This study investigated the relationship between urban teachers' beliefs and student outcomes, reflecting teachers' beliefs related to the beliefs in previous qualitative literature on effective teachers of African American children. A subset of participating teachers surveyed in a larger study (46 out of 244) was identified from two of the original six elementary schools. The schools served predominantly African American students from low-income families. In the larger study, teachers' beliefs about knowledge, teaching practices, and social relationships with students were collected. Standardized scores from the Iowa Tests of Basic skills were converted to z-scores for each student and used in the final hierarchical regression/correlational analyses. Data for each class were aggregated into mean achievement scores for math, reading, and language arts. Data analysis indicated that reading achievement significantly related to teachers' beliefs regarding the importance of students' cultural identity, students' individual needs, and strategies such as drill, practice, and peer learning experiences for lower-achieving students. (Contains 40 references.) (SM)
The Relationship Between Teachers' Beliefs and Student Achievement
In Two Primarily African American Urban Elementary Schools

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The Relationship Between Teachers’ Beliefs and Student Achievement

In Two Primarily African American Urban Elementary Schools

Two landmark United States Supreme Court cases have shaped the educational terrain for African American, and all other, students in this country. The first, Plessy versus Ferguson (163 U.S. 537, 538 [1896] as cited in Epstein & Walker, 1998), proclaimed separate but equal rights for African Americans as citizens of this country. This involved, originally, transportation, but rapidly spread to education. In the next 50 years it became apparent that separate was not equal, and African Americans were suffering inferior education under this law, due in large part to unequal resources. Then, in 1954, the second United States Supreme Court case, Brown versus Board of Education (347 U.S. 483 [1954] cited in Epstein & Walker, 1998), found that separate is inherently unequal, rendering segregation in public schools unconstitutional and, therefore, illegal. This decision was based on the Equal Protection Clause of the 14th Amendment, passed in 1868. The 47 years following the passage of Brown versus Board of Education (1954) have continued to be a struggle to make available excellence in educational opportunities to African American students and other students of color. Segregation still impedes efforts to improve standards of education for children of color. For example, the county of Charlotte-Mecklenburg in North Carolina is still under court order to desegregate its schools, because the U.S. 4th Circuit Court of Appeals found that, while some services were found to be equitable, others were not. Specifically, facilities, transportation, and student assignment and achievement were found to be inferior for African American students in the county. In the absence of a Court decision, however, the county is pressing ahead with its choice plan (Reid, 2001).

Kenneth B. and Mamie P. Clark’s research, published in 1947 (as cited in Banks, & Grambs, 1972), on self-image in black children was instrumental in the ruling on Brown versus Board of Education. During the era of segregation the Clark’s research indicated that black
children’s self-identity was inferior to that of normally developing white children. Black children, with regularity, labeled black dolls ugly, bad, and other negative descriptors, while they labeled white dolls pretty, nice, and other comparatively positive descriptors. Other similar findings greatly influenced the Supreme Court’s decision that separate is inherently unequal (Brown v. Board of Education, 347 U.S. 483, [1954]).

Black child development has been shown to be much more complex in an era of desegregation (Spencer, 1985). Margaret Beale Spencer explicates the complexities from a developmental, constructivist perspective. She distinguishes self-identity (self-concept) from group-identity (for example, racial identity). For example, African American preschool children in her research reported “race dissonance” in color connotations, indicating positive images associated with white and negative images associated with the color black. Spencer argued that racial dissonance did not necessarily lead to low self-concept. This was based on reports of older African American children who indicated friendship preferences with their others within their own racial group, an indication that the race dissonance identified in younger black children diminishes with age. Spencer explains this developmental process in terms of differentiation of self from others, the gradual internal organization of information from external sources as different from one’s own racial awareness and self-concept. She characterizes the change from Piaget’s preoperational to operational periods of development as an indicator of a multidimensional perspective on the development of self-identity, “encompassing racial attitudes, racial preferences, and color connotations” (p. 222). Identity development in black children, Spencer purports, is influenced by the internal constructions of self, the internal psychological structures, in relation to external socialization processes, including information about race and culture in relationship to society as a whole.
Peter Murrell (1993) writes that few mainstream teachers are prepared to understand, much less guide, students of African descent through the development of a healthy self-identity, due to the lack of experience in and knowledge of living in a duality of socialization. Murrell offers that a duality of socialization is due to contradictions set up by the contrasts in the expectations of home and school cultures, and declares that the resolution of role conflicts is “considerably more difficult and complicated for children of color” (p. 251). Shirley Brice Heath (1983) demonstrated in her 10 years of research in Appalachian communities how teachers who are not knowledgeable of this duality of socialization interfere with the successful education of poor children, particularly poor children of color. When teachers are not prepared to guide the healthy development of students of African descent, or of a descent other than that of the dominant culture (white western European), the children’s learning suffers.

Research investigating African American learning styles and culturally relevant learning environments has classified specific teaching and learning behaviors as pedagogy most suitable for African American children. The notion that African American children may learn well in an environment that is relational and personal in style, as in a familial context, is supported by studies describing successful and culturally relevant learning environments for urban African American children (Ladson-Billings, 1994; Willis, 1995). In addition, studies concerning learning styles of African American children (Boykin, 1983; Hale-Benson, 1982), and an African-centered pedagogy (Murrell, 1993; Willis, 1998) have influenced the investigation of excellence in urban education. Scholars have called on educators of urban children of color to teach more to students who come without the learning experiences from home that teachers and schools expect students to have, not less because teachers may lower their expectations for these students (Delpit, 1995). That is, Delpit (1995), Ladson-Billings (1994), and Hilliard (1993),
among others, challenge teachers to have high expectations for all children, to teach in a manner that engages all students' interests, to develop all students' critical thinking skills and comparative thought, and to ultimately support every student to excel no matter what experiences students bring to the classroom. This may include direct teaching, as well as exploratory learning; it requires attending to the specific needs of the students while teaching all of what is needed to succeed (Ayers, 2001; Delpit, 1995).

Studies that have quantified teachers' beliefs related to specific teaching practices for African American children, however, are few. Also lacking are quantitative studies designed to explain the relationship between teachers' beliefs and student outcome in an urban, primarily African American, school environment. The purpose of the larger study in which the present study is situated was to design a study that measured teachers' beliefs. The present study, therefore, was designed to explore the relationship between teachers' beliefs and student outcome. The instrument developed in the larger study measuring teaching philosophy was a questionnaire adapted from Ladson-Billings' (1994) work that reflects successful teachers' beliefs about knowledge, teaching practices, and social relationships with the children. The goals of the present study were to (a) collect the corresponding student achievement records of a subset of teachers from the larger study; and (b) examine the relationship between student achievements, averaged within each classroom, and factors emerging from the measure of teachers’ beliefs from the larger study, in two urban schools of primarily low-income African American students. The purpose of the present study, therefore, was to reflect teachers’ beliefs related to the beliefs in previous qualitative literature on effective teachers of African American children (Ladson-Billings, 1994); Willis, 1998; 1995) in relationship to student outcome.
Review of the literature

Research specifically investigating effective teaching of African American children has predominantly been qualitative in nature (Delpit, 1995; Ladson-Billings, 1994; Willis, 1998, 1995). Three of these studies (Ladson-Billings, 1994; Willis, 1998, 1995) documented characteristics of effective teaching through interviews and observations. Teachers in one study were identified as highly effective with urban students, primarily African American. In a second study, a school was identified as successful, and served urban, primarily African American, children. Characteristics of learning environments, including teachers' beliefs, school culture, curriculum content, classroom structure, and learning processes were documented in these two studies. In a third study, observations of classrooms serving African American children offered insights into an African-centered pedagogy. Each of these qualitative studies has contributed a better understanding of how teachers of African American children have achieved success with their students.

In one of these studies, Willis (1995) examined the characteristics of a successful African American elementary school. She concluded that teachers and staff of this particular school create an atmosphere much like an extended family in which each person is treated as an important member, and is held accountable for her contribution to the success of all. The success of all depends on the success of individuals. In her more recent research, Willis (1998) observed and classified teaching and learning processes of African American classrooms into a structured African-centered pedagogical model. Through a qualitative analysis she found that some of the characteristics relate to the "family" theme. For instance, she observed that teachers promoted affection as a discipline style, focused on family relationships and interactions, promoted communal and cooperative values, and promoted moral development within this familial context.
The framework created from Willis’ (1995, 1998) observations gives a foundation for thinking of creating excellence in classrooms for African American children. Within this framework, there is congruence between home and school expectations and behavioral processes. Boykin (1983) also asserts that a relational learning style within a community of learners is dominant in an African-centered learning environment. These observations help build a sense of using cultural identity to guide classroom activities. It is critical to examine the function of cultural and racial identity in building a solid, supportive learning environment for African American children and other children of color. Given the history of racism in this country, the development of a healthy self-identity for African American children is going to be, necessarily, influenced by racial and cultural identity.

Through interviews as a part of her qualitative design, Ladson-Billings (1994) examined teachers' beliefs about knowledge, teaching, and relationships with students in and beyond the classroom. In addition to personal interviews, she used classroom observation, and formulated clusters of behaviors that exhibited what she called “culturally relevant” teaching practices. She concluded that these teachers revealed common characteristics that are very important for consideration when thinking about pedagogy for urban African American children. One way to think about teachers’ beliefs regarding learning environments is to use this framework of cultural relevance. Ladson-Billings states, “Teachers who use culturally relevant methods can be identified by the way they see themselves and others” (p. 25). She identifies beliefs teachers in her study possessed, and further describes traits that these teachers exhibited—that is, teachers’ beliefs about teaching, knowledge, and how social relationships are structured in and beyond the classroom.
In relationship to teachers' beliefs about teaching, participants in Ladson-Billings' (1994) study were reported to view teaching as an art rather than a technical skill. They reported beliefs that all students can succeed, rather than some will inevitably fail. They saw themselves as a part of the community, and teaching as a way to give back to the community. Teachers in Ladson-Billings' study reported that they helped students make connections between their local, national, racial, cultural, and global identities by extending and illustrating content with the children's own experiences. At the center of beliefs about teaching is the importance of cultural identity and development.

Regarding beliefs about knowledge, teachers from Ladson-Billings' (1994) study expressed that knowledge is continuously re-created, recycled, and shared by both students and teachers. Teachers' beliefs reflected that they could learn as much from students as students can learn from teachers. The participating teachers critically examined the content of the curriculum and felt passionate about teaching it. In addition, teachers reported that they help students to develop new knowledge by building bridges to the children's experiences, while encouraging them to think about their experiences in a critical and relevant way in relationship to the content of the lesson. Ladson-Billings reported that these teachers who use culturally relevant methods make few assumptions about children's prior knowledge, drawing on their students' experiences in creating an engaging learning environment. Children's experience and knowledge seems to be central to guiding these teachers' behaviors in the classroom. Developing critical thinking patterns among students, using children's experiences is an essential part of teaching.

Ladson-Billings (1994) also reports that the eight teachers in her study demonstrated a connectedness with each of their students and encouraged the same among students. They encouraged a community of learners, providing students with opportunities to learn collectively.
and cooperatively. Ladson-Billings refers to the common traits among these teachers as culturally relevant because the teachers could "see color and could see culture" (p. 30).

Teachers in Ladson-Billings' (1994) study acknowledged a cultural or ethnic identity as a part of each child. They made interconnections between culture and curriculum content, and between culture and classroom practices. Ladson-Billings proposes that the success of these teachers was exhibited by their belief in and practices guided by the importance of seeing the cultural identity of children in the classroom, thereby creating the interconnections between children's self, national, and global identities. Bridging the content of the curriculum to the children's knowledge at a personal level creates opportunities for academic excellence for students in urban schools.

Hilliard (1981, as cited in Willis, 1995) states that some of the most important factors that influence the teaching and learning processes have to do with beliefs and culture. Accounting for what may seem invisible at times, may actually help tease out some of the most influential variables on teaching practices and learning processes. Willis (1995) focused her observations on one particular classroom in her study in order to decipher the beliefs that were transmitted in the classroom. Similarly, Ladson-Billings (1994) examined the beliefs and practices of eight teachers who were nominated by parents, principals, and colleagues as highly effective with African American children. Willis' and Ladson-Billings' qualitative studies are the primary sources on which the present study is based. In order to draw relationships between beliefs and practice, and between beliefs and learning processes, quantifiable measures need to be developed, compared, and examined within African American communities.

Historically, many positive relationships have been reported between what has been called teacher efficacy—a measure of beliefs—and student achievement on standardized math
Teachers' Beliefs and Student Achievement

and reading tests, and between teacher efficacy and teacher behaviors, such as professional commitment, persistence with struggling students, and experimentation with methods of instruction and instructional materials (Henson, 2001). However, the early construct of teacher efficacy was confounded with locus of control; yet the research continued to grow and expand with clearer construction of measures based on Bandura's (1993, 1997, 1986) social cognitive theory of self-efficacy.

Goddard, Hoy, and Hoy (2000) built on Bandura's (1993) theory of individual and collective efficacy with the examination of collective teacher efficacy, measuring teachers' beliefs in the faculty as a whole and aggregating this information. Defining collective teacher efficacy, Goddard, Hoy, and Hoy state that the "perceived collective efficacy represents the shared perceptions of group members [...] associated with the tasks, level of effort, persistence, shared thoughts, stress levels, and achievement of groups" (p. 482). Their claim is that this shared perception is demonstrated in beliefs related to the performance capability of the whole group.

Theses researchers examined the relationship between collective teacher efficacy and student achievement in a multilevel analysis based on this notion of collective teacher efficacy (Goddard, Hoy, & Hoy, 2000). Results indicated that collective teacher efficacy, or those beliefs of individuals that the faculty as a whole can achieve their goals with students, accounted for 53.27% and 69.64% of the between-school variance in elementary students' math and reading standardized achievement scores, respectively. This was after the variance associated with socioeconomic status, race, and gender of students, as well as within school variance, was accounted for by the analyses. Goddard, Hoy, and Hoy claim that collective teacher efficacy is an important contributor to school climate and to the development of effective schools. In other
words, “the negative association between SES and achievement is more than offset by the positive association between collective teacher efficacy and student achievement” (p. 500). The idea that whole school belief systems are such powerful predictors of student achievement is similar to the rationale that guided Willis’ (1995) investigation of a successful urban African American school. Whole school belief systems seem to lead to the notion that school climate is an important and powerful part of professional training to undertake in creating effective schools for all children.

In support of this, Bandura (1993) claims, “teachers’ beliefs in their personal efficacy to motivate and promote learning affect the types of learning environments they create and the level of academic progress their students achieve. Faculties’ beliefs in their collective instructional efficacy contribute significantly to their schools’ level of academic achievement” (p. 117). Furthermore, Bandura’s research indicates that student body characteristics alter collective teacher efficacy, which affects school-level student achievement more strongly than the direct effect of student body characteristics on school-level student achievement. For example, “schools heavily populated with minority students of low socioeconomic status achieve at the highest percentile ranks basked on national norms of language and mathematical competencies” if taught by teachers who believe that by their collective efforts that “students are motivatable and teachable whatever their background” (p. 143). In other words, it is the collective belief that all children can succeed that may make a significant difference in children’s achievement levels when the majority of students are low-income and students of color. When considering educational excellence for urban children of color, school climate and collective teacher efficacy may be important to measure.
In contrast to the theoretical approach of the research on collective teacher efficacy, the current study employed previous qualitative data that emerged from studies related to successful teachers' beliefs of African American children. Studies of collective teacher efficacy examined teachers' beliefs regarding a sense of competence as a faculty in achieving the school's goals based in self-efficacy theory. The current research was designed to explore teachers' beliefs in relation to previous qualitative studies. While the present study is a correlational study, there is no assumption regarding the direction of effects.

Both qualitative and quantitative researchers have informed the field of teacher education about the complexities of teacher beliefs and expectations, and their relationship to achievement and environmental support for learning. The relationship between teachers' beliefs and student learning for African American children remains an area in need of a variety of methods of study in order to build on the existing knowledge, and to inform teacher education programs for the best preparation of pre-service teachers.

Research Questions

Ladson-Billings (1994), like Willis (1998; 1995), began with successful learning environments and studied what occurs in the classrooms and in the schools. They were each concerned with the beliefs and practices that could be deciphered through in-depth interviews and observations. Their work creates a foundation from which quantitative measures of beliefs and practices can be created. Such quantitative measures can then be correlated with student outcomes to examine the relationships and effect sizes of these relationships. Studies are lacking that have developed a quantitative measure of teachers' beliefs regarding teaching, knowledge, and social relationships in classrooms serving African American children. Furthermore, studies are lacking that have examined the relationship between these beliefs and student learning.
Therefore, the goal of the present study, within the context of a larger study that quantitatively assessed these beliefs that emerged from studies of effective teaching of African American children, was to examine the relationship between this component of an educational context and aggregated student achievement. This was accomplished by examining the relationship between the factors of teacher beliefs that emerged from the larger study and student outcome, specifically math, reading, and language arts standardized achievement averaged within each classroom.

The question the present study was designed to address is: how much variance do the factors measured by the survey of teaching philosophy from the larger study explain in student achievement, averaged by class, in math, reading, and language arts in an urban, primarily African American student population? Based on this question, the following prediction was tested. Factors related to teachers' beliefs which endorse the successful teachers' beliefs and practices in Ladson-Billings' (1994) study, will explain a significant amount of variance in average student math, reading, and language arts standardized achievement scores. For example, those teachers who endorse the belief that knowledge is recyclable, all students can succeed, it is important to make connections between the children's cultural identities and the curriculum content, and it is important to create a familial context for all learners, will explain a significant amount of variance in class averages of student achievement in math, reading, and language arts.

Method

Participants.

A subset of the participating teachers surveyed in the larger study (46 of the 244) was identified from two (of the original six) participating schools. These schools were participants in a school change effort along with other local schools in a coalition. Of these 46 teachers, 13
taught first grade, 10 taught second grade, 8 taught third grade, 9 taught fourth grade, and 6 taught fifth grade. The students assigned to these teachers’ classrooms (N = 1035 students) also served as participants in the present study. Standardized achievement scores from these participants were collected.

The 46 teachers were drawn from two schools, 23 from each. This was 70% eligible participation from the first school and 87% eligible participation from the second school. Participants were eligible if they were the lead teacher of a class in grades one through five. Each of the two schools qualifies as primarily low-income, serving free and reduced breakfast and lunch each day to 95% of their students. Both schools serve primarily children of African descent from the surrounding neighborhoods. According to the Council for School Performance Report (1997-98), each falls in the lower 20% of schools in Georgia. This rating was based on the percentage of third and fifth graders who are above the national median in Iowa Test of Basic Skills in Reading, Math, and Language Arts. The percentage of third graders from the first school who scored above the national median was 33.3% for reading, 32.7% for math, and 20% for language arts. The second school was reported to have 22.9%, 16.2%, and 27.8% of third graders scoring above the national median for each of the above named tests. The percentages for the state were 50.0%, 55.6%, and 54.5%, respectively.

The percentage of third graders scoring in the upper quartile on the Iowa Test of Basic Skills in Reading was 10.5% in the first school and 3.4% in the second school. The percentage of third graders scoring in the upper quartile on the Iowa Tests of Basic Skills in Math was 16.8% in the first school and 6.0% in the second. The percentage of third graders scoring in the upper quartile for the state was 19.3% in reading and 30.2% in math.
The percentage of fifth graders scoring above the national median in the first school was 41.6% for reading, 22.5% for math, and 36.0% for language arts. The second school was reported to have 28.0%, 22.4%, and 36.7% of fifth graders scoring above the national median in the Iowa Test of Basic Skills in Reading, Math, and Language Arts respectively. The percentage of fifth graders scoring in the upper quartile for reading and math was 3.4% and 5.6%, respectively, in the first school and 4.0% and 9.2%, respectively, in the second. The state medians were 16.9% and 26.1%, respectively.

In addition to the academic performance reports, each of the schools experienced a substantial percentage of student absenteeism: 36.2% in the first school and 43.5% in the second school were absent more than 10 days out of the 1997-1998 academic year (Council for School Performance Report, 1999). This includes those students who were not enrolled for the entire year, which confounds the information. However, each of the schools reported a high percentage of teachers who participated in staff development above the required 10 planning days, 91.3% in the first school and 100% in the second. The percentage of teachers who hold a master’s degree or higher is 34.8% in first school and 30.6% in the second.

While the overall academic achievement, as measured by the Iowa Test of Basic Skills is generally low for both schools, clearly there is a commitment on the part of the teachers to participate in professional development. In some cases, students have gained in their performances on standardized tests from years before, while in other cases, performance has dropped. Overall, third- and fifth-grade students performed below the national median on all of the standardized tests administered for the 1997-1998 academic year. The absenteeism rate includes students who are transient and not enrolled for the whole academic year.
Of the 46 participating teachers, 32 were African American, 13 were Caucasian, and 1 was Indian. Mean age was 38 years, ranging from 25 to 55 years. Level of education ranged from the attainment of a bachelor’s degree to having a specialist’s degree. Years of previous teaching experience ranged from 1 to 30, with a mean of 11.

Procedure.

Standardized scale scores from the Iowa Tests of Basic Skills (ITBS, SS-701a) were converted to z-scores for each student, and used in the final hierarchical regression/correlational analyses. The z-score conversion was done so that the scores could be collapsed across grades. The scores for each grade level are based on different scales, and there were not enough participants to analyze the relationship between teachers’ beliefs and student achievement by grade level. Achievement scores included the advanced skill components for math, reading, and, when available, language arts (i.e., one school administered only reading and math advanced skills tests to the first grades). Math, reading, and language arts scores were maintained as separate for analyses, examining relationships between teachers’ belief scores and math outcome, reading outcome, and language arts outcome in three discrete regression analyses.

The unit of analysis was the individual teacher (or classroom). That is, data for each class, using the teachers’ identification numbers, were aggregated into mean achievement scores for math, reading, and language arts, when available. Each teacher also had one score for each scale created from the factor analysis in the larger study (see Love, 2001). Therefore, each teacher had a total of two to three achievement scores, representing the criterion variables, and five scale scores, representing the predictor variables. This constitutes a nested design, in which data for a group are collapsed, or aggregated, to match a single subject. The unit of analysis in a nested design must be chosen at the level of student, teacher, school, or some combination of
these levels. With aggregated scores across each class, the teacher (or the class as a whole) is the unit of analysis. Caution, therefore, must be taken in interpreting the results. The relationship between teachers' beliefs and student achievement is actually between teachers' beliefs and student achievement averaged per class. Therefore, the description is not of individual student achievement, but of average student achievement per class.

Results

The results support, in part, the prediction of the present study. The prediction was made that factors related to teachers' beliefs in the larger study would explain a significant amount of variance in students' average achievement in math, reading, and language arts. While a significant amount of variance was not explained in either average math or average language arts achievement, a significant amount of variance in average reading achievement was explained by two of the five factors using hierarchical regression analysis. The models with all five factors entered into the hierarchical regressions in order of appearance in the factor extraction method, did not reach significance. Given that the unit of analysis is the teacher, it is inappropriate to discuss individual student effects. It is appropriate, however, to explicate the relationship of the two factors to the class average in reading achievement. The five factors were defined in the analyses from the larger study as follows. (For a full explication of the factor analysis in the larger study, see Love, 2001).

Factor Analysis

Factor I. Factor I consisted of 14 items that described beliefs regarding the importance of cultural and racial identity of the students, which serves to guide teachers' planning effective lessons. Items also included beliefs reflecting high regard for students' individual needs and knowledge, as well as the importance of developing critical thinking skills in students (see
Appendix A). The mean scale score for Factor I was 3.18 (SD = .41), with scores ranging from 2.36 to 3.93, indicating that on average, teachers agreed with the 14 items.

**Factor II.** Factor II consisted of four items describing teachers' professional commitment to urban education. One of the four items negatively correlated with the other three. The scores on that item were reversed in order to compute a mean scale score for each teacher (#39, "If I had other training I would probably change careers," see Appendix A). Another item loaded on Factor I, as well (#17). The mean scale score was 3.07 (SD = .67), with a range from 1.25 to 4.0, indicating that, again, on average, teachers agreed with items on the scale, describing a professional commitment to urban education.

**Factor III.** Factor III consisted of four items describing teachers' self-directed, rather than student-centered, planning and teaching strategies (see Appendix A). Two of the four items negatively correlated with the other two. The scores on these two items (Items # 21 and #30) were reversed in order to compute a mean scale score for each teacher. The mean scale score was 1.25 (SD = .62), with a range from 0 to 2.75, indicating that, on average, teachers disagreed with these scale items describing a teaching and planning strategy less responsive to students.

**Factor IV.** Factor IV consisted of three items describing teachers' inability to connect with some students and lack of success with students (see Appendix A). The mean scale score was 1.97 (SD = .85), with a range from 0 to 3.33, indicating that, on average, teachers both agreed and disagreed with the scale items, describing this inability to connect with and support some students to success.

**Factor V.** Factor V consisted of three items describing teachers' strategy for drill and practice and peer learning because these are ways to help lower achieving students learn more effectively (stated as reasons in the items on this factor, see Appendix A). One item described the
purpose for providing a good education to urban students is to help them move out of the community and have a better life for themselves. The mean scale score was 2.46 (SD = .78), with a range from 0 to 4.0, indicating that, on average, teachers both agreed and disagreed with the scale items, describing one strategy to providing a good education to urban students.

**Multiple Regression Analysis.**

The hierarchical regression model enabled one factor at a time to be entered into the model. This model is an additive model, in that each variable entered into the model adds an amount of variance in the dependent variable that can be accounted for by that particular independent variable in addition to the variable(s) preceding it in the regression, and the total amount of variance accounted for by the final model is the accumulated variance from all of the factors. The standardized beta coefficients are used to compare effect sizes between the independent variables in their respective order of additive variance. Each factor is measured on the same scale. The effect sizes do not suggest cause and effect; because the effect variables (the five belief factors) were measured after the dependent variable was measured (achievement scores), which is contrary to most cause and effect studies. Rather, the amount of variance in students' average reading achievement that can be explained by two of these five factors is more appropriate and will be discussed. Effect sizes must be squared to obtain the variance explained by each. There are also many effects on student achievement. The achievement scores that have been recorded and averaged, by class, can be affected by unmeasured variables, including random error. In this study, the purpose was to explore the relationship that may exist between teachers' beliefs, as measured by the self-report survey, and students' average achievement.

As mentioned above, the two participating schools experienced significant attendance problems during the 1997 to 1998 academic year (Council for School Performance Report, 1997-
The percentage of students who were absent more than 10 days out of the year at the first school was 36.2%, and at the second school was 43.5%. This does, however, include students who were enrolled for less than the full academic year, confounding the information. This led to the decision to include in the analysis only those students attending 90% or better of the entire academic year. The reduction in the number of students was 24% for reading, 29% for math, and 27% for language arts, indicating that about a quarter of the students at the two schools were enrolled for less than 90% the full academic year (n = 784, reading; n = 738, math; n = 579, language arts). When eliminating these students, the class averages for reading, math, and language arts, increased slightly, bringing these averages closer to zero, which is the mean of a normal z-distribution. The standard deviations, however, were between .5 and .7, indicating a curve with a higher than normal kurtosis. Scores were clustered more closely to the mean with less than a normal spread; otherwise, the standard deviation would be one.

In the hierarchical regressions conducted on the class averages in math, reading, and language arts achievement, the models with all five factors entered into the hierarchical regressions in order of appearance in the factor extraction method, did not reach significance, [(F [40, 5] = 2.00, p = .099) for reading, (F [40, 5] = 1.50, p = .211) for math, and (F [29, 5] = 1.92, p = .12) for language arts; see Tables 4, 5, and 6 for regression model summaries]. However, factors I and V did indicate interesting contributions to the variance where each came close to reaching significance in explaining average reading achievement (see Tables 1 and 2 for means and Table 3 for correlation matrix). When exploring further and entering only Factors I and V into the regression, the model was significant in explaining the variance in average reading achievement (F [43,2] = 5.027, p = .011), using an adjusted study-wise alpha of .013. That is, teachers whose beliefs reflected both a "culturally congruent" approach to teaching and whose
approach entailed "poor-learner support," were more likely to teach students who performed better, on average, than their peers on the standardized reading achievement test. This is not, however, to be interpreted as a unidirectional effect. It may be that classes who perform better on reading achievement tests influence their teachers' beliefs (see Table 7 for regression model summary).

Discussion

Reading was significantly related to beliefs on Factors I and V, and teachers' beliefs on Factor I came close to significantly predicting average language arts and math achievement. With a larger sample size (a priori analysis yielded a minimum sample size of 70 compared to the present sample size of 46), the relationship between teachers' beliefs related to an approach endorsing "culturally congruent" teaching practices and average math and language arts achievement may have reached significance. The sample size for language arts was reduced even further than reading and math due to limited administration of the language arts achievement tests, which may also explain why significance was not reached for it.

However close to significance some of the models came, the one that can be further explicated is the model with Factors I and V that explains a significant amount of variance in average reading achievement. Reading is a high priority in both schools. The aggregated students' performance on standardized achievement tests was lower than the national and state medians for each test. However, each of the schools was involved at the time of the data collection in a whole school change initiative that required self-examination of the school administration, teaching staff, and self-assessment of school climate and classroom support for the students enrolled. Each is an urban school serving primarily low-income African American students. In addition, the majority of the teachers are involved in professional development more hours than is required by the school system. For all of these reasons, it makes sense that the
factors that endorse a "culturally congruent" teaching philosophy and that reflect a conscious effort at giving low-achieving students the support they need to succeed, including direct teaching efforts and peer-learning experiences, contribute to improving average reading achievement.

Willis' (1998, 1995) observations of teachers in a successful school and other classrooms serving primarily African American students, indicated teachers' appeal to a "parent-like relationship" with their students. She also observed teachers promoting affection as a discipline style, family relationships and interactions, communal and cooperative values, and values focused on spiritual ancestral connections and the interconnectedness of life. The cluster of beliefs that addressed "cultural congruence" consists of the importance of cultural identity and critical thinking as valuable for bridging and enhancing the content of the curriculum using students' knowledge and experiences. This may be related to Willis' observations of teachers who are conscious about integrating students' cultural identity into the classroom environment. A relational style of teaching may be part of the behavioral manifestation of the beliefs in the importance of cultural identity of the students.

It may also be that making spiritual connections to ancestors and speaking of the interconnectedness of life is a regular part of a classroom environment that also focuses on the cultural identity of students. This relationship was not specifically measured in the current study, but remains a hypothesis for further research. Closely related to Factors I and V, however, are Willis' observations of the responsibilities that characterize a family-like relationship. She describes an observed quality of the adults in this environment; they expect students to live up to their responsibilities, much like parents expect family members to contribute to the family responsibilities. Teachers whose beliefs reflected the importance of cultural identity in teaching,
the value of developing critical thinking in students, and the importance of drill, practice, and peer learning experiences that aid lower-achieving students' success, were successful in teaching students whose reading achievement, on average, was higher than their peers. The combination of these values may be characteristic of teachers who operate within a "parent-like relationship" with their students. Again, this link between beliefs and behavior was not specifically measured in this study. Further research is needed to specifically address this relationship.

Both Willis' (1998, 1995) and Ladson-Billings' (1994) observations are supported by the results of the present study in identifying cultural identity as an important factor on which to focus in creating a successful learning environment for African American students, in particular. This is not to say that cultural and racial identity are not important for all students, but a comparison between African American students and other students is beyond the scope of this study. The purpose was to focus on African American students in urban environments. Racial and cultural identity of African Americans is the very target of racism and is subject to damage in the development of identity of African American children. It may be critical to the healthy development of identity of children of color to focus on cultural and racial identity in classrooms organized for the success of all children. Furthermore, supporting students' success, using teaching strategies such as drill, practice, and peer-learning experiences, is also an important factor in contributing to successful achievement of students in the current study. Whether these results can be generalized beyond urban, primarily African American, students, remains to be seen. As Ayers (2001) suggests from an exemplary teacher that he knows, doing whatever it takes to help every child succeed may include a variety of strategies. The important guiding principle is that, indeed, every child can succeed. The belief that every child can succeed was a part of Factor I, as well. The needs of the individual children are important in guiding the
curriculum. Teachers in the present study not only believed this, but their students, on average, performed better in reading achievement, as well.

If the results of this study were true, it implies that teacher education programs may need to seriously include reflective thinking specifically about cultural beliefs in their courses for teacher certification. These reflections would necessarily be on the part of prospective teachers, who may examine their assumptions and expectations about children of color. Are pre-service teachers aware that they may not expect all children to succeed? Do they think about the importance of creating links between the content of the curriculum and children’s cultural identity and experiences? Are they flexible enough to think about using this awareness, encouraging knowledge to be shared, as well as using more direct teaching strategies? If the results of the present study represent reality, not only do teacher education programs need to focus on belief reflections, but professional development seminars for in-service teachers and higher educators do, as well.

The results of this study demonstrate the importance of connecting beliefs to student outcome. However, it still remains unknown how these beliefs manifest in actual classroom discourse, classroom interaction, and in the learning environment in general. Students are exposed to teachers’ beliefs year after year, in an accumulated fashion. How do individual teachers’ beliefs and discourse impact the learning of students in a single year, or over time? Perhaps at the elementary school level, it is the current teacher whose beliefs are most influential on students’ current academic achievement. The reverse may also be true; that the class performance influences the teachers’ current beliefs. Further research is needed to clarify how teachers’ beliefs are manifest in the classroom through classroom interaction and discourse. More information on how teaching philosophy and classroom interaction contribute to the
variability in student outcomes can be helpful in providing effective teacher training in both pre-
service and in in-service professional development. Examining students' progress throughout the 
year in a longitudinal study may be useful, as well. Alternative forms of student outcome would 
also be helpful in understanding the influence of teachers' beliefs and classroom interaction on 
students' learning processes, and vice versa. Further research is needed to investigate these 
relationships.

Implications for Further Research

Cultural learning theory (Kruger & Tomasello, 1996; Tomasello, Kruger, & Ratner, 1993) defines learning as occurring through other members of the culture, through true 
intersubjectivity with peers or older members. Vygotsky (1978) proposed that learning occurs 
through intermental functioning, that is through the effective interaction of a child and a more 
knowledgeable peer or adult. The present study was conducted in order to examine, through 
quantitative methods, the relationship between teachers' beliefs and student outcome related to 
effective teaching practices for African American children. Implications for further research 
include the examination of teachers' beliefs reflected in their interactions and discourse in the 
classroom, that is, the examination of cultural learning and of intermental functioning in the 
classroom. Through multiple schemes for gathering information, the findings from such a study 
may reveal patterns applicable to cultural learning theory. How are teachers' beliefs reflected, or 
not, in their discourse in the classroom? What cultural content are the teachers passing on to 
younger members of our society? Specifically, what cultural values and beliefs manifest through 
classroom discourse and through interactions with the students? What is the relationship between 
measures of student outcomes and measures of the educational context in which students and 
teachers interact? Cultural learning theory may be useful in considering how teachers' beliefs are
reflected in classroom discourse and classroom interaction, creating an inter-subjective context for the children to learn.

The findings of the present study contributed in a limited way to the literature on effective teaching and learning environments for urban students, particularly African American children. Specifically, the positive relationship between students’ average reading achievement and teachers’ beliefs regarding the importance of students’ cultural identity, students’ individual needs, and strategies such as drill, practice, and peer learning experiences for lower-achieving students, contributed more substantive knowledge to the literature concerning effective teaching of African American children. The present study does not, however, contribute findings to whole school change or effective schools. It is clear that each of the schools in this study were functioning, on average, below the national 50th percentile in each of the achievement tests. They do, however, have some children that are performing well, and class averages reflected that fact. In order to argue that successful teachers hold these beliefs that predicted average reading achievement in the present study, a different selection criteria for participating schools would have been implemented. The purpose, however, was to obtain variance on all of the measures for legitimate quantitative analyses. In addition, the relationship between collective efficacy and achievement was indicated as quite strong in Goddard, Hoy, and Hoy’s (2000) study and in Bandura’s (1993) work. It would be interesting to examine the relationships among teachers’ cultural beliefs, collective teaching efficacy, and student outcome, specifically in urban schools serving African American children. Collective teaching efficacy has been shown to be a very powerful predictor of student achievement, even beyond student characteristics. The relationship it holds with teachers’ cultural beliefs would very interesting in African American schools.
Prior to the present study, there was a lack of quantitative studies measuring teachers' beliefs regarding successful teaching practices and learning environments for African American children. Furthermore, there were no quantitative analyses of the relationship between teachers' cultural beliefs and student outcome of African American children. Student achievement may be one way of accounting for the success of this intersubjectivity, although certainly far from the only way. As mentioned above, the literature on effective teachers of African American children would benefit from the quantitative documentation of specific psychological measures of classroom teaching that may predict or explain variability in student achievement or other learning outcome measures. With the information available from the current study, the leadership teams of the two schools participating in the study may be able to link the patterns from the data to some of the efforts toward professional development in which they are investing their time. These findings may generalize to urban, public school populations making the information from the present study useful to both pre-service and in-service training of teachers in urban settings.
References


http://arcweb.gsu.edu/csp/


Plessy v. Ferguson. 163 U.S. 537 (1896).


Table 1

Mean z - scores for Math, Reading, and Language Arts

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Table 2

Means for Factors I, II, III, IV, and V

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### Table 3

**Correlational Matrix of Variables in Regression**

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* p ≤ .05, ** p ≤ .01

### Table 4

**Regression Model Summary for Mean Reading Achievement**

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Regression Model Summary for Mean Reading Achievement

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<td>.03</td>
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</tbody>
</table>
APPENDIX A

FACTOR I

4. Every student I encounter is successful at something.
   a. agree strongly
   b. agree
   c. undecided
   d. disagree
   e. disagree strongly

6. Teaching is like an art—it involves dramatizing from the concrete experience to the conceptual level of understanding.
   a. agree strongly
   b. agree
   c. undecided
   d. disagree
   e. disagree strongly

8. What I learn from my students is as important as what they learn from me.
   a. agree strongly
   b. agree
   c. undecided
   d. disagree
   e. disagree strongly

15. The cultural background of my students plays an important part in my teaching. I bring their backgrounds (race, culture, heritage, etc.) into my lesson planning.
   a. agree strongly
   b. agree
   c. undecided
   d. disagree
   e. disagree strongly

17. Teaching is where I belong—I know it and the students know it, too.
   a. agree strongly
   b. agree
   c. undecided
   d. disagree
   e. disagree strongly

24. Every child is a unique composite of his or her racial, cultural, home, and peer experiences.
   a. agree strongly
   b. agree
   c. undecided
   d. disagree
   e. disagree strongly

25. The individual needs of the children are an important part of my planning effective lessons.
   a. agree strongly
   b. agree
   c. undecided
   d. disagree
   e. disagree strongly
<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
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</table>
| 27. I view my students' identities as rich with color and culture.      | a. agree strongly  
 b. agree  
 c. undecided  
 d. disagree  
 e. disagree strongly |
| 32. One of the key elements that guide my teaching of content is that students have got to learn to think critically rather than just memorize facts. | a. agree strongly  
 b. agree  
 c. undecided  
 d. disagree  
 e. disagree strongly |
| 34. Sometimes I play the role of the student and allow students to teach the class. | a. agree strongly  
 b. agree  
 c. undecided  
 d. disagree  
 e. disagree strongly |
| 35. It is part of my responsibility as a teacher to make connections between what happens in the world and who my students are. | a. agree strongly  
 b. agree  
 c. undecided  
 d. disagree  
 e. disagree strongly |
| 40. I work with some of the most important people in the world—my students. | a. agree strongly  
 b. agree  
 c. undecided  
 d. disagree  
 e. disagree strongly |
| 44. The individual needs of the children are an important part of my planning effective lessons. | a. agree strongly  
 b. agree  
 c. undecided  
 d. disagree  
 e. disagree strongly |
| 45. Every child that comes to me, no matter how poor, is brilliant.       | a. agree strongly  
 b. agree  
 c. undecided  
 d. disagree  
 e. disagree strongly |
FACTOR II

17. Teaching is where I belong—I know it and the students know it, too.
   a. agree strongly
   b. agree
   c. undecided
   d. disagree
   e. disagree strongly

29. Teaching urban children in public schools is where I belong.
   a. agree strongly
   b. agree
   c. undecided
   d. disagree
   e. disagree strongly

*39. If I had other training I would probably change careers.
   a. agree strongly
   b. agree
   c. undecided
   d. disagree
   e. disagree strongly

42. I teach in an urban public school because I want to.
   a. agree strongly
   b. agree
   c. undecided
   d. disagree
   e. disagree strongly

*Negatively correlated, therefore reversed scored when calculating mean scale score

FACTOR III

*21. A good lesson plan is only tentative.
   a. agree strongly
   b. agree
   c. undecided
   d. disagree
   e. disagree strongly

*30. Students’ responses determine where I go with a lesson; I just cannot put a time limit on good teaching.
   a. agree strongly
   b. agree
   c. undecided
   d. disagree
   e. disagree strongly
37. Someone's got to teach these youngsters in urban schools; it might as well be me.
   a. agree strongly
   b. agree
   c. undecided
   d. disagree
   e. disagree strongly

46. Teaching is like paying my dues to society. When I’m through paying my debt, I’ll probably retire or change professions.
   a. agree strongly
   b. agree
   c. undecided
   d. disagree
   e. disagree strongly

*Negatively correlated, therefore reversed scored when calculating mean scale score

FACTOR IV

12. Some children I just cannot seem to connect with.
   a. agree strongly
   b. agree
   c. undecided
   d. disagree
   e. disagree strongly

16. Every year some students can be expected not to be a good match for me—they may, however, succeed with someone else who better meets their needs.
   a. agree strongly
   b. agree
   c. undecided
   d. disagree
   e. disagree strongly

31. Some students, no matter what I do, will inevitably fail.
   a. agree strongly
   b. agree
   c. undecided
   d. disagree
   e. disagree strongly
FACTOR V

10. With enough repetition, drill, and practice, students will attain a passing grade.
   a. agree strongly
   b. agree
   c. undecided
   d. disagree
   e. disagree strongly

26. The reason I use some form of peer learning in the classroom is because it's supposed to help lower achieving students learn the material better.
   a. agree strongly
   b. agree
   c. undecided
   d. disagree
   e. disagree strongly

28. My students need a good education so that they can move out of this community and have a better life for themselves.
   a. agree strongly
   b. agree
   c. undecided
   d. disagree
   e. disagree strongly
Title: The Relationship Between Teachers' Beliefs and Achievement in Two Primarily African American Urban Schools

Author(s): Angela Love, Ph.D.

Corporate Source: Queens College - CUNY

Publication Date: April 2002

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