This paper describes an effort to provide prospective teachers opportunities to better understand African American male students and better focus on how they learn mathematics. Prospective teachers spent 15 hours over an eight week span mentoring and tutoring African American males without the guise of practicing teachers. Qualitative data drawn from reflective journals, culminating papers, and metaphorical illustrations were used to analyze outcomes from the project. What is most evident from the data is that prospective teachers steadfastly sought to unearth the Hidden or UnMet Potential (HUMP) possessed by their students rather than submit to being judgmental and condemnatory. Evidence provided by the participants demonstrates the promise of mechanisms that afford prospective teachers opportunities to get to know African American males and use that knowledge to inform their instruction. Thus, prospective teachers’ field experiences should be situated within a context that provides them the autonomy to adjust curriculum in a manner that authentically integrates the experiences of African American males.

Regardless of the manner in which mathematics achievement is measured, African American males are consistently placed at risk for academic failure, chronically underrepresented among high achievers, and overrepresented among underachievers (Davis, 2003; Martin, 2000). Contributing to their sub-par performance is a school mathematics curriculum that is divorced from African American students’ everyday experiences (Ladson-Billings, 1997). This curriculum is most often supplemented by a “foreign pedagogy” that fails to provide African American students with curriculum, instruction, or assessment centered on their experiences, culture, and traditions (Tate 1995; Woodson, 1933). The cumulative effects of a disengaging curriculum and a foreign pedagogy in mathematics causes many African American males to suffer the callous repercussions embedded in high stakes educational accountability systems (Sheppard, 2006).

Further complicating mathematics teaching and learning is the socially and culturally homogeneity of its teaching force. Conceivably, the majority of said teachers’ life experiences are dissimilar to those of African American male students. Ladson Billings (1997) points out “If teachers are to be more effective with African American students, they must develop a positive identification with them—to perceive them to be like them, that is, fully human and possessing enormous intellectual capacity (p.704).”

Accordingly, this paper describes an effort to address the aforementioned issues by providing prospective teachers (PT) opportunities to better understand African American male students and better focus on how they learn mathematics. Said goals are inline with National Council for the
Teachers of Mathematics (NCTM) principals of effective teaching. NCTM (1999) posits that effective teachers: should be responsive to students' prior knowledge, intellectual strengths, and personal interests; should be committed to their students as learners of mathematics and as human beings; and need to know ways to help bridge common misunderstandings students may have. Thus, the purpose of this paper is to examine the extent to which prospective teachers gained an understanding of African American males and their mathematical thinking while attempting to incorporate the principals of effective teaching endorsed by NCTM.

**Related Literature**

Davis (2003) noted that African American male school attrition results from a genuine disinterest in fulfilling their roles as conventional learners in school settings. Among the reasons Davis (2003) cites for the disengagement, alienation, and poor academic performance of African American males is that they perceive most educational activities as "feminine and irrelevant to their masculine identity and development." He also points out that teachers, impose a feminine culture on males that induce oppositional behaviors. Further, schools ignore African American males' aspirations, disrespect their ability to learn, fail to access and cultivate their many talents, and impose a restrictive range of their options. Nonetheless, Davis (2003) sees schools as critical sites for young Black males "as they make meaning of who they are, what they are supposed to do, and how others perceive them (p. 520)."

Lattimore (2005) suggests that mathematics educators listen to African American students' voices. According to Lattimore, listening to African American students helps to identify those vital teaching and learning environments that contribute to African American students succeeding in mathematics. He pointed out three chief outcomes resulting from listening to African American students' voices: 1) African American students can provide insight into teaching strategies that motivate them to learn mathematics; 2) these voices can aid mathematics educators in conceptualizing and examining the particular characteristics of effective mathematics teachers of African American students and 3) listening to African American students' voices has the propensity to add to the repertoire of methodologies pertinent to improving the mathematics education of African American students.

Regrettably, prospective teachers rarely have genuine and sustained opportunities to listen to African American males perspectives on education. One way in which prospective teachers can develop a more authentic understanding of African American males and their academic potential is through service learning. The service learning experience has been identified as a conduit in improving student comprehension, and a critical and analytical tool for increased understanding of a particular subject, population, and/or phenomenon in the corresponding classroom (Manley et al, 2006). Learn & Serve America (2006) states that the general purposes of service learning include: promoting learning
through active participation in service experiences; providing structured time for students to reflect by thinking, discussing and writing about their service experience; providing an opportunity for students to use skills and knowledge in real-life situations; extending learning beyond the classroom and into the community; and fostering a sense of caring for others.

Boyle-Baise (2005) used service learning to inspire culturally responsive teaching among pre-service teachers. She points out that teachers who practice culturally responsive teaching validate student’s life experiences; they teach to the whole child as a student, family, and community member. In the aforementioned article, Boyle-Baise found that service learning helped pre-service teacher participants gain a deeper understandings of contexts from which their students come.

Considering the aforesaid literature, it seems plausible to utilize service learning as catalyst in truncating perceived differences between African American males and PT. Thereby, improving the pedagogical practices of PT and improving the academic performance of African American males.

**Method & Data Sources**

To explore the extent to which PT gained a deeper understanding of African American males and their mathematical thinking a qualitative approach was employed. Specifically, the author employs tenets of a case study approach with data from embedded sub-cases (Yin, 2006). The participants in this project are elementary education majors enrolled in courses taught by the author. Data reported here was collected from elementary PT who mentored and tutored students in grades 1-4 at schools designated as “Title I Schools.” There were no predetermined criteria for the pairings. PT completed a minimum of 15 hours before or after school tutoring and mentoring without the guise of practicing teachers. Each PT was required to keep a reflective journal of their experiences, present their findings to the class, and complete a culminating paper detailing their experiences. In addition, approximately one month after the project concluded, PT presented metaphoric illustrations describing their experiences. A total of 42 PT participated in the project. Four of those participants are included in the data below because their experiences were exclusively with African American males.

The format of their experience mirrors that of the laboratory approach to field experiences (Phillip et al, 2007), in that PT made all instructional decisions. One other advantage of this approach as opposed to a traditional classroom field experience is that PT are less likely to endure procedural concerns (i.e. time management and classroom management) thus having more time dedicated to improving their pedagogical practices (Moore, 2006).

**Results**

Data from the participants will be presented in the form of vignettes. For the sake of this study vignettes will be defined as impressionistic shortened, narratives that provide a trenchant impression of an individual’s experience (Seidman, 1998;
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Wikipedia, 2008). It incorporates tenets of narratives in that first person accounts are given, but differ in that due to space limitations, edits were incorporated to ensure cohesiveness of statements (Seidman, 1998). The experiences of Briton, Dakota, Everglade, and Montana, all Caucasian PT, are shared below (all names are pseudonyms).

Briton. “I asked him a few questions about himself, and he told me all sorts of information. I told him that we were going to work on math together. His face and attitude completely changed. He then went to tell me that he really disliked math and always gets in trouble when he is in school. I also tried to talk to the librarian about him. She knew right away who I was talking about when I said I had a student with a few discipline problems. She let me know that I could get another student if I needed to. Obviously, everyone knew who he was and how he was hard to handle. I decided that I would take it upon myself to try and do the best I can to figure out how to reach out to him. I realized through time working with Sabine that he didn’t hate math, but had a lack of confidence in doing it. Because he liked cards, we used cards a lot to play different games. At first, we used them for division. Then, he brought up using them for multiplication and even bringing in the manipulatives and said this way, he could explain and show me how he thought of it. This has taught me that you don’t give up on your students. My experience was like climbing a slippery ladder. At first it was hard to get going without slipping down, but after determination and figuring out your student you can make it to the top.”

Dakota. “When I asked him questions about school and what he likes to do, he just had one word answers, basically shrugged his shoulders, and bit on his lips. So I did my best to automatically use some sort of manipulative or drawings. This was useful for him to work with them to make his own problems. While I made a shape he made one for me. After he worked his and told me the steps he did to get the answer I would work the one he made and I would tell him the steps I took. This gave him an opportunity to see a different way of looking at a problem. I also brought a chalk board with me that he really enjoyed using. This was what he would use to draw pictures or representations for the multiplication facts.”

Everglade. “During our first session together, Arc told me that he has seventeen biological siblings, half-siblings and step-siblings. Arc does not live with either of his biological parents; he lives with his aunt and uncle and their children. One morning he told me that he had not eaten breakfast. When I asked if he was hungry, he told me that he forgot and no one helps him get ready for school. Arc struggled with word problems and was not interested in practicing them. Arc struggled with word problems and was not interested in practicing them. He would automatically write the numbers in the order that they appeared in the problem. For example, he attempted to subtract (18 – 53) in the following problem. ‘A seal got loose in a fish tank at an aquarium. He ate 18 fish. There were 53 fish in the tank
before the seal got loose. How many fish are currently in the tank?’ Therefore, I created problems about him and his interests. Arc was very interested in solving these problems because they were about him. I realized the importance of using nontraditional approaches to solving problems”

Montana. “Cola and I were like two peas in pods. He was always so excited when he showed up for tutoring, but at times I could tell he was really tired. His mom is a bus driver, so he has to wake up very early for school. I think this was his main non-academic struggle, which could affect his academic work. Cola was very strong in reading. While reading a word problem, I had Cola circle all the numbers and any words that referred to combining or taking away. Using the information he would complete a chart that asked three important questions (What do I know? What do I need to find out? Do I add or subtract?)…… Because Cola also enjoyed music, I thought the perfect way to help him distinguish between the minute hand and the hour hand was to sing a song. Cola tapped on the table to a certain beat as I sang ‘long hand minute hand, short hand hour hand.’ After three repetitions of the song, Cola jumped right in and sang with me. Cola remembered the song every session and never confused the minute hand and the hour hand again. Cola said, ‘Sometimes I know what goes in math class, but a lot of times I am lost. Why can’t my teacher make it fun like you did?’ This was the biggest ‘wow’ moment of my teaching career thus far.”

Discussion
What is most apparent from the vignettes is that PT listened to the acute details of each student's experiences and transformed those into teachable moments. Rather than submit to being judgmental and condemnatory, PT remained persistent in hopes of unearthing the Hidden or UnMet Potential (HUMP) possessed by their students. This in turn demonstrated to the African American males in this study that their experiences matter. In a commissioned study for the Congressional Black Caucus, Toldson had similar findings. Toldson’s (2008) revealed that teachers who perceived students “as people” tend to produce the highest levels of academic achievement among African American males. Furthermore, African American male students who were identified as successful, perceived their teachers to be “respectful people who treat them like they matter and nurturing people who build up their strengths (Toldson, 2008).”

Conclusion
Finally, merging the experiences of African American males and the mathematics curriculum can be done seamlessly with meaningful, unprejudiced dialogue among those with vested interest in the advancement of African American males' academic performance. Evidence provided by the participants admittedly do not provide a panacea, but does demonstrate the promise of mechanisms that afford PT opportunities to get to know African American males and use that knowledge to inform their instruction. Thus, PT field experiences should be situated within a
context that provides them the autonomy to adjust curriculum in a manner that authentically integrates the experiences of African American males. The benefits of wide-scale replication of experiences such as those previously mentioned can be catalysts for improving the academic performance of African American males and engender relationships between African-American males and their teachers.

References


