early September. However, by October Matthew's frustrations had grown, and he was once again working on his resume and looking into alternatives for next year, including suburban teaching and outdoor education opportunities. In November, he expressed regret about buying the house, asking, "Why did we buy the house? Why did we do it? Now we're stuck" (11-15-06). At the conclusion of the project, Matthew and his girlfriend were both planning to pursue teaching jobs in a neighboring suburban district.

Charlotte

At the beginning of the study, Charlotte was in the middle of her first year teaching physics and earth science at an alternative high school in William City. Charlotte enjoyed working with her physics students, but was frustrated with the low attendance, teaching only a handful of students on a regular basis. Moreover, she had an antagonistic relationship with

the school principal, whom she described as a "used car salesman" (1-4-06). She described openly hostile exchanges with him, including one that took place in front of the school faculty during a staff meeting. When I first spoke with Charlotte in the fall, she explained that she planned to switch schools at the end of the year, but by winter she had decided to remain at the same school for her second year of teaching, simply because it would be too much of a "hassle" (2-3-06) to change, not even worth moving her belongings.

Later in the spring, Charlotte learned that the district was closing her school. She would have to transfer or lose her job. Forced to move, Charlotte hoped to switch to a different type of teaching environment. She investigated options in the local private schools and community colleges, but ultimately accepted at position at the city's top math and science magnet school. At the start of her second year, Charlotte was hopeful about her new position and even entertained the possibility that she might like it enough to stay on. She explained, "This year I thought, 'Well you know who knows. . . . It's the best school in the state.' I mean it might really kind of make an impression on me" (12-12-06). She even began to refer to herself as a "teacher" (10-17-06) rather than a "physicist" (3-14-06).

However, her plans continued to evolve. By October, Charlotte had decided definitively to return to graduate school and began the application process. High school teaching was simply not what she wanted to do and her mind craved intellectual stimulation. She explained, "I feel so stagnated at this point . . . my brain is hungry to learn new things. Even studying for the GRE . . . the time I did spend studying for the math GRE was so much fun . . . I actually thoroughly enjoyed reading the stuff and then working out problems" (12-12-06). Charlotte applied to a few local doctoral programs and planned to apply nationally the following year.

Talisha

At the beginning of the study, Talisha was a first-year teacher, a recent career changer from pharmaceuticals who had no prior experience with education. Over the course of the study, Talisha engaged in continuous debate about her future career direction, but this was nothing new. She had already been involved in years of ongoing career decision making, culminating in her choice of teaching. As a college student, Talisha dreamed of becoming a doctor, but hoping for something more flexible she instead earned a master's degree in biology and worked in pharmaceutical research for 10 years. When she ultimately became unhappy with the direction of her job and began to look for something both family-friendly and science-oriented, she selected teaching.

Prior to entering the classroom, Talisha had moved her husband and two children to William City and bought a house, suggesting that she intended to stay for a while. She worked very hard initially, developing her own chemistry curriculum in the fall and then piloting a trial curriculum in the spring. By March, Talisha started feeling less motivated and began procrastinating on her lesson planning and grading. With an exciting wedding anniversary celebration to plan for, Talisha put "school on the back burner" (5-3-06) for a while. However, after spending her spring break taking long walks in the park with her daughter, Talisha came back rejuvenated for the remainder of the school year. Despite her frustration with significant changes to her work context, including subject matter and lab facilities, Talisha planned to return in the fall. In fact, she could not quite understand some of her fellow beginning teachers who talked of leaving so quickly. She commented, "I think about the other teachers I know who are in their first year and ready to quit. Being through challenges makes you stronger" (4-5-06). She tried to keep workplace problems in perspectives, noting, "There are so many other things in life that are . . . so much more important" (6-14-06).

By June, Talisha had decided that teaching would work for now, but could not be a permanent career for her. She commented, "I feel like . . . I'm in a burn out career, and . . . I'm in it for now, but where do I want to be or what do I hope to get from it before I burn out?" (Interview 6-14-06). Like many of the others, she talked of staying in teaching until she could receive the district's financial benefits, such as the home-buying program and loan repayment. Talisha explained, "I told . . . my husband, I said 'You know, if for nothing else, I'm going to stick out teaching for at least three years to do . . . the Teacher Next Door program. If I could stick it out for five, I will, to get my student loans paid off"' (6-14-06).

She resolved to attend classes for her teaching certificate and spent the summer in educational workshops and school-wide committees.

However, over the summer Talisha was offered the opportunity to join a mobile educational biology lab that traveled around the state bringing cutting edge research to high school students. This job not only combined her interests in lab research and education, it also offered her higher pay. Just a week before the start of school, Talisha decided to leave teaching and accept this job. When we spoke in the fall, Talisha was pleased with her new position, which she described as "so cool" (9-8-06). She planned to stay on for the foreseeable future, at least 3 years. However, even at this point she was again thinking about her next professional move, commenting, "It's funny. I told [my husband], 'I would really like to have a doctor attached to my name"' (11-20-06). Even at this point, Talisha was weighing her professional alternatives, including a PhD, a medical degree, a nursing degree, and a return to industry, weighing the potential benefits with the sacrifice she would have in time with her family.

Making a Contribution

The case study teachers planned to eventually leave classroom teaching and they were involved in an active process of exploring their career alternatives. However, they were not ready to leave before making a contribution professionally. They sought some measure of confirmation that their work had made an impact. This section describes the experiences of four teachers, Mitch, Alison, Alexandra, and Raya, in their quest to make a contribution to urban schools and students. In this section, Mitch's experiences are highlighted, followed by brief case descriptions for Alison, Alexandra, and Raya in an effort to more faithfully represent the richness of one teacher's experiences over the course of 12 months.

Mitch

Mitch, a second-year teacher in an all-girls magnet school, always held a deep respect for teachers. Academically successful, he was the valedictorian of his high school class in Omaha, Nebraska. He went on to double major in biology and chemistry and earn his doctorate in chemistry. However, he always wanted to be a teacher and at the conclusion of graduate school decided to join TFA. As an adult, he maintained relationships with many of his teachers from the early years of his life. In fact, the only days he took off during the entire school year he used to fly back to Nebraska for a surprise retirement party for his high school choir teacher. During this trip, he visited with a number of his old teachers and took photographs with them, like close friends or family members. He also attempted to write Christmas cards to his former teachers on an annual basis, what he estimated were 50–60 cards each year. Mitch noted:

> With the exception of one or two, I always send them a Christmas card . . . I sent all of them an announcement . . . when I got my doctorate. And some of them are like, please

> do not stop your letters. Even though we don't respond, we look forward to hearing from you every year. . . . Teachers have been so important to me that I think . . . my teachers have been the most influential on my life. (3-8-06)

Mitch valued high school teachers and felt that they made a difference in the lives of children.

Although Mitch respected teachers and teaching, his family did not. He said that they could not understand, and certainly could not begin to explain to their friends, why their son with a Ph.D. was working as a high school teacher, and with poor children besides. His father, a computer technician at a community college, wanted to see his son working at that level:

> [My father] said, "Oh, it's a easy job." And I'm like, "I'm not looking for an easy job." He said there's teachers here making $60000. They come in at 9:00, and they leave at 1:00 every day. Some of them three days a week, and they still make $60000. . . . But I don't want something easy. (3-8-06)

His mother wanted him in a more lucrative field. Mitch explained, "And my mom, she wants me to make lots of money. . . . It's always been that she wants me to make a lot of money" (3-8-06). Therefore, although Mitch valued the work of high school teaching, his family did not. Well into his third year of teaching, his career choice continued to be a source of tension with his family. After a particularly stressful Thanksgiving dinner he commented:

> It's always that little thing I'm always worried about . . . when I'm talking to my parents. Do I have to defend myself every time? . . . I always have that in the back of my mind, and I'm like, I wish you would just be happy for what I'm doing. (11-29-06)

Although Mitch respected teachers, his parents thought they worked too hard and were paid too little.

Mitch had a rocky start in teaching. He was placed by TFA at an all-girls magnet school in William City, where he struggled with classroom management and received an unfavorable evaluation from his principal. He felt the evaluation was unjustified and caused by her lack of knowledge about his teaching. He commented:

> I'm kind of figuring one of the things they based it on was one time the principal was up in the hallway and I was screaming loud at my kids in the hallway. They were throwing lancets at each other in the lab! What was I supposed to do? There were 35. . . . And it was me and the other chemistry teacher in the lab and they weren't listening to either one of us. And so I just screamed at them and she was in the hallway and heard and said I have no control of my kids. . . . That's what irritates me about administration. They don't know what's going on. (5-24-06)

The evaluation was supposed to signal the need for increased support, but Mitch says he never received any of the help he was promised:

> My contract said that my principal was supposed to send me to some workshops in classroom management, she was supposed to observe me, she was supposed to give me a way to go observe other teachers. . . . None of that happened, none of it! So, I mean, nothing that they did supported me. The only thing is I needed a different classroom for my biology kids, because this classroom was way too small for 35 kids, and I was moved to the department chair's classroom. My principal came in for half a period one day. And she wrote me, "Oh

> your lesson was great, you left off an 'e' on 'the' on the board." She said you need to be more conscious when you write things. (5-24-06)

Although his next evaluation was satisfactory, Mitch had lost trust in his administration. He regularly commented on how school administrators had lost touch with what was going on in the classroom:

> I think that's what's wrong with a lot of administrators in administration for 10, 20 years. They don't know what's going on in the classroom. Because they'll say things, I'm like have you been there? Our administration was never in our classrooms. Once or twice a year. And you can't judge. . . . (6-14-06)

Mitch described his experience with administration in William City as "being hammered" (10-30-06).

In the classroom, Mitch took a different instructional approach than a number of his colleagues. As an instructor at an all-girls school, he was proud to teach what he called "real science," and work to shrink the gap between girls and boys (12-19-05). He was under a lot of pressure to prepare his biology students to pass the statewide exam, but explained that his approach was to teach them the concepts rather than simply teach to the test. He commented on how his instructional methods differed from the other biology teachers at his school:

> MM: She pulled old questions from the exam and makes them do all the labs from the exam because she thinks that if they're doing those labs they can answer those questions. Whereas I've read those questions. You don't need to know what those things are or have done that experiment to answer that question. You just have to have a basic understanding of science. . . . They teach very much to the test and I can't do that. . . . As much as people want you to teach to the test, I can't, I have to draw the line there. And that's my law, and I cannot teach to a test.
>
> I: So if you don't teach to the test, what do you teach to?
>
> MM: I teach to the topic for the test, but I don't . . . take all the tests and teach them only the questions from there. I teach them the topics that they need, but I teach the topics in detail and give them the knowledge. (1-20-06)

Observations in his class illustrated this approach. During one visit to a chemistry class, Mitch had returned to the concept of ionic and covalent bonds because he did not yet feel comfortable that his students understood it. He stayed on the topic for weeks until he was sure they had reached mastery. Although Mitch believed in his approach, he felt uncomfortable taking a different road than did his more senior colleagues.

Facing doubts about his choice of teaching from his family, his ability to teach from his principal, and his approach to teaching from his colleagues, Mitch sought, and found, confirmation in a variety of ways in his professional life. First, he was proud to learn that across the school his biology students had the second highest pass rate, and the highest of any nonhonors class, on the statewide exam. He felt this success justified his instructional approach. Second, Mitch applied and was selected as a finalist for two national teaching awards, one through Disney and the other through TFA. But perhaps the most meaningful were the words of gratitude and praise that he received from students and colleagues when he told them that he was preparing to leave the school at the end of the year. He explained:

> Some of my students threw a surprise party for me, a going away party. Like they decorated this whole room and said "We love Dr. McNeill. We're gonna miss you". . . . They brought fried chicken and potato salad. . . . They gave me some cards, and they gave me this magnet set of [the television show] *Friends*. . . . One girl gave me a Mariah Carey DVD and a Mariah Carey CD. . . . And I was just like, that was so thoughtful. (6-14-06)

His science department colleagues also sent him off with a cartoon chemistry book and a gift certificate to JC Penny's. Mitch commented, "I was very, very touched by that" (6-14-06). Finally, a colleague brought him unsolicited words of praise:

> A math teacher was telling me yesterday, he asked me, so are you sure you're leaving, and I'm like, yeah, it's pretty definite, and . . . he said he's very sad because he said he can see how much growth I've made in one year and he said he's not going to see the finished product. He said I would be very close to being a finished product by next year. I was like, no! . . . That makes me feel really good. (5-24-06)

Leaving his school provided an opportunity for Mitch to finally feel accepted professionally by his colleagues, and this meant a lot to him.

At the end of his second year of teaching at the all-girls magnet school, Mitch weighed his next steps professionally. He considered pushing for the retiring department chair's position, but decided that he could not move into administration until he felt more confident in the classroom. He commented, "I don't want to . . . leave before I'm good at it, so that's one reason I'm really wanting to teach at least one more year. Because I don't feel like I'm a good teacher yet" (3-8-06). Instead Mitch decided to make a lateral change and accepted a position as a chemistry teacher at a Knowledge is Power Program (KIPP) school in a high-needs rural area. He was attracted to this school because of its unique educational philosophy and because it was located close to his family. At this school, he felt more successful professionally. His students were highly academic, earning a 95% average on quizzes where his William City students averaged ten points lower with the same instruction.

But more than that, at his new school Mitch felt he was treated as a professional. The principal at his new school had high expectations for teachers and he put in tremendous hours, often working from seven in the morning until eight at night as well as on the weekends. However, he felt rewarded for his work. The school schedule allowed for a week's break at Thanksgiving and 2 weeks in the winter in addition to designating the Monday after each vacation as a professional day for teachers. Mitch felt these extended vacations gave him the time he needed to act as a professional:

> I was thinking in William City I could never really think about things because our vacations were never long enough. By the time you started, it was time to go back to work. . . . That's the most, like I mean treating you like a professional, which is awesome. (10-30-06)

The principal also took the entire staff to a conference in New Orleans over the summer, paid for their lunch daily, and provided them with a cell phone for communication with students and parents. Finally, teachers were involved in ongoing decision making at this school. The staff met for 6 weeks over the summer to construct a "clear school culture" (9-20-06) and every Friday during the school year to discuss ongoing issues, at least once until eight o'clock at night. After a crisis in which the Spanish teacher was ready to quit, the staff jointly devised a plan to rearrange the schedule, ease her heavy teaching load, and keep her on board. Mitch also respected that the principal acted "like an equal" (9-20-06) to

her teachers, often staying late into the night, visiting his class regularly, and even taking his quizzes alongside the students from time to time. In William City, he did not feel that he was respected, ". . . they don't treat us like professionals . . . [or give] me my professional respect . . . I think that's the biggest thing that's irritating me, more than anything" (2-15-06). But at his new school he felt like a professional.

At the conclusion of the study, Mitch was actively debating his next steps. A number of options continued to be on the table, including a return to college teaching, and he noted that he hoped to start a family, which might impact his career direction. However, he was heavily focused on moving up within the educational system, particularly becoming a principal and then a superintendent. However, Mitch noted that when he goes into administration "I don't want to lose touch" (6-14-06). His plan was to stay in the classroom for three more years, until his current students graduated, and begin to take administration classes to prepare him to move on professionally.

Alison

At the start of the study, Alison was a third-year chemistry teacher in a small, reform-oriented high school. Like Mitch, she also sought confirmation as one part of moving on professionally. Despite extensive efforts on behalf of the school, Alison did not feel that her work was always recognized or appreciated. During her third year, Alison filled the role of lead teacher for science, but was not officially given the title or paid as such. Alison devoted more time than did her colleagues to their daily professional development sessions, but her work was not always rewarded. She explained that she would like to see some financial compensation for this extra time and effort, not only for the money but also for what it represents:

> . . . that would be really nice if there is . . . a stipend for perfect attendance. . . . Here's $500 because you came every day and . . . I can rely on you. . . . That would make it worthwhile to me not . . . just because it's money . . . but because there are like 15 days when I wanted to take off. My team is in the Super Bowl. I wanted to go to Detroit. But I didn't because I have a stronger work ethic . . . I'm not doing it because I'm going to get rewarded, but it would just be nice. . . . (4-18-06)

Although Alison felt successful, she felt her work was not fully recognized by her colleagues.

At the end of her third year of teaching, Alison applied for, and received, an official promotion to science support teacher. This increase in both pay and status gave her what she had been seeking in terms of recognition for her efforts. Now that she had achieved some sense of professional confirmation, Alison turned to her attention toward a new goal: supporting science instruction department-wide. She initiated weekly planning meetings for science teachers, conducted classroom observations and provided feedback, and set student achievement goals for her department. Alison did struggle to find her way with her new responsibilities. For one, she was concerned about her new status and commented, ". . . it's a little bit weird because now I feel like [the other science teachers] think I'm their boss, and I don't want them to think that" (9-6-06). Moreover, she found that some teachers were more receptive to her support than others, noting ". . . everybody is supposed to come to a planning meeting, but they don't" (12-6-06). However, despite the challenges that came with her new responsibilities, Alison revamped her approach, working toward success in this new realm.

Alexandra

Alexandra was a second-year TFA corps member teaching technology classes at a large comprehensive high school. She initially focused on teaching hands-on lessons. She invested considerable time and money in gathering resources for her classroom and many of her course assignments had a hands-on component. During one observation in her technology class, students crafted scale models of houses. In another class they built their own telegraphs from wood and wire. The latter project required that Alexandra spend her Sunday at a home improvement store buying and cutting wood boards for her students. However, Alexandra's classroom management struggles frequently interfered with her ability to implement these lessons as planned. In Alexandra's classroom, shouting was common, students wandered in and out as they pleased, and students even threw things at her when she was not looking. Alexandra explained:

> . . . You can see where I started writing the notes in black, and a pencil came towards me in the front of the room, and I stopped . . . I was like I'm not gonna sit there and write notes if you're gonna throw pencils at me. I'm just not gonna do it. And this has been an ongoing thing . . . I'll start, something comes at me, I don't even give them a second chance anymore . . . I'm like no. You've had your first and second and third and fifth chances last week. You are eleventh graders. You do not deserve to be treated like that's normal. . . . So we're working towards it. . . . (12-11-06)

Faced with these ongoing difficulties, in the fall of 2006 Alexandra began to turn away from hands-on projects and toward the technology coordinator part of her position. She worked to get each classroom a functioning computer, create a school-wide network, and instruct her colleagues in using the online teacher support system. Even in the classroom Alexandra concentrated her energy on preparing students to use technology, assuring that each student had an email address and could submit an assignment using the digital drop box. For the most part, Alexandra was successful in achieving these more technologically oriented goals. Now feeling that she had made a contribution, Alexandra decided to begin working toward a new career. She planned to stay in the classroom and pursue a master's degree in public health at the district's expense.

Raya

An experienced professional and career changer, Raya was in her third year of teaching when we began working together. In her first few years in the classroom, Raya's priorities lay in constructing authentic learning experiences for her students, crafting elaborate expeditions on a variety of topics. Raya found great success with this approach in her first 3 years in the classroom, so much so that she commented, "I think I'm . . . probably much better than the average teacher . . . in the city" (3-27-06). Given this initial success and encouraged by her participation in a research project, Raya decided to tackle the next goal, focusing her attention on assessing student understanding in the classroom. She explained, "I want to focus more on student work next year . . . give the attention to my students and their work, on top of everything else" (5-22-06).

However, at the start of her fourth year the district increased class sizes at her school to more than 30 students. Raya was unable to effectively implement her time-intensive expeditions and felt she had less, rather than more, time to focus on student work. Observations of her class during this time confirmed that a number of students had begun to slip through the cracks, play-fighting and chatting rather than completing the day's assignment. Raya felt that she was unable to provide the individual attention her students needed, commenting,

"I have all these . . . high maintenance kids, and so you have to stay on top of all their work, and it's really taking a lot just to do that" (9-18-06). Bureaucratic changes in William City undermined Raya's existing success and prevented her from being about to reach her newest priority.

In response, Raya decided to seek a new teaching context where she could more effectively reach her goals. In early December, Raya had already informed the principal that she would not return in the fall unless class sizes were reduced. Instead, Raya hoped to find a charter school that could provide smaller classes and greater support for her student-focused, project-driven teaching model. Raya explained, "I'd really like to teach a few more years" (12-11-06) in that type of environment, but did not expect to stay anywhere long-term. Raya, like the others, sought to make a contribution and was willing to move around to achieve it. Once achieved, she planned to remain in this new environment for only a few years before moving out of the system into some form of education consulting.

DISCUSSION

This study sought to better understand how urban science teachers make career decisions by investigating the relationship between their priorities and their ability to reach those priorities. The literature suggests that this interaction is critical for career decisions but needs further development in understanding just how it leads to career moves. The experiences of the eight case study teachers suggest three distinct themes. First, these urban science teachers eventually planned to leave classroom teaching. Second, they were engaged in an active process of career exploration to find their particular professional path. Third, they wanted to assure that they were making a contribution to urban schools and students before moving on to new roles and responsibilities.

These themes expand upon the current notion of priorities in teaching by illuminating the ways in which teachers' priorities and their ability to reach those priorities play a part in career decision-making processes. All of the case study teachers planned to move out of the classroom and into new professional roles and responsibilities. Johnson notes that in today's world, education can no longer rely on the "hidden subsidy" of women and minorities with limited options in the workforce (2004, p. 19). Similarly, it seems that education can no longer expect professionals to remain in the same role for the entirety of their careers. This finding reinforces recent work on the importance of providing differentiated roles for teachers as one way of keeping them in the field (Donaldson et al., 2008; Margolis, 2008). This study suggests that these urban science teachers embraced the notion of differentiated roles, both within and outside of education. Perhaps further development of these options might provide them with greater opportunities for staying in education and achieving their long-term professional ambitions.

Next, this study integrates the theme of ongoing and interactive decision making, taken from vocational psychology, and suggests that these urban science teachers determined their professional paths through a process of active career exploration. This exploration took place as case study teachers attempted to make sense of the ways in which particular workplace events were meaningful for them professionally. This suggests that the critical relationship between teachers' priorities and their ability to reach those priorities is linked to an active process of career exploration. Throughout the course of this study, case study teachers frequently initiated unprompted conversations about their professional direction. This suggests that new teachers need more support within their schools for this active process of career exploration. Teacher mentoring is already well developed in the areas of instructional and psychological support (Gold, 1996). This study indicates that beginning urban science teachers may also need a new form of mentoring, professional mentoring,

to help them understand, make sense of, and pursue their own unique career paths. This professional mentoring would support beginning teachers in navigating the workplace context, problem solving when issues arise, and supporting the active and ongoing process of career decision making. It could be modeled after student counseling, which offers both personal and professional support at a critical juncture for career decision making.

This study also indicated that these urban science teachers not only wanted to achieve their priorities, they also wanted confirmation that their work made a difference for urban schools and students. This appeared to be a necessary step before they were ready to move on professionally. They sought out praise from colleagues, financial remuneration, and student achievement as indicators of their professional contribution. Teachers traditionally work in isolation. However, these teachers sought feedback and recognition from colleagues, administrators, and students. This speaks to the importance of the professional community for supporting teachers in schools (Grossman, Wineburg, & Woolworth, 2001; Little, 2003). In particular, it reinforces work by McLaughlin and Talbert (2001) on the relationship between professional communities and the direction of teachers' careers. These professional communities might serve as a valuable context for either informally or formally, providing the feedback and recognition that urban science teachers crave as an essential part of their professional lives. Earlier research indicated that teachers want to reach their priorities. This study expands that notion to suggest that they want to not only achieve their priorities but also gain some form of confirmation for their accomplishments from a larger community.

Overall, this study identified several elements in the career decision-making processes of these urban science teachers. The patterns in their experiences suggest that new urban science teachers would benefit from greater opportunities for differentiated roles, the introduction of professional mentoring, and enhanced professional communities for providing feedback and recognition. Although the resources necessary to implement these forms of support may be substantial, it is critically important to invest in retaining the teacher workforce, particularly in the high-need area of science.

Finally, it is not entirely clear the extent to which these themes are grounded in the subject area of science. There is some evidence to indicate that science teachers have higher rates of attrition because of the extensive and lucrative professional opportunities available to them outside of the classroom (Murnane et al., 1991). Perhaps knowledge of these professional opportunities influenced the case study teachers away from classroom teaching and toward more active career exploration. Within the group of case study teachers, those with master's degrees in the subject matter, or, in the case of Raya, in science communication, tended to be interested in opportunities outside of the educational system, such as graduate school, labs, and consulting. On the other hand, those with bachelor's degrees in the subject area and advanced training in education, Denise, Alison, and Matthew, appeared drawn to opportunities within the educational system such as suburban teaching, mentoring, and administration. Therefore, an argument could be made that more advanced training in science and greater experience outside of the school context pulls teachers away from education. However, the teacher with the largest background in science—Mitch held a doctorate in chemistry—intended to continue moving up within the school-based structure. Certainly, their backgrounds in science led to different priorities in the classroom, ranging from Alison's largely formulaic treatment of subject matter to Charlotte's emphasis on problem solving and Raya's entirely thematic approach to essential questions in our environment. But it is not entirely clear whether these backgrounds also influenced their processes of career decision making. This is an issue requiring further investigation. Nevertheless, this study highlights three key elements in the career decision-making processes of the eight case study teachers and suggests potential benefits from differentiated roles, professional mentoring, and recognition and feedback within professional communities.

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