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Blazing a New Path: Collaborating Towards Best Practice in Urban Teacher Education

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Abstract

This study utilized qualitative means to gain a better understanding of the experiences of faculty members from a school of education, college of arts and sciences, and K-12 urban educators as they worked across academic disciplines to create and implement a collaborative secondary urban teacher fellowship program. This study is meant to inform the larger field of urban education on pathways to successful collaboration between universities and K-12 urban schools, as well as between education and content area faculties at the university level engaged in teacher preparation reform efforts.

INTRODUCTION

The purpose of this research study is to more deeply understand the experiences of school of education faculty members, college of arts and sciences faculty members, and K-12 urban educators collaborating across academic disciplines to develop and implement a graduate level urban teaching fellowship experience at an independent liberal arts institution.

This work is informed by theories on collaboration in university teaching, collaborative reform in teacher education, and culturally responsive practice. University teaching has long been thought of as a solitary endeavor (Anderson, 1996), yet many faculty members have discovered the benefits of being part of a group. Johnston (1997) notes that collaborative efforts lead faculty to experience more success with different curricula, various approaches to teaching and extended learning for themselves and their students. Briggs (2007) finds that curricular collaboration undertaken in a community of practice (Wenger, 1998; Wenger, McDermott & Snyder, 2002) creates a context in which ongoing program renewal occurs. However, while collaboration between faculty members is often featured in education program descriptions, many of these programs do not describe the nature of that collaboration (Brownell et. al., 2005). Stein and Short (2001) found several barriers for collaboration between university faculties, including: negative attitudes, worry of hidden agendas, lack of interpersonal skills, and lack of

support from university policy and procedure. Given the critical role of collaboration between content area and education departments at liberal arts institutions, it is important to examine the perspectives of faculty members across the university who work collaboratively to create and sustain teacher education programs.

Because teacher education requires university/school partnerships, it is also important to examine the perspectives of K-12 teachers and administrators who work collaboratively with university faculty to create and sustain teacher education programs, particularly those programs featuring clinical immersion or teacher residencies. In a case study about the development of professional development schools at Ohio State University, collaboration is characterized as a challenging and “fragile process on which to base a reform agenda” (Johnston, Brosnan, Cramer & Dove, 2000, p.3), but also as a powerful tool for the transformation of teacher education. Research on exemplary teacher education programs finds that teacher education reform requires institutional change before universities and schools can operate together as part of a community that values, supports and incentivizes high-quality teacher preparation (Darling-Hammond, 2006). Successful university/school partnerships take time to build and are characterized by mutual trust, honest communication, common goals, shared governance, and a commitment to sustaining a culture of inquiry (Patterson, Michelli & Pacheco, 1999).

Collaboration is particularly important in teacher education programs committed to preparing high-quality teachers for urban schools. The teacher education faculty at the University of Wisconsin at Milwaukee exemplifies an understanding of collaboration as an urban education imperative, since “to meet the complex needs of urban children and youth, the collaborative expertise of professionals in general and special education, family members, agency personnel and other community members will be required” (Pugach, Winn, Ford, & Jett-Simpson, 1997, p.4). A case study of the Urban Teacher Education Program at Indiana University Northwest indicates that master urban teachers play an important role in developing teacher education curriculum, which requires the creation of equity—and creates equity—among district teachers and university professors (Sandoval, Reed & Attinasi, 1993). Boston Teacher Residency Program and Chicago’s Academy for Urban School Leadership are currently rebalancing the equation for collaboration in school/university partnerships in favor of district-based urban teacher education (Solomon, 2009; Berry, Montgomery & Snyder, 2008).

Finally, research focused on culturally responsive practice has the potential to inform any discussion of collaborative program development in urban teacher education. This body of work explores the various aspects of ethnic understanding that teachers must acquire to effectively educate students (Ladson-Billings, 1994; Gay, 2002) and challenges educators to explore the pedagogical manifestations of cultural values. Some researchers argue that U.S. schools operate under Eurocentric values and document various classroom interactions as evidence of this bias (Banks & Banks, 2004; Delpit, 1995; Garcia & Guerra, 2004; Howard, 1999; Sleeter et. al., 2004). Most recently, this work has raised concerns about the ability of schools of education to adequately prepare highly qualified urban educators at the secondary level (Darling-Hammond

et. al., 2002) and has called for schools of education to work more collaboratively with K-12 practitioners and urban communities to create more comprehensive urban teacher education programs. This research should inform the ways in which universities build relationships with urban schools and communities, so the collaboration between institutions itself exemplifies culturally responsive practice.

University of Indianapolis: Communicating, Collaborating, Decision-Making

The University of Indianapolis (UIndy) is a small liberal arts institution, located in Indianapolis, Indiana that serves approximately 5,000 students. The university is accredited by the Higher Learning Commission and a national survey found that students ranked UIndy faculty near the top in accessibility and helpfulness. Not surprisingly, given this student-centered approach, faculty members within the School of Education (SOE) and the College of Arts and Sciences (CAS) at UIndy are committed to navigating the volatile waters of higher education collaboration. In 2002, the Association of Independent Liberal Arts Colleges of Teacher Education (AILACTE) recognized UIndy as a program of distinction for the efforts made by both SOE and CAS in the creation of the Center of Excellence in Leadership for Learning (CELL). These two programs came together again in 2007 to create the Woodrow Wilson Teaching Fellowship Program.

Not surprisingly, the UIndy Woodrow Wilson Teaching Fellowship Program has established partnerships with the Metropolitan School District of Wayne Township, the Metropolitan School District of Decatur Township, and the Indianapolis Public Schools. The relationship between UIndy SOE and these three urban districts has been in place for more than five years. Historically, the relationship between UIndy and these schools has been typical as defined by Johnston (1997), but with the opportunity of creating the Woodrow Wilson Teaching Fellows Program the university decided to embark on a more reciprocal and dynamic experience for both university and K-12 faculties. Additionally, the K-12 partners were excited about this opportunity and willing to engage in program development activities with the UIndy faculties in efforts to grow their own future colleagues and have a more prominent voice in the teacher education process.

The Woodrow Wilson Teaching Fellowship Program

The Woodrow Wilson National Fellowship Foundation selected UIndy as one of four host institutions for its Indiana STEM Teaching Fellowships. The other three institutions selected are Purdue University, Ball State University, and Indiana University Purdue University—Indianapolis (IUPUI). Of these institutions, UIndy is the smallest institution; it is also the only private institution and the only liberal arts institution. The Woodrow Wilson Teaching Fellowship Program (WWTFP), which is being scaled up in states across the country starting with Indiana, has two purposes: 1) to create the equivalent of the Rhodes Scholarship for teachers so as to recruit high-quality candidates into science and math teaching in urban and rural

high-need schools; and 2) to improve the quality of teacher education in America's colleges and universities through restructuring the curriculum and expanding the clinical experience. The components of the Foundation's Fellowship program were informed by Arthur Levine's work (2006).

UIndy has used the \$500,000 in grant money provided by the Woodrow Wilson Foundation and the Lilly Endowment to create a new 36-hour Urban Teacher Residency Program leading to the Master of Arts in Teaching degree. Here are some of the highlights of the program:

- ***The program has adopted a cohort model.*** Fellows take all courses together, either as a full cohort or in three content-area cohorts, and Fellows are placed together in urban schools representing three partnering districts.
- ***The program immerses Fellows in urban schools from day one of the program.*** The clinical component of the program places Fellows in urban schools three days a week during the fall semester and five days a week during the spring semester. For the sake of continuity, Fellows are assigned to a focus class in one partnering district to participate in for the entire year. However, Fellows have extensive experiences in all three partnering districts as well as several urban charter schools.
- ***District teacher-leaders are an essential part of the program.*** The program has hired seven clinical faculty members who are exemplary urban math and science teachers in the partnering districts. These clinical faculty members collaborate with the program's clinical/mentoring coordinator and the cooperating mentor teachers to facilitate the Fellows' clinical experiences, and serve as university supervisors during the spring full-time student teaching experience.
- ***Fellows are mentored during their first three years of teaching in an urban high-need school.*** The mentoring program includes two years of intensive one-on-one coaching and a third year built around urban teacher-leadership.
- ***A challenging project-based curriculum will prepare Fellows to teach in 21st century schools.*** The partnering districts need teachers who are trained in project-based learning as well as more traditional teaching methods. However, as our district partners have said, and as Thomas (2000) has found, many teachers who are asked to create and implement project-based learning curricula lack the training to do so. The projects that comprise the Fellowship curriculum are carefully linked with clinical experiences, and several themes germane to urban education infuse the curriculum: literacy; equity and diversity perspectives; learning differences and special education; formative and summative assessment; rigorous and engaging content; and the application of theory and research to practice.

METHODOLOGY

This study utilizes an emergent qualitative design to explore how the UIndy SOE and CAS faculties collaborated with each other as well as K-12 urban partners to create the WWTF program. This article will specifically outline the journey this group of educators embarked upon to develop a new teacher education program within an existing school of education, made possible by the support of an outside funder.

Given that this program is currently in the initial stages of implementation, and given the histories of collaboration between faculty members on campus and with the SOE's K-12 partners, we recognized our opportunity to track the process of collaborative program development. This study was initiated by a junior faculty member whose research interests include collaboration and urban education. After receiving funding for the study, she partnered with a newly-hired junior faculty member to complete the study. Neither junior faculty member was affiliated with the program until after the study was completed. After data had been collected and de-identified, the program director became the third investigator of the study.

A qualitative emergent design was utilized (McMillan & Schumacher, 1997; Merriam, 1997). Qualitative measures, including interviews and focus groups, were employed from an emergent perspective. Our interview protocol contained open-ended questions and we, as the researchers, were not assuming that we knew the experience. The data set includes interviews and focus groups conducted in spring 2009 that lasted from twenty minutes to one hour in length, as well as researcher notes kept during data collection. In order to capture the complexity of information and to gain insight, multiple perspectives were important to acknowledge. Participants from SOE, CAS, and K-12 settings were recruited, and recruitment procedures ensured that the participant groups included faculty, staff, and administrators to encompass as many views of the experience as possible. Fifteen total participants were interviewed, all of whom played a crucial role in the attainment, development, and/or first year implementation of the WWTF program. Of these, six were university administrators, five were university faculty in SOE or CAS, and four were K-12 educators from partnering schools. This group was made up of four men and eleven women, all of whom were white and middle class with at least a master's degree level education. By utilizing discourse analysis (Gee, 2005) to analyze various interview data—personal portrayals of the experience—this research relied on inductive reasoning to document emerging themes.

After receiving approval from the university's IRB for this study, interviews were audio taped and transcribed in their entirety. Member checking was employed. Interview transcriptions were returned to the interviewee to check for accuracy and to seek additional response. Interview protocols used in the study were constructed by the researchers in order to specifically target the aims of the research and to conduct semi-structured interviews and focus groups (Appendix A).

The researchers read and reread the transcripts several times as data collection took place. As recommended by Gee (2005), we analyzed the data—looking especially for participants’ sense of status and expectation, as well as impressions of earlier interactions—in order to “set the analysis of this narrative in the larger context of the whole” (p. 153). Following this method, we not only analyzed the words used by the participants literally, but also explored the context within which they described these events as well as the particulars of the events the participants described as important to them. We then began to construct categories or themes that emerged from the data collected (McMillan & Schumacher, 1997; Merriam, 1997; Stake, 1995). Throughout the data collection process, the researchers analyzed the data and kept audit trails (research notes), as well as engaged in peer debriefing activities with each other as the data emerged.

RESULTS

In order to provide rich context, a narrative of the program attainment and development process is provided from researcher notes. Several themes emerged from the interview and focus group data collected in this study, and will serve as an organizing principle here: Leap of Faith; Collaborating; Decision-Making; and The Promised Land.

Program Development Process

An initial steering committee worked for a semester to search for a program director, to establish the program planning process and to appoint a program planning team that would consist of multiple stakeholders, such as K-12 partners and university faculty from SOE and CAS. The program director was hired and assumed the position in June 2008, and the program planning team met in June and July 2008 with the task of designing a new urban teacher education program with a math and science focus that was to be fully implemented in the subsequent fall semester. The program planning team consisted of K-12 teachers from partnering school districts, College of Arts and Sciences faculty, School of Education faculty, and a representative from the Center for Excellence in Leadership of Learning (CELL). Prior to meeting in the summer, all participants were given a copy of Linda Darling-Hammond’s book *Preparing Teachers for a Changing World: What Teachers Should Learn and Be Able To Do* (2005) to read in preparation for the summer retreat. Data reveal that little direction was given to the participants about what to do with the book, but there was an expectation that all participants read the book. Data also reveal that there was very little information disseminated about the program or the agenda prior to the program planning meetings in June 2008.

In the beginning of this summer retreat time, there were multiple conversations about what to develop in this new teacher education program; participants report that there were many instances of going around and around the same ideas. The leaders of the program planning team continued to look to the Woodrow Wilson Foundation grant guidelines for clarification as to the primary objectives of the to-be developed program. After a few days and on a tight schedule, the

program director, with expertise in fields outside of teacher education and the specific content areas taught in the program, redirected focus and articulated a framework for the program planning team. This framework was grounded in Linda Darling-Hammond's study of exemplary teacher education programs (2006), as well as in the grant guidelines and the K-12 partners' expressed interest in hiring teachers trained in project-based learning and other inquiry methodologies. The program development focus then shifted to emphasize the entire program, not course-by-course development, and much of the minutiae and specific implementation details were left out of this discussion to keep the focus on the program's overall design. A transition-to-teaching program existed at the university already, so a working pattern was available as a model. However, the decision makers in this summer retreat really wanted to see the Woodrow Wilson program become something unique and innovative. One of the charges from the Director and from the Woodrow Wilson Foundation was to develop a program that would help revolutionize teacher education.

Participants on the program planning team were divided into small groups. The small groups were: Curriculum Committee; Clinical and Mentoring Program Committee; Admission and Marketing Committee; Research and Evaluation Committee; and Unit Assessment System Committee. Through the small groups participants worked collaboratively, engaged in rich conversation, shared and discussed suggestions and ideas for development, and brought proposed ideas to the full group. The make-up of the groups provided multiple perspectives and voices, which added depth to the program as it developed. Further, the program planning team was charged with finding scholarly work to read, review, and use as a foundation and support to various program components, and a primary goal of the Unit Assessment System Committee was to align program development to the K-12 Academic Indiana State Standards. The data indicate a concerted effort on the part of everyone involved to make sure that program development went forward.

Leap of Faith

Each of the faculty members and K-12 educators interviewed for this study had varying degrees of understanding regarding program development and implementation efforts. It is interesting to note that administrators from both the university and the K-12 schools interviewed had greater degrees of knowledge about the program's inception, while university faculty members had greater knowledge of the program design and curriculum. Initial decision-making appears to have been top down from university administrators, while details such as program design and curriculum development were left to the full discretion of the university faculty and K-12 teachers.

Of high interest is the fact that all administrators in the study initially felt that this program was going to be either a great success or a huge failure. One noted, "This was either our chance to be truly innovative or recreate the status quo." While higher education endeavors like this have historically been grassroots initiatives originating with the faculty that then require

administrative approval, in this case the process was reversed. While some UIndy faculty reported angst around the curriculum development phase, the administrators reported angst around program inception and attainment. These administrative tensions then filtered down to faculty, who initially viewed administrative commitment to the program as an infringement of faculty academic freedom.

However, other faculty viewed administrative commitment to the program as the support they needed to break with the current status quo and implement an innovative program. One participant noted, "...there was a lot of tension around the WWTF program. People felt like it was rammed down their throats. There were people in the Ed department, I'm sure you've heard, that aren't happy about WW, and still aren't happy, and probably a year ago were probably less happy about it." Another participant said, "We left it to the faculty. It would either die or thrive because of their commitment." Another stated, "Because this was so new, administrative guidance was needed because the process was so unclear and the timeline was so fast." Across all participants, transparency of vision of the program and its goals were discussed as an overlying issue of concern.

Collaborating

Of high interest are the voices of the K-12 educators involved in the planning process. Many of these participants voiced concerns about their place in the process, noting that they were invited to meetings, but not given much background or follow-up information about decisions. Some K-12 educators reported feeling they were invited to take part in committee work so the university could say K-12 educators were at the table, but not authentically listened to as part of the program development. One K-12 participant felt that most of the curricular decisions had already been made and she was included as more of a "rubber stamp" than an expert in her content or in urban education. Another stated, "I'm still not sure how all of the parts work together. It would have been helpful to have gotten information before entering the meetings. I haven't heard anything since the summer meetings so I don't know where things are now." However, other K-12 educators liked the process and felt included as part of something new and innovative that would support their schools with high-caliber future colleagues. One participant noted, "I liked being part of the brainstorming process and dreaming. My preparation was never like this."

After participating in this collaborative planning process, some university educators welcomed the benefits of more authentic collaboration with K-12 partners. One faculty member noted, "We worked together and got along and liked each other, yet we've never really worked together as equals." While some of the K-12 participants felt the WWTF program development process was a time to dream big, the university faculty felt program planning added a large amount of work to already-heavy teaching and service loads. Many university faculty members felt they were included too much in the process and could not focus on their existing responsibilities during the curriculum development phase of the program. One participant stated,

“This faculty already has so much on their plates and this was just one more thing added. We couldn’t let the other programs fall to the side just to get this one up and going. It was very hard, but I think the hardest times are still coming.” Both SOE and CAS faculty also expressed angst about future workloads related to authentically running a new program.

Decision-Making

Examination of the data depicts a clear and distinct shift in the decision-making processes that occurred during the inception, development and implementation phases of this program. A semester after the initial announcement and award were made, the SOE administration changed and the WWTFP director was appointed. An overwhelming majority of participants note that these changes created a climate shift and ultimately led to the success of this program. K-12 and higher education faculty all noted that these new leaders were more supportive of innovation and “outside-the-box thinking.” One participant noted that “we actually started discussing details about resources and how to share load across SOE and CAS to authentically co-teach coursework” at the university level. Faculty participants shared their sense that key administrators sought to “walk their talk and not just give lip service to best practice.” Both K-12 and university faculties also felt that necessary guidance was given in order to get the program through the university curriculum approval process while maintaining a strong connection to emerging theories of best practice in urban education.

The leadership structure for this program differed from the usual lines of report at the university, which created some tension. The guidelines from the Woodrow Wilson Foundation required that, as one participant notes, “the Director reports to the Provost, which is totally outside of the university structure, and if anything has caused the most tension.” Additionally, “the idea is that for the three years we have this grant, that is the way it’s going to be. But some raise the question, now what is it going to be after that?”

The Promised Land

It is important to note that while the path to create and implement this program is taking us through uncharted waters, all participants express a sense of pride that the University of Indianapolis Woodrow Wilson Teaching Fellowship Program has emerged as strong and innovative. One participant stated, “I feel good about this work. I feel like I was part of something that will have a meaningful impact on education and schools.” Others observe that being part of this planning process has impacted their own practice. One CAS faculty member noted, “Being part of the WWTF program has made me a better teacher. I use these experiences in my other courses as well. Overall, it really has been a good experience.” One administrator said, “I think a lot of the tension has ratcheted down for people, because again, they think it’s a good program. They think it’s a good thing.”

DISCUSSION AND IMPLICATIONS

We recognize that this study reflects the program development experiences of one university and their K-12 partners. However, we believe that the lessons we have learned might provide direction to other institutions as they embark on similar journeys. First, it is important to hear the voices of teacher education faculty and college of arts and sciences faculty as they collaborate across disciplines to create innovative models for urban teacher preparation. Second, it is important to hear the voices of K-12 urban educators discussing their perceptions of working collaboratively with universities, particularly given the push for universities and K-12 urban schools to work together to prepare highly qualified urban educators. Third, it is important to understand and anticipate the ways in which faculty, K-12 teachers, and administrators inhabit educational institutions which can both support and inhibit their collaborative efforts to reform teacher education, and to press for institutional change when necessary.

The following practices are recommended for universities and K-12 schools as they collaborate to create vibrant, innovative urban teacher education programs:

- *Authentic Collaboration.* It is crucial to ensure that the individuals brought into the program planning process are reform-minded faculty leaders and teacher leaders who collectively represent expertise in all aspects of urban teacher education. Some of the early challenges to the program planning process occurred because not everyone was at the table that should have been at the table. Further, all faculties involved in program planning (SOE, CAS, and K-12) should be given an equitable knowledge base, decision-making power, follow-up information, and tangible resources. Much angst was reported at all levels, especially among K-12 educators, that could have been curbed if the process had been more transparent, particularly in the early stages of program planning.
- *Deliberately Emergent Design.* If administrators procure funds for urban teacher education reform, they should clearly communicate their initial understanding of grant and program goals, mission, and outcomes at the beginning of the planning process. After that, it is important for administrators to provide all faculties (SOE, CAS, and K-12) with time, space, and tangible resources to allow the collaborative process to unfold and the program design and curricular details to emerge in an informed way, particularly in relation to the needs of urban school district partners. This type of structure ensures academic freedom, yet provides a directed framework within which SOE, CAS and K-12 faculties can work together creatively.
- *Relationship Building.* It is important to understand that the quality of the relationships developed during the planning process will play a substantial role in determining the success of the program itself. If strong relationships are built between individuals during the planning process, then those relationships will undergird the relationships between institutions and the program itself. These relationships must continue to be nurtured, and,

if so, they will develop in planned and surprising ways over time. It is a powerful thing when teacher education faculty, college of arts and sciences faculty, K-12 urban teachers, and administrators talk and work together as educators, and to get to know each other as human beings, in order to create innovative teacher education programs to serve urban students, schools and communities.

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Appendix A

Interview Protocol Questions

1. Why did you choose to be part of the WW development work at UIndy?
2. How do you perceive and describe your...
 - relationship between self & WW?
 - experience of collaboration of SOE/CAS?
 - involvement in getting WW started?
 - role in WW development/collaboration?
3. What was the best part of collaborating on the WW development for you?
4. What was the biggest challenge to collaborating on the WW development for you?
5. What changes do you associate with the experience in the WW program and your own practice?
6. What feelings were generated by this collaborative experience?
7. What thoughts stood out for you?
8. Describe your first [last, most memorable, etc] experience w/ WW.
9. Describe your experience throughout your involvement with WW.
10. What are the biggest challenges you foresee for the WW program at UIndy?
11. What hopes do you have for the WW program at UIndy?
12. Have you shared all that is significant with reference to your experience?

A Pipeline Program for Urban Community Teachers: Standing in the Gap of Achievement and Possibility

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Abstract

“Paterson Teachers for Tomorrow” is a project designed to attract high school students from Paterson, NJ to careers in teaching. This article is based on an exploration of high school students’ sense of self, college awareness and preparedness, and academic achievement during a year-long pre-college program. Data indicate that students developed a strong self-concept as capable learners through the structure, activities and opportunities to see themselves accomplishing their academic goals. The program also succeeded in raising college awareness by allowing the students to be on campus and see what it takes to get there and stay there. Finally the program increased student’s academic skills through a rigorous, comprehensive curriculum that challenged students at every turn to be their best.

INTRODUCTION

College access and college preparation are widely accepted educational goals. Much of the discussion centers on the ability of high schools to adequately academically and socially prepare students to go and succeed in college. Over the past few decades there has been a proliferation of programs that prepare students to go to college (Bailey and Karp, 2003). Paterson Teachers for Tomorrow (PT4T) is one of those pathways. Started in the spring of 2000, PT4T is a collaborative project between the city of Paterson, NJ, William Paterson University, and a private foundation committed to urban uplift. The program was created to attract talented high school students from Paterson to careers in teaching, prepare them to be effective teaching professionals, and return them to the Paterson Public Schools. The program includes a high school component and a university component. This article provides a discussion on data collected from the high school component¹ which brought four local high school students to the William Paterson University campus.

¹For a description of the program including structure, components, and theoretical framework, please see Hill & Gillette (2005)

Pre-College Programs

There are many types of college readiness programs (Bailey and Karp, 2003; Thurston, 2009). Some comprehensive programs emphasize “academic rigor and enrichment” while others emphasize this as well as the “social-psychological preparation” for college (Bailey and Karp, 2003; Kleiman, 2001; Tinto, 1993). There are several models that suggest the importance of bringing secondary students onto college campuses prior to applying to college (Bailey and Karp, 2003). Two comparable universities have established similar programs: 1) Fairleigh Dickinson University - The Summer Scholars Program, and 2) Spelman College’s college prep and early college summer programs.

Another body of literature examines systems of support for building a “college-going-culture” such as the importance of community, family, friends and university faculty (The College Board, 2006; Jarsky, McDonough & Nunez, 2009; Holland & Farmer-Hinton, 2009). The belief is that bringing urban high school students onto campus will provide them with access to resources otherwise inequitably distributed in the local community. In addition students will have the opportunity to engage in on-campus activities and become familiar with the “culture” of higher education—making it less intimidating. Similar to other pre-college programs, the PT4T high school program identified recruitment and participant involvement, college awareness and preparation for higher education, and an increase in students’ academic skills through a rigorous comprehensive curriculum as the overarching goals.

Theoretical Framework

This research is grounded in womanist theory (Hill, 2003), a standpoint that embodies a commitment to teaching and community uplift, and the notion that students in urban schools and students of color require life skills that are politically conscious and culturally relevant. A womanist framework believes that a college preparation program must prepare the whole student for the academic, personal, economic, cultural and social rigors of college. Acclimating students to college involves a well rounded experience, one in which the college process is demystified through an academically intensive, personally relevant, culturally significant way.

We also used womanist theory to help direct our methodology. As such, in collecting and analyzing data we were guided by characteristics like using the everyday experience as a criterion for meaning, the use of dialogue in assessing knowledge claims, the significance of an ethic of care, and the ethic of personal accountability.

This study explored the following research questions:

1. In what ways did participant involvement help students to develop a strong self-concept as capable learners and the feeling of being part of a special group?
2. In what ways did this program raise college awareness and preparation for higher education?

3. In what ways did this program increase students' academic skills through a rigorous and comprehensive curriculum?

METHODOLOGY

Multiple methods were used to create a more complete picture of experiences of the high school students, counselors and staff. Students attended urban state takeover public schools and had varied ethnic backgrounds including: Hispanic, African American, and Afro-Caribbean. There were four phases of data collection which occurred over the three week summer session: 1) individual tape-recorded, semi-structured conversational interviews with four high school students, 2) observation of the math class, 3) a focus group with three of the summer/fall students, and 4) a student questionnaire. Pseudonyms were used throughout the paper to maintain participant anonymity. The data analysis consisted of an open coding, theme assessment, more coding and then a pattern analysis (Yin, 1994).

The limitations of this study are that the researchers collected the data over a short period of time and only collected data from some of the participants (notably we were missing many of the male voices from the program). However, it would have been an additional advantage to have followed up the questionnaire with individual interviews to get more in-depth information and to have followed a few cases over time to get in-depth portraits of who succeeds and why.

RESULTS

Being capable learners and part of a special group

"It turned out that it wasn't that hard after all. I just lived the challenge..."

Several of the participants and the instructors noted that the structure of the program and the group cohesiveness helped them to step up and be capable and confident learners. Maria's efforts to "live the challenge" reflect the realities of the students in this program. Maria recalled "I just thought I wasn't able to do it ... turned out that it wasn't that hard after all. I just lived the challenge." One of the professors shared a similar insight when she described how "some of them found that they were either nervous or scared about college and [they] also found out that it was more attainable." Part of being a confident, capable learner entailed self-reflection. As Dr. Walker, noted "We had seniors coming in saying... 'I failed a test today in math, I'm gonna need extra help.'" The program made students reflect and take action around their own learning needs. This is consistent with research that maintains that students who are aware of themselves as learners and set personal goals, do better (Page-Voth & Graham, 1999; Schunk, 2003).

Students felt confident and capable within the context of a scaffolded learning environment. Several of the students commented on the program's support system. Keisha, noted that in the program she learned "different ways to solve problems, different ways from what I learned in

school.” Elisa commented on learning “Power Point and Publisher and scanning and other things that I didn’t know when I was in high school, when I should have learned it.”

Part of becoming a confident and capable learner is getting the knowledge one needs. The math professor, Dr. Lorde, noted how she tries to “to cater to their [individual] needs and it’s amazing that you can ask 15 students and I can literally see 15 different levels.” A literacy professor commented how “there tends to be a rhythm where we know who needs modification, what we need to do if kids haven’t been there.” One of the elements that make this program work is the self-reflective nature of the design--students, teachers, counselors, tutors are all thinking about the learning that is occurring.

Comments across participants illustrate the role of a nurturing, risk-taking, caring environment in building confident, capable learners. Elisa expressed a common sentiment among the students stating that in the beginning she questioned herself. “Am I going to be alright?” She said that “at first we had to get to know each other...we became a whole family...Then it was easy.” Dr. Walker reiterated this sentiment, “I don’t think that happens right away. I think students have to go through a trust process first. When students trust each other, they discuss their misunderstandings, ask for help, and make meaning through shared conversations.” As they do this they become confident and capable through collective effort.

Raising college awareness and preparedness

“The program helped me learn what I’m supposed to expect from college, and what college expects from me.”

All of the students and staff felt that the program raised students’ college awareness. Elisa noted that, “The program kinda helped me in college prep, learning what I’m supposed to do, interviews...so many things I should be aware of...I probably wouldn’t of been successful in knowing anything about college. I’m the first from my family to graduate from high school...period. Sooo...they were kinda like my parents...you know they helped me a lot.” While this kind of parenting – “other mothering” (Hill & Gillette, 2005)--comprises the program’s foundation, the high school program also reached out to parents for sustained parental involvement. Brian noted that parents “were invited to campus events and parent dinners” and had opportunities to expose their students to opportunities “they never had.”

Both students and staff felt that the program prepared students for succeeding in higher education by watching the experiences of others. One professor noted that “the students got to see the difficulties for navigating entrance to college.” Keisha noted that, “It helped me ...by teaching me what goes on in a [college] classroom.” Dr. Henry commented that the students are exposed to “a wide variety of text that they wouldn’t normally interact with in their regular high school classroom ...they become more responsible and they are able to talk in small group discussions and do presentations.”

This idea of expanding skill sets (to not only mean academic skills but also social and communication skills) was a common thread in the interviews. Elisa commented that “talking to people... that was just something I felt uncomfortable with, it kinda got me out of my shell, cause I get to talk a lot. I think that helped me a lot.” Dr. Lorde also spoke about teaching transferable skills, “...preparing them for college courses in general but one of the things I do in math is... is I try to make it around problem solving because that’s universal ...that should stay with you throughout all of your life.” Teaching content and life skills is an example of a kind of other-mothering pedagogy that is rooted in a womanist ethic of care. Teacher educators of color, in particular, practice this type of womanist pedagogy (Hill, 2003).

Another critical component of raising college awareness was being at the university. One of the counselors noted that the students “get the college life experience...just to give them the experience before hand... so that they feel more comfortable being here, before they get here.” Keisha described it as “an experience...it was fun, exciting, it was different from going to a regular school.” Brian noted, “I just think overall it’s a better atmosphere because they are out of their environment...they’re getting something, a taste of something. So I think nothing but good can come out of that.” In describing the value of coming to study at the university campus, Dr. Walker commented on the magic of possibility:

Its eye opening...seeing the possibility of themselves is eye opening. I spoke to one parent and she said that her daughter’s conversation at home has changed; she said all she talks about now is going to college; and she wasn’t talking about that before. So I think that having them on campus, they got the experience that it’s doable. College is doable; it’s not something that is so farfetched.

By physically being on a college campus, high school students got an opportunity to see themselves as college students, thereby increasing college awareness.

Increasing students’ academic skills through a rigorous curriculum

“It was all that-- it was exciting and challenging.”

When asked about rigor, the data indicate that students and staff felt that the pre-college program was rigorous, given the time frame, context and possibilities. Keisha noted that “Some of the things you do are a little challenging, but they help you, most of the time so you know what you’re doing.” Tina, another student described how in the program, “They challenge you to think outside the box.”

A common theme that pervaded the conversations about rigor had to do with differentiated instruction. One of the literacy professors noted, “I think we modify based on the students and we make it as rigorous as possible for each.” Another professor mentioned, “The fall was very rigorous. It was very intense...We did a lot of pre- and post- assessment. We really tried to differentiate instruction. We had a lot of small groups and provided tutoring and things were

individualized as well as we could.” From these comments we see that there was an individualized rigor that permeated the program. Each student was individually held accountable to being the very best they could be.

Another common theme that arose in the discussions about rigor had to do with how attendance interferes with rigor. In commenting on how they had to create a more flexible attendance policy, one professor noted that, “Yes the attendance prevents it being as rigorous as it should be... I mean, for a lot of the kids, work is an issue. Sports is an issue. And a lot of our students attend performing arts school, and they can’t miss performances.”

Increasing students’ academic skills through a comprehensive curriculum

“Did we cover everything in 3 hours to make up for inequitable access to a good Paterson education?” No, but was it comprehensive for 3 hours a week? Absolutely!”

Everyone felt that the program tried to encompass the various needs of the students. Dr. Lorde described an interdisciplinary geometry flag assignment that covered not only math but several other skills, noting that,

It is global and multicultural and inclusive of other content areas, because they also have to write. I told them, they have to check the grammar, the punctuation and point out to those who brought it to me their errors.

Dr. Walker noted that they “focused on literacy, technology and math and I think what would have made it more comprehensive was science. We touched on geography through math.” Brian discussed how “...the program definitely increased literacy skills, study skills, finance skills, interview techniques and things like that. It was comprehensive.” Another professor echoed these same sentiments, stating, “It’s very comprehensive. ...We’ve really focused on the NY times articles; we had SAT prep; and we had a very successful book club on Saturdays...So many pieces were fit into the three hours.”

Exposure to multiple experiences across time raised confidence and academic achievement levels. One student said, “I have improved, because I’m a much better reader....I’m faster.” Dr. Lorde had students reflect at the beginning and end of her math courses. At the beginning she asked, “How many of you have been afraid of math? How many of you believe that you don’t like math?” She found “the majority, and sometimes all of them are either afraid of math or don’t like math or don’t believe that they have the ability to do math” but by the end of the project, students’ math anxiety were “significantly reduced” and their progress was reflected in their grades and SAT scores. Program post test results indicated significant increases in math and reading. This was a huge accomplishment and an important area of focus especially in light of the recent National Math Report (April 2008) that notes how much of a gatekeeper math is in our educational system.

All of the participants of the program felt that technological skills increased. The literacy professor compared the change in technology skills between this summer and last summer. In comparing power points from entry to exit she saw,

...a spectacular difference, you know just being able to use a USB, being able to import pictures, change fonts, being able to express themselves visually, being able to attach files, being able to use different software...Technology has just taken off. It is wonderful.

This program is equipping students with repertoire of 21st century skills (Wagner, 2008) including “technological literacy, oral and written communication, critical thinking, collaboration and ethics” necessary for their future (Symonds & Gonzales, 2009).

DISCUSSION AND IMPLICATIONS

The overall program reached its anticipated outcomes by being flexible and responsive to the high school students’ needs. Set against the backdrop of the national achievement gap, this program seriously addressed the needs of traditionally underachieving students of color. The implications of this study lead to the following conclusions.

First is the reality that it takes a plethora of human, material and physical resources to successfully implement a college prep program. The deep commitment of the professors, counselors, tutors, program assistant and students was the life-breath of the program. The abundance of material resources –educational materials, equipment, travel and food also contributed to the effective implementation of the program. All of these micro-issues such as transportation to the program, meals and the required resources to do the work, met students in their areas of need and allowed them to focus on learning. The physical resource of the campus setting provided a context for learning, specifically in the context which they were learning about and towards. Given all these resources, students eagerly participated in the program and coming up to the campus for the program poignantly provided them with a wider lens about college life. They gained an insider’s perspective- a view from within. They went to college, were taught by college professors, and worked with college students, essentially they had “full access.”

Second, scaffolded learning with meaningful activities translated into students feeling like their involvement in this program mattered. The purposeful activities not only encouraged participation but also helped students to achieve the stated goals. The structure of the program held students accountable not only to learning their immediate studies, but also to gaining the knowledge, skills and attitudes necessary to go to college and succeed. Moreover, students learned that learning is multifaceted and can be approached in many ways, and that as confident and capable learners, they can find a way to do what they set their mind to doing.

The third implication is that academic activities can provide skills, knowledge sets and attitudes that students will need to be successful, not only in high school but also in college. The academic activities built habits of mind such as perseverance, effort and confidence. The

activities were designed in such a way that the subject matter, the educational methods and the various events, all engaged the students. The staff had a way of making it plain and accessible.

Moreover, students not only gained many valuable academic skills, but also many social ones such as learning how to get along with others, communicating in front of others and problem solving. Integrating these skills across the curriculum provided purposeful practice. Students had to read, write and use technology across the curriculum as an integral part of their learning. While student's academic skills increased, so did the possibility of themselves as college students and as teachers able to change the lives of families and communities like their own. Students were empowered, and as such, they began to bridge a gap of achievement and possibility.

CONCLUSION

There were several significant findings from this study. The first was that this program stood in the gap in several ways. It stood in the achievement gap, raising academic levels of traditionally underachieving students and preparing them to go on and succeed in college. It stood in the home-school gap, by being the liaison between potential first generation college students and their high schools and universities. It taught them, as one student poignantly noted, "what they should have learned" in high school. Moreover, it taught students the skills they needed to succeed when they got college. The program stood in the possibility gap by empowering students to see the possibility of themselves in college through success and achievement.

We have found that the tenets of a womanist framework - involving a well rounded, comprehensive, soul/mind/body deep approach to college preparation is a "promising practice" in terms of helping ethnic minority students go to and thrive at college. Policymakers and educators should consider the following areas for further research: 1) the importance of first generation parents as partners on the pathway to college, 2) the importance of metacognitive practices on student confidence and achievement, and 3) the intentional integration of 21st century skills across preparation coursework.

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The Learning and Practice of Preservice Teachers in an Urban School-University Partnership: The Struggle to Enact Culturally Responsive Pedagogy

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Abstract

This paper reports on an interpretive, collective case study that examined preservice teacher learning and practice in an urban school-university partnership. Multiple data sources were collected from 55 predominantly White middle-class preservice teachers at a predominantly Black and Latino high school, including pre- and post-surveys, coursework, lesson observations, interviews, and artifacts. Findings suggest participants clearly articulated their learning about culturally responsive pedagogy (CRP), but they struggled to apply their learning in practice. This study confirms that important preservice teacher learning can take place in urban school-university partnerships, especially if the teacher education experiences make explicit applicable theories such as CRP.

INTRODUCTION

This study is framed by two research problems. First, school-university partnerships (SUPs) and professional development schools (PDSs) are teacher education collaborations that may provide the context and conditions for improved teacher preparation and for recruiting and preparing urban teachers with on-site courses and field experiences, among other things (Abdal-Haqq, 1998; Guadarrama, Ramsey, & Nath, 2008; Peterman, 2008; Wong & Glass, 2005). However, not enough is known about preservice teacher education in partnership, generally, and whether partnership preparation effectively recruits and prepares urban teachers, specifically. More research is needed to link the context of the partnership to the outcomes for preservice teachers (Abdal-Haqq, 1998; Sleeter, 2001; Teitel, 2001), especially related to culture and urban teaching.

Second, a call has been issued by some in the profession to conduct teacher education research that focuses more on connections between what preservice teachers learn in preparation experiences and how they apply that learning in their practice with pupils (Cochran-Smith & Zeichner, 2005; Wilson, Floden, & Ferrini-Mundy, 2001). This line of research is still developing. Clift (2008) argues, "There is little data to provide links between an individual's knowledge, their learning within a teacher education program, their actual teaching in schools, and their students' learning" (p. 828).

This small study aims to make a contribution by reporting findings from an interpretive, collective case study that examined preservice teacher learning and practice in one urban school-university partnership. In this partnership, preservice teachers completed secondary teaching methods and inquiry coursework at one high school every Thursday before and after school for one semester in conjunction with spending the school day working in classrooms with teachers and students. Participants were partnered to work in classrooms teaching individuals, small groups, and whole classes of students throughout the semester.

Primarily drawing upon the theories of Irvine and Armento (2001) and Ladson-Billings (1994, 1995), culturally responsive pedagogy (CRP) was a conceptual framework for organizing the curriculum and instruction that participants examined in coursework and were encouraged to apply in fieldwork. As Irvine and Armento (2001) explain:

The term *culturally responsive pedagogy* is used interchangeably with several terms such as culturally responsible, culturally appropriate, culturally congruent, culturally compatible, culturally relevant, and multicultural to describe a variety of effective teaching approaches in culturally diverse classrooms. These terms all imply that teachers should be responsive to their students by incorporating elements of the students' culture in their teaching... Responsive simply means reacting appropriately in the instructional context. (p. 4, italics in original)

Irvine and Armento (2001) assert that culturally responsive teachers develop meaningful personal relationships with students, allow for teachers and students to share stories about their lives during class time, reflect on their teaching, and maintain high standards and expectations for students. This may sound like effective teaching in any context, but as Ladson-Billings (1994) explains, culturally relevant teachers draw upon students' cultures as part of the regular curriculum and learning experiences. She found that "students' real-life experiences are legitimized as they become part of the 'official' curriculum" (p. 117):

Specifically, culturally relevant teaching is a pedagogy that empowers students intellectually, socially, emotionally, and politically by using cultural referents to impart knowledge, skills, and attitudes. These cultural referents are not merely vehicles for bridging or explaining the dominant culture; they are aspects of the curriculum in their own right (p. 17-18).

Culturally responsive pedagogy is especially pertinent to the urban context where students represent many cultures and worldviews and need support to navigate hegemonic practices they face in and out of school. Weiner (1999) advises new urban teachers, "Generally speaking, you can win [urban students' and parents'] confidence by making intellectual and social space in your classroom for cultural differences, acknowledging that all students bring life experiences, beliefs, and ideas that are no less worthy of examination than your own or those of classmates" (p. 55-56). Approaching urban teaching from the stance of cultural responsiveness was a major goal of the school-university partnership experience and a primary focus of the research study.

Theoretical Framework

A primary assumption of the research reported here is that context influences learning. Donnell and Stairs (2010) assert that “urban teacher learning is not represented by discrete pieces of knowledge but by teachers’ grappling with professional decisions that take into account their knowledge, skills, commitments, and dispositions while situated within their social context” (p. 192). Therefore, this research draws on situative and sociocultural perspectives of learning.

The situative perspective theorizes one’s learning as dependent upon social, cultural, historical, and institutional contexts, not solely on one’s individual cognitive processes independent of context (Resnick, 1991; Wertsch, 1991). Similarly, the sociocultural perspective emphasizes the influence of culture (broadly defined) on learning, as well as the social nature of learning (Tracey & Morrow, 2006). When applying situated and sociocultural perspectives in this research study, learning was viewed as an active process of constructing meaning and connecting new information with known information, a view of learning drawn from cognitive psychology.

Putnam and Borko (2000) argue that the situative perspective has important implications for research on inservice and preservice teacher learning: “The physical and social contexts in which an activity takes place are an integral part of the learning that takes place within it” (p. 4). They suggest that close partnerships between schools and universities offer one possibility for designing meaningful situated learning experiences for teachers “that can be difficult to accomplish in either setting alone” (p. 7). More research is necessary to understand how situated learning communities like SUPs and PDSs influence learning.

Feiman-Nemser (2008) notes the usefulness of sociocultural theories when studying teacher learning:

Socio-cultural theories are particularly useful in longitudinal studies of learning to teach because they focus on how the various settings in which teachers learn—university courses, student teaching, schools and classrooms, mentoring relationships—enable and constrain their adoption and use of new knowledge and practices and their ongoing learning. (p. 700)

Though the research study reported here was only one year in length, applying situative and sociocultural theories to data analysis allowed for attention to how the context enabled or constrained teacher learning and practice.

METHODOLOGY

The study explored the following questions: What do preservice teachers learn in an integrated course and field experience in an urban school-university partnership? How does preservice teachers’ learning inform their practice with urban high school students? Collective, interpretive case study methodology was employed (Stake, 1995, 2000).

Participants

Over the course of one school year, two cohorts of predominantly White, middle-class, undergraduate preservice teachers participated in this study at a predominantly Black and Latino high school in a major metropolitan area. The fall cohort included 33 participants, and the spring cohort included 22 participants. This study aimed to understand each individual participant's learning and practice as well as the learning and practice of the 55 preservice teachers as a whole. Therefore, the unit of analysis began at the individual level and extended to the entire group of participants who completed the experience over one academic year.

Table 1: *Demographics of Participants*

Race	White	Black	Asian	Latino
	48	3	3	1
Gender	Women	Men		
	34	21		
Year in College	Sophomores	Juniors		
	48	7		

Note: n = 55

The participants were randomly assigned partners from the same content area for their work in classrooms. Participants were not required to co-teach with their partners, but they were encouraged to do so. Partners worked with one cooperating teacher for two periods and a different cooperating teacher for the third period to allow for a variety of experiences with mentors, students, and sections of courses (e.g. regular education, special education, sheltered English immersion).

Setting

The research was conducted at a comprehensive high school of 1,200 students in a large northeastern U.S. city. The high school has a long-standing, formal partnership with the research university that the study's participants were attending. The semester-long, introductory teacher education experience for the participants incorporated required university coursework and fieldwork at the high school. At the time of this study, the student body of 1,200 was 46% Black or African American, 40% Latino, 8% White, and 6% Asian. About half of the students were English language learners, 20% received special education services, and 75% received free or reduced lunch. The school ran on semesters and four blocks per day with an 80-minute block schedule for all classes. (Table 2) With two course meetings after school hours before beginning fieldwork and 10-12 weeks of integrated coursework and fieldwork, participants spent 80-90 hours on site over the course of a semester.

Table 2: *Typical Schedule for Study Participant*

Time Periods	Activities
8:00-9:30 a.m.	University coursework led by professor; Brief meetings with field experience supervisors (High school's Block A)
9:30-10:25 a.m.	Work in classrooms, Block B (shortened block for participants due to university course meeting)
10:30-11:50 a.m.	Work in classrooms, Block C
11:55-12:20 p.m.	Lunch with professor, field experience supervisors, and/or cooperating teachers
12:25-1:45 p.m.	Work in classrooms, Block D
1:45-2:15 p.m.	Meet with cooperating teachers and/or field experience supervisors
2:15-3:30 p.m.	University coursework led by professor and co-instructor (cooperating teacher from the high school)

Data Collection and Analysis

A variety of qualitative data sources were gathered and analyzed for the study. Data sources for the two cohorts of preservice teachers included 52 matched sets of open-ended pre- and post-surveys, over 2,000 pages of coursework assignments and field experience reflections, 14 lesson observations with 23 participants², 14 interviews with 23 participants, and over 200 pages of artifacts.

Open-ended surveys were administered at the beginning and end of each semester to understand participants' prior school experiences, plans for the future, and background knowledge about course topics. Five additional selected-response questions were included on the post-survey to gather further information about perceptions of the school-university partnership teacher education experience. Coursework assignments and field experience reflections were collected to capture each participant's growth over the semester. Lesson observations of solo- and co-taught lessons provided evidence about application of participants' learning; the participants selected for observation were purposively sampled in order to observe both solo- and co-taught lessons across all of the content areas. Post-observation, semi-structured interviews

² These numbers reflect the fact that some of the 14 observed lessons were solo-taught and others were co-taught.

provided further evidence about learning and practice. Finally, relevant artifacts that were collected included course syllabi; instructor's lesson plans, handouts, and field notes; and other published materials about the teacher education experience, such as the field experience handbook.

Procedures for data analysis were grounded in Miles and Huberman's (1994) framework for qualitative data analysis: data reduction, data display, and conclusion drawing/verification. Data were read three different ways: 1) chronologically as items were collected, 2) by data source, and 3) by participant. After the first reading (chronologically) a start of list of codes was created inductively, including both descriptive and interpretive codes. After a second reading (by source) pattern codes were identified, which made trends in the data more evident, especially after the third reading (by participant). Memoing and displaying data in matrices were helpful in making sense of the data. As data were synthesized into findings across cases, confirming and disconfirming cases were sought related to each finding.

RESULTS

Analysis of multiple data sources suggests preservice teachers clearly articulated their learning about culturally responsive pedagogy, but they struggled to apply their learning in practice with high school students. The pre- and post-surveys and lesson observations most informed these findings.

Learning About Culturally Responsive Pedagogy

As reported on pre-surveys at the beginning of the semester, most participants claimed that teachers follow their passion, enjoyment, and interest in secondary curriculum and instruction, revealing that most participants lacked prior knowledge about the professional nature of planning curriculum and instruction for urban schools. Though a few participants mentioned taking students' interests into consideration, none mentioned incorporating knowledge about students' cultures into lesson planning. Participants located the teacher at the center of instructional decision making, assuming that the teacher's subject matter interests would make the content interesting for his or her students. A few students recognized that the curriculum may be prescriptive, citing either district textbooks or standardized test topics as determinants of what and how content is taught in classrooms. However, most stated that the teacher's passion for the content was the critical factor in decisions about teaching and learning.

This perspective, which centers the teacher's content knowledge and interests in planning curriculum and instruction rather than the students', is not supported by the theories of culturally responsive pedagogy. Strong content knowledge is important for effective teaching, but culturally responsive teachers "believe that knowledge is continuously re-created, recycled, and shared by teachers and students alike" (Ladson-Billings, 1994, p. 25). The semester-long, school-university partnership experience was designed to convey this view of knowledge, and evidence suggests that participants did learn about the importance of culture in curriculum and instruction.

By the end of the urban school-university partnership experience, participants de-centered the teacher and centered the students in instructional decisions. This excerpt typifies post-survey responses:

There is a curriculum that [teachers] must follow, but they can also gear the teaching towards the students they have in their classrooms. The students are of greatest importance in deciding how to teach the material. (Participant, Spring Cohort).

Privileging the students in curricular and instructional decisions was a clear shift for most participants, and attention to culturally responsive pedagogy is an important aspect of privileging students' voices in urban schools. One student revealed attention to culture on a post-survey response:

Cultural diversity in students impacts the way teachers teach material. Teachers need to be aware of the different cultures present so they can establish methods that are appealing and understandable to everyone. Especially if there are ELL/ESL students in a class, the teacher must take note of it and realize that they may struggle learning particular things due to lack of fluency in the language. Teachers must adapt to these differences to ensure the education of everyone in the class. (Participant, Fall Cohort)

This response, typical of post-survey responses, is quite different from the responses participants noted on pre-surveys. What most participants learned throughout their urban school-university partnership experience is that culture matters in teaching. They knew that culturally responsive pedagogy would enhance teaching and learning in their school context, and they were able to articulate this understanding by the end of the semester.

The Struggle to Enact Culturally Responsive Pedagogy

Observations of 23 participants teaching 14 lessons revealed that, although they clearly articulated an understanding of culturally responsive pedagogy, participants struggled to apply their learning in practice with urban students. In analyzing how they applied their learning, attention was paid to evidence of CRP features described earlier in this article (e.g. drawing upon students' cultures in curriculum and instruction, sharing personal lives, holding students to high academic standards). Out of 14 lessons, three lessons applied CRP consistently and well for an entire 80 minute lesson, five lessons applied some aspects of CRP with more traditional instruction, and six lessons did not apply any aspects of CRP. It should be noted that nearly all of the lessons were well delivered by the participants and well received by the high school students and the cooperating teachers, including the lessons that did not show evidence of CRP. However, the larger point is that participants' articulated an understanding of the importance of culturally responsive pedagogy, yet did not translate this learning into practice. Table 3 summarizes the data.

Table 3: *Participants' Application of Learning about CRP*

Application of CRP	Regular Education	Special Education	Sheltered English	Honors
Consistent	3 (3)			1
Inconsistent	3 (2)		1	
No Evidence	3 (2)	3 (2)		

Note: Number in parentheses indicates # of co-taught lessons in that category.

The three lessons that consistently applied culturally responsive pedagogy held students to high academic standards while drawing upon their interests and cultures as part of the learning process. All three of these lessons were co-taught in regular education classrooms. Preservice teachers in this group included five White women and one Black woman.

Five lessons showed evidence of drawing upon students' interests and cultures as part of the instructional plan, though inconsistent in application. Of these five lessons, three were in regular education classrooms (two co-taught and one solo-taught), one was in an honors classroom (solo-taught), and one was in a sheltered English immersion classroom of beginning English language learners (solo-taught). Preservice teachers in this group included two White women, two White men, one Black woman, and one Asian American man.

Six lessons showed no evidence of culturally responsive pedagogy in planning or delivering instruction. Of these six lessons, three were in regular education classrooms (two co-taught and one solo-taught) and three were in special education classrooms (two co-taught and one solo-taught). Preservice teachers in this group included five White women, four White men, and one Ethiopian American woman.

Two questions to consider when looking across these data include: 1) What kinds of classes received what kinds of instruction, and why? and 2) Who was able to apply their learning about culturally responsive pedagogy, and why? The three lessons that best exemplified CRP consistently throughout an entire lesson were all co-taught in regular education classrooms. One explanation for this is that co-teaching provided these participants the confidence to plan culturally responsive lessons with the high school students' needs in mind rather than focusing on their own passions, interests, and familiarity with topics. However, there were two co-taught lessons that inconsistently applied culturally responsive pedagogy and four that did not show evidence of applying their learning at all. This signals that co-teaching may not have been a factor in enacting CRP. The classroom context may have been more important.

Lessons solo- or co-taught in the regular classes, honors classes, and the sheltered English immersion class revealed evidence of CRP, yet the special education classes observed did not. This may be related to the individual participants simply not being able to translate what they

learned into practice with their students, or holding beliefs about how special education classes should be taught that do not include cultural responsiveness. It may be that the special education teachers allowed these participants less voice in instructional decision making and, therefore, their cooperating teachers influenced the content of their lessons. It is disconcerting that the special education students were not afforded opportunities to experience CRP in the lessons observed.

In considering which participants were able to implement CRP, three of the four student teachers of color who were observed teaching did, consistently or inconsistently, apply culturally responsive pedagogy. Of the lessons that did not apply CRP, one was taught by a recent Ethiopian immigrant, who may not personally relate to the U.S. legacy of minority struggles, and the rest were taught by White preservice teachers. The cultural backgrounds of the students of color, African American and Asian American, may have had an influence on deciding that culturally responsive pedagogy presented an important and valid way of approaching instruction in an urban high school. However, five of the six preservice teachers who consistently applied CRP were White. Like the co-teaching factor noted above, the cultural background of the preservice teachers cannot fully explain why or how culturally responsive pedagogy was enacted. It may be that certain aspects of CRP are more easily enacted by new teachers, such as developing relationships with students and sharing personal stories during class versus drawing on students' cultures as part of the regular curriculum, or some new teachers may simply be more developmentally ready to enact new learning.

DISCUSSION AND IMPLICATIONS

In this age of accountability with a persistent focus on outcomes, it is imperative that research is conducted examining the link between preservice teachers' learning and their practice. This study makes a contribution to the teacher education research by providing an in-depth look at learning as an outcome for preservice teachers in one school-university partnership. If universities are committed to recruiting and preparing highly qualified urban teachers, this study confirms that important preservice teacher learning can take place in urban school-university partnerships, especially if the teacher education experiences make explicit applicable theories, such as culturally responsive pedagogy. Many participants struggled to translate learning into practice, but some were able to apply their learning for all or part of their lessons, and these preservice teachers showed promise as effective urban educators. This was an introductory teacher education experience in an undergraduate teacher education program. With more coursework and fieldwork in the urban context, it is plausible that these participants would continue to develop their abilities to translate learning into practice.

The school-university partnership highlighted in this study provides a continuum model of teacher preparation where, in addition to the 22-35 early field experience student teachers each semester, there are often more advanced early field experience students and full-time student teachers in the same classrooms as the beginning student teachers. Inquiry groups of university

faculty, inservice teachers, and preservice teachers meet weekly during common planning time to discuss promising practices and share student work as a basis for improving instruction. Due to the numerous opportunities for learning in the SUP, it is likely that beginning teachers in this partnership high school will be able to enact culturally responsive pedagogy with more practice and continued support from the university and school-based professionals at the school site. It is necessary to conduct follow-up studies charting the participants' progress as they become seasoned teachers.

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Mathematics Teaching with the Stars

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Abstract

The mathematics instructional approaches of effective elementary teachers in urban high-poverty schools were investigated. Approximately 99 urban elementary teachers were administered the Star Teacher Selection Interview; a total of 31 were identified as star teachers. These teachers were then administered the Instructional Practices Assessment to identify their mathematical instructional practices and the degree to which they implemented these practices. The findings indicated that the star teachers are using a variety of instructional approaches that are culturally relevant and aligned with the NCTM's Principles and Standards for School Mathematics. The highest mean ratings were associated with principles and practices related to equity and strong adherence to curriculum standards infused with personal creativity.

INTRODUCTION

Realizing that traditional approaches to teaching mathematics which emphasize procedural knowledge and memorization of algorithms have fallen short in promoting higher-level mathematics achievement among all students, national efforts have been made to transform mathematics classrooms into engaging learning communities where students participate in inquiry-driven instruction that highlights conceptual understandings of ideas (Hiebert, 2003; Manouchehri, 2004; National Council of Teachers of Mathematics, 2007, 2000). The National Council of Teachers of Mathematics' (NCTM) landmark resource document Principles and Standards for School Mathematics (2000) represents the new vision of what defines a rigorous, high-quality, and ambitious mathematics learning environment. Communicated within this resource guide are six principles--Equity, Teaching, Learning, Curriculum, Assessment, and Technology--that depict specific elements that are imperative for a strong mathematics program. When taken together, these principles provide a framework for mathematics educators to design curriculum and pedagogy so that all students have opportunities to learn important mathematics with conceptual understandings, procedural fluency, and problem solving skills (Hiebert, 2003; NCTM, 2000; U.S. Department of Education, 2008).

Although the NCTM articulates an ambitious vision, actual implementation continues to elude many classrooms, especially those in urban high-poverty school districts (Acker, 1999;

Berry, 2003; NCTM, 1999; Oakes, Franke, Hunter Quartz, & Rogers, 2002). Data from the National Assessment of Educational Progress suggested that the pedagogy of urban teachers was not consistent with the recommendations set forth by the NCTM (Lubienski, 2001). As a result, there continues to be

...large, persistent disparities in mathematic achievement related to race and income. These disparities are not only devastating for individuals and families, but also project poorly for the nation's future, given the youthfulness and high growth rates of the largest minority populations (U.S. Department of Education, 2008, p. 5).

It is well documented that effective teachers can improve the mathematical achievement of urban students (Berry, 2003; Darling-Hammond & Skyes, 1999; Ladson-Billings, 2002, 1995; Sanders & Rivers, 1996; U.S. Department of Education, 2008). Sanders and Rivers' (1996) study investigated the cumulative and residual effects of teacher quality and mathematics achievement. They found that significant gains in achievement levels were made by students when placed with effective teachers for three consecutive years. Moreover, the U.S. Department of Education (2008) reported that:

When teachers are ranked according to their ability to produce student achievement gains, there is a 10 percentile point difference across the course of a school year between achievement gains of students of top-quartile teachers versus bottom-quartile teachers (p. 35).

However, the literature shows that defining teacher quality is controversial and differs among scholars and professional organizations (Franke, Kazemi, & Battey, 2007; McKinney, Fuller, Hancock, & Audette, 2006). Because discrepancies in the mathematics achievement levels of students based on ethnic groups, learning abilities, and socioeconomic status continue to emerge in state and national assessments, it is feasible to explore the mathematics instructional practices of teachers who are effective with urban populations. One perspective of effective urban teachers is Haberman's (1995) identification of star teachers.

Star teachers are outstandingly successful: their students score higher on standardized tests; parents and children think they are great; principals rate them highly; other teachers regard them as outstanding; central office supervisors consider them successful; cooperating universities regard them as superior; and they evaluate themselves as outstanding teachers (p. 1).

He (1995) further contends that "Star teachers conceive that their primary goal is turning kids on to learning - i.e., engaging them into becoming independent learners" (p. 15). This may be particularly challenging in the area of mathematics where many teachers continue to rely on memorization of procedural knowledge (Hiebert, 2003, 1986; Lubienski, McGraw, & Strutchens, 2004).

There is limited sound research focusing on what effective mathematics teachers actually do to produce significant gains in student achievement (U.S. Department of Education, 2008). Examining this issue through the perspective of star teachers will contribute to the limited knowledge base that focuses specifically on the identification of the skills and instructional practices of effective mathematics teachers. Findings from this study can also provide urban elementary teachers information about best practices for teaching mathematics to diverse students in poverty, as well as how to respond to the reform efforts set forth by the NCTM (2000). The following research questions were examined:

What are the instructional practices used by star elementary inservice teachers in urban high-poverty schools?

To what extent are the identified instructional practices used by star elementary inservice teachers in urban high-poverty schools?

Principles and Standards for School Mathematics

Principles and Standards for School Mathematics (PSSM) outlines a new vision for the teaching and learning of mathematics; its intent is to provide comprehensive goals for the improvement of mathematics instructional programs, including the development of curricula, assessments, and instructional materials (NCTM, 2000). Six principles are presented, and a description of the underlying assumptions and values from which each of the principles originated is provided. For example, grounded within the teaching principle is the belief that effective mathematics instruction requires teachers to know and understand the content material, expect their students to be capable learners, and incorporate pedagogical strategies that support a student centered learning environment (NCTM, 2000).

According to the vision for school mathematics articulated in *Principles and Standards*, teachers need to change what is taught and how it is taught. NCTM asserts that teachers must implement learning activities that are worthwhile and engage the students in mathematical thinking and learning. Responding to each of the principles requires teachers to consider culturally relevant pedagogy specific to the mathematics classroom, and that doing so bridges the vision of the PSSM to the learning needs of urban high-poverty students.

Culturally Responsive Mathematics Teaching

Grounded in critical race theory (Ladson-Billings, 1998, 1995; Tate, 1997, 1995, 1994) culturally responsive teaching draws on the cultural backgrounds, experiences and learning, and performance profiles of diverse populations in order to make learning more relevant, meaningful, and effective (Gay, 2000). Ladson-Billings (1995) characterized its foundation as high academic standards and success, cultural competence, and the ability to challenge social order and justice. Nurturing meaningful relationships with students, developing learning communities, scaffolding instruction, extending students' thinking, and believing in the capabilities of all students further

accentuates the theoretical tenets (Ladson-Billings, 1995). Wagner, Cabral-Roy, Ecatoiu, & Rousseau (2000) argued that “If more equitable mathematics achievement is a serious goal of educators, then mathematics instruction must begin to reflect the pedagogies that meaningfully integrate culture into the classroom” (p. 107).

Although there is limited research that examines culture as a means for mathematical learning (Leonard, 2008), several studies have reported the significance of addressing culturally responsive pedagogy during instruction. For example, urban and rural sixth graders served as the subjects for Lipka & Adams’ study (as cited in Leonard, 2008) of the effectiveness of a culturally responsive mathematics unit. Results showed significantly better mastery of the mathematical material when instruction was culturally-based.

Several specific teaching approaches have been identified that address urban student’s culture and preferences for learning, such as affective interactions, using students’ life experiences in instruction, cooperative learning opportunities, active learning, and scaffolding (Leonard, 2008). Malloy (1997) asserts that no new forms of pedagogy need to be developed for urban high-poverty students; instead, existing pedagogy just needs to attend to the cultural and cognitive development of students.

Attending to culturally responsive pedagogy as a means to improve the mathematics achievement of urban students relies on ideology of teachers who contextualize teaching in regards to focusing on the needs and cultural experiences of their students. Star teachers as identified by Haberman (2005, 1995) have the necessary beliefs and expectations to do so. Haberman (2005, 1995) distinguished the belief system and functions carried out by star teachers with those of teachers who fail urban students, or leave urban teaching all together. The distinctive ideology and knowledge base of star teachers are aligned with cultural understandings and responsive pedagogy, and include such functions as: persistence, approach to at-risk students, and gentle teaching in a violent society. Star teachers realize that urban students are faced with multiple challenges, many of which they bring to the classroom. However, they deeply believe in the capabilities of all students and provide them with a variety of experiences so they can realize success. This internal desire and commitment is what drives these teachers to make a difference in the lives of students. They realize that the handicapping conditions many students face don’t define their futures.

In the current study we addressed the instructional practices and behaviors of teachers identified to be effective mathematics teachers in urban high-poverty environments. More specifically, we used Haberman’s (2004) *Star Selection Interview* to identify these teachers. In the next phase of the study, we administered a questionnaire developed to align with the NCTM’s Principles to determine the extent to which these star teachers employed the instructional practices. One potential limitation of this study is our reliance on teacher self-report. As is true with all self-reported data, we cannot rule out the possibility that teacher responses are invalid or subject to social desirability. However, in the current study teacher

candor was enhanced by assuring confidentiality to teachers, and only about a third of the teacher participants were identified as star teachers. Furthermore, a recent study investigated the validity of teacher self-report in the context of school restructuring. The findings indicated that teacher perceptions of their pedagogical practices were significantly correlated with observation results obtained by objective observers.

METHODOLOGY

Sample and Procedures

The population for this study consisted of approximately 99 urban high-poverty elementary teachers attending local state, regional, or national conferences affiliated with the National Council of Teachers of Mathematics. For the intent of this investigation, urban high-poverty schools were defined as those schools where at least 50% of the students qualify for free or reduced lunch prices. Purposeful sampling was employed; the *Star Teacher Selection Interview* was administered to each of the 99 participants, with 31 identified as star teachers. These identified star teachers served as the subjects for this investigation, and completed the *Instructional Practices Assessment*. Demographic information indicated there were nine Caucasian teachers, 21 African American teachers, and one Hispanic teacher. Subjects' ages ranged from 23-54; 24 were female and 7 were males. Experience levels varied from 7-32 years.

Star Teacher Selection Interview

The Star Teacher Selection Interview predicts a teacher's ability to successfully relate to and work with diverse children in poverty and their staying power (Haberman, 2004). It measures seven of the functions that discriminate completely between stars, and those teachers most likely to quit or not meet success with urban populations. The seven functions assessed include: (a) Persistence, (b) Response to Authority, (c) Application of Generalizations, (d) Approach to At-risk Students, (e) Personal/Professional Orientation, (f) Burnout, and (g) Fallibility. These seven mid-range functions are divided into two subcategories, and yield fourteen characteristics, thus allowing the interviewer to develop a profile of the teacher's predispositions and ideology (Haberman, 2005, 2004, 1995). Participating candidates are ranked and categorized (Star, High, Average, Failure) based on their responses to 14 classroom teaching scenarios (Haberman, 2005, 2004, 1995).

The instrument has been periodically tested to validate its level of discrimination. There is a predictive reliability of $r = .93$ for those being re-interviewed (Haberman, 2003). Additionally, there are no differences in the reliability of the instrument based on respondent's age, sex, or ethnicity.

Instructional Practices Assessment

A survey instrument which identified 34 mathematics instructional practices was constructed and based on the work of Cathcart, Pothier, Vance, and Bezuk (2006), Malloy, 1997; Van De Walle (2006) and the NCTM (2000). As a means to further validate the survey instrument, a think-aloud, debriefing interview was conducted with three public school math specialists. They agreed that the identified indicators embodied the instructional practices for teaching mathematics. In addition, the items were independently categorized by the research team into the six NCTM principles. During this process, it was discovered that instructional practices characterizing the *Teaching and Learning Principles* were inextricably intertwined and the categories were collapsed. Although some of the other items were related to more than one principal, they were more clearly subsumed under a principle as judged by content area experts. The categorization process reduced the original 43 items to 34 to better align with NCTM principles and minimize overlap among items and principles.

RESULTS

To provide an overall perspective of the extent to which the star teachers implemented instructional practices by principle, mean ratings across all items per scale were calculated. Table 1 presents the overall means for items comprising each of the principles. Given the fact that these were star teachers chosen for their effective instructional practices in mathematics, it is not surprising that the overall mean values are high. Nevertheless, the highest mean ratings were associated with the Equity and Curriculum scales.

Table 1: *Mean Rating by Category of Mathematical Instructional Principles*

Category	Number of Items	Average Rating
Equity	5	4.82
Teaching/Learning	17	4.22
Curriculum	2	4.49
Assessment	7	4.24
Technology	4	4.24

Note: n = 31

Although we observed some variation in the overall mean scores for the principles, patterns of findings for items within categories better illuminates the specific practices star teachers implement most frequently. We computed means, standard deviations, and the percentage by response option (i.e., Never to Very Frequently) for items within each principle.

The Equity Principle

The Equity Principle is grounded in the ideology that all students, regardless of gender, socioeconomic status, and special needs are capable of learning mathematics, and deserve every opportunity to do so (NCTM, 2000). It is apparent that the star teachers involved in this investigation are addressing the Equity Principle. For example, the self reported practices indicated that the subjects are demonstrating those behaviors that promote high-expectations. The Equity Principle also calls for meeting the diverse mathematical needs among students, and the vast majority of the subjects are doing this by differentiating instruction. Table 2 provides the descriptive statistics for items indicative of the Equity Principle.

Table 2: *Descriptive Statistics for Equity Items*

Instructional Practices/Behaviors	Mean	SD	Never	Seldom	Sometimes	Frequently	Very Frequently
Higher level questioning	4.97	.17	0	0	0	3%	97%
Probing and prompting clues	4.97	.17	0	0	0	3%	97%
Reinforcement techniques	4.94	.24	0	0	0	6%	94%
Teacher expectations-student achievement behaviors (TESA)	4.94	.24	0	0	0	6%	94%
Differentiation of instruction	4.30	1.29	0	0	6%	35%	58%

Note: n = 31

The Curriculum Principle

According to the Curriculum Principle, mathematical ideas should be integrated and linked (NCTM, 2000). The subjects were evenly split on adding personal creativity to the curriculum and adhering strictly to the curriculum guide. It is plausible to assume that school district guidelines may either promote or inhibit teachers' personal freedom with the curriculum (see Table 3).

Table 3: *Descriptive Statistics for Curriculum Items*

Instructional Practices/Behaviors	Mean	SD	Never	Seldom	Sometimes	Frequently	Very Frequently
Strictly follows curriculum and pacing guide	4.49	.62	0	0	6%	39%	55%
Adds personal creativity to curriculum	4.49	.62	0	0	6%	39%	55%

Note: n = 31

The Teaching and Learning Principles

The Teaching Principle recognizes that teaching mathematics is a complex endeavor and that the teacher plays the central role in promoting mathematical literacy and fluency (NCTM, 2000). The Learning Principle emphasizes conceptual understandings of the different mathematical ideas and process standards, such as reasoning and problem solving (NCTM, 2000). The findings suggest that the subjects are using both traditional and alternative approaches to teaching mathematics (see Table 4). For example, the results indicated that the star teachers are using hands-on and problem based activities and cooperative learning groups. In regards to the more traditional approaches, it appears that star teachers may be complimenting this type of instruction with the use of manipulatives and demonstrations and modeling.

Table 4: *Descriptive Statistics for Teaching/ Learning Items*

Instructional Practices/Behaviors	Mean	SD	Never	Seldom	Sometimes	Frequently	Very Frequently
Teacher directed instruction	4.90	.30	0	0	0	10%	90%
Connects new to prior learning	4.87	.34	0	0	0	13%	87%
Demonstrations and modeling	4.77	.43	0	0	0	23%	77%
Analyzes error patterns	4.59	.50	0	0	10%	26%	65%
Connects to real world experiences	4.58	.50	0	0	0	42%	58%
Hands-on learning	4.55	.46	0	0	3%	39%	58%

activities							
Cooperative learning groups	4.51	.68	0	0	10%	29%	61%
Critical discourse	4.42	.72	0	0	13%	32%	55%
Utilizes manipulatives	4.35	.66	0	0	10%	45%	45%
Modality based	4.35	.71	0	0	13%	39%	48%
Problem-based learning	4.23	.76	0	0	19%	39%	42%
Writing	4.13	.85	0	0	29%	29%	29%
Interdisciplinary instruction	3.97	.79	0	0	32%	39%	29%
Memorization of algorithms, procedures, rules	3.47	1.31	10%	16%	6%	48%	19%
Drill and practice	3.44	1.14	3%	19%	32%	23%	23%
Social interactions	3.30	1.24	0	23%	35%	16%	23%
Lecture	3.28	.89	0	16%	42%	35%	6%

Note: n = 31

The Assessment Principle

According to the NCTM, (2000), assessment should be viewed as a powerful resource in making instructional decisions. It appears that the subjects are moving beyond the traditional methods of testing, and are including more alternative and formative approaches to their assessment practices such as authentic assessments, portfolios, and student self assessments. Table 5 provides the descriptive statistics for items indicative of the Assessment Principle.

Table 5: Descriptive Statistics for Assessment Items

Instructional Practices/Behaviors	Mean	SD	Never	Seldom	Sometimes	Frequently	Very Frequently
Teacher made tests	4.91	.38	0	0	3%	3%	94%
Rubrics	4.87	.34	0	0	0	13%	87%
Authentic	4.45	.68	0	0	10%	35%	55%

assessments

Student self-assessment	4.39	.80	0	0	19%	23%	58%
Interviews and conferences	4.07	.89	0	0	35%	23%	42%
Student reflection	3.72	.86	0	3%	45%	29%	23%
Portfolios	3.29	.78	0	16%	42%	39%	3%

Note: n = 31

The Technology Principle

Technology is now considered an essential component in learning mathematics well, and state and local curriculums encourage its use (NCTM, 2000). It can be seen that star teachers are infusing technology within their mathematics curriculum by utilizing websites, software programs, and virtual manipulatives (see Table 6).

Table 6: *Descriptive Statistics for Technology Items*

Instructional Practices/Behaviors	Mean	SD	Never	Seldom	Sometimes	Frequently	Very Frequently
Software	4.65	.55	0	0	3%	29%	68%
Calculators	4.52	.77	0	0	16%	16%	68%
Websites	4.42	.68	0	0	10%	38%	52%
National Library of Virtual Manipulatives	3.36	.70	0	6%	48%	45%	0

Note: n = 31

DISCUSSION AND IMPLICATIONS

This study focused on 31 star teacher's instructional practices for teaching mathematics. While the literature reports that many teachers in urban high-poverty schools are using more traditional approaches to teaching mathematics, this is not the case for star teachers. As seen by the results, a variety of approaches and practices that are culturally relevant and support NCTM's principles (2000) are being utilized. It's worth calling attention to some of the practices that are utilized regularly, as well as the approaches that appear to be implemented less frequently, and

their implications for teaching mathematics in high-poverty elementary schools. A high percentage of teachers are supporting the Equity and Curriculum Principles by asking higher level questions, providing probing and prompting clues, demonstrating reinforcement techniques, and by adding personal creativity to the curriculum. In regards to the Teaching/Learning Principle, star teachers are differentiating instruction, and making use of cooperative groups, manipulatives, hands-on, and problem-based learning activities, all culturally responsive practices. The results also revealed that these teachers are not excluding the more traditional approaches. Although many teachers may implement an either- or method, existing research does not support an all-encompassing approach for the teaching of mathematics (U.S. Department of Education, 2008). It appears that the star teachers may be trying to address a balance of each.

It can also be seen that the star teachers are implementing more alternative and formative approaches to assessment, such as interviews and conferences, authentic assessments, student assessments and portfolios. Again, this is of particular interest since these types of assessment approaches focus on individual students' mathematical achievements and diagnosis (Cathcart, Pothier, Vance, & Bezuk, 2006; Van de Walle, 2006). The participating teachers are not using student reflections and portfolios as frequently as the other identified assessments. Both approaches hold merit in assisting students' understandings of mathematical ideas (Cathcart, Pothier, Vance, & Bezuk, 2006; Van de Walle, 2006). One plausible explanation is that the star teachers are infusing these approaches within student self-assessments or authentic assessments. Further justification from the star teachers is needed.

Star teachers are undoubtedly demonstrating those practices supported by the NCTM (2000). Demonstrating and believing in best practices is at the core of star teachers. Haberman (2005) explains:

The way stars think cannot be separated from their observable behaviors. Their actions reflect their ideology and vice versa. This ideology includes their beliefs about the role of the school in serving diverse students in poverty, the nature of learning and the nature of teaching. . . . To do what stars do requires sharing the beliefs and values they use as guidelines for making the countless decisions they make daily. To try to imitate what stars do, without believing as they do, leads to merely going through the motions of teaching and having little influence on students' learning (p. 131).

Clearly, star teachers can play an instrumental role in improving the mathematics education program within individual schools and districts since they are implementing the ideals set forth by the NCTM (NCTM, 2007). For example, these teachers can serve as teacher leaders or mathematics specialists and assist other teachers through collective planning, coaching, and modeling best practices. Cavanagh (2008) reported that the potential benefits of using mathematics specialists in elementary schools are great. He further stated, "Using specialists could be a practical alternative to attempting to raise the math skills of all elementary teachers (p. 15).

School districts might explore the use of selection instruments, such as Haberman's (2005, 2004) Star Teacher Selection Interview to best identify those teachers who will not only embrace NCTM's Principles and Standards (2000), but will also be effective with urban populations. This investment also holds promise in increasing the mathematics achievement levels of all students and attracting and retaining mathematics educators.

In this study, we used star teachers as the perspective of defining effective urban teachers. Other scholars have identified additional characteristics, dispositions, and profiles of effective urban teachers as well (Baron, Rusnack, Brookhart, Burrett, Whordley, 1992; Ladson-Billings, 1994; McDermott & Rothenberg, 2000). School districts use other interpretations of defining effective teachers, such as teaching credentials, teaching awards, and administrative evaluations. Because of the different interpretations of what defines an effective urban teacher, future research is needed to identify the mathematics instructional practices from these different viewpoints. Such evidence can contribute to the knowledge base of what effective mathematics educators actually do to impact student achievement.

While this study has identified the mathematics pedagogical practices of star teachers in elementary urban high-poverty schools, many questions remain. These include (a) how individual schools or districts can utilize star teachers to significantly improve the culturally responsive pedagogical practices of all mathematics teachers, (b) how best to nurture mathematics teachers so that they develop into stars, and (c) how best to attract star teachers for the urban high-poverty mathematics classroom as pressing issues in mathematics education. Focusing on these issues can better equip urban school districts to provide all students with rich opportunities that enhance their mathematical literacy and fluency.

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