THE IMPACT OF C.R.E.A.T.E. ON URBAN STUDENT SUCCESS IN MATHEMATICS

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THE IMPACT OF C.R.E.A.T.E. ON URBAN STUDENT SUCCESS IN MATHEMATICS

A Dissertation

by

Kadhir V. Rajagopal

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I certify that this student has met their requirements for format contained in the University format manual, and that this dissertation is suitable for shelving in the library and credit is to be awarded for the dissertation.

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Carlos Nevarez, Ph.D.       Date
CURRICULUM VITAE

Education

B.A. in American Studies, December, 2002
UC Berkeley, Berkeley, CA, Cumulative G.P.A. 3.51

Teacher Credential/BCLAD Single Subject in Math and History, Dec. 2005
USF, San Francisco, CA, Cumulative G.P.A. 3.45

Masters in Education, December 2005
USF, San Francisco, CA

Special Education Mild/Mod Credential, Dec. 2006
San Francisco State, SFSU, CA

Administrative Services Credential, June 2007
Sacramento State University, Sacramento, CA

Ed.D. Doctorate in Education, August 2007- Present
Sacramento State University, Sacramento, CA
Professional Employment

Math Teacher at Grant Union High School, Sacramento, CA
Sept. 2006- present
I am currently a Math teacher and Instructional Coach for teachers working with at risk populations including the Special Day Classes consisting of students who have both learning disabilities and behavioral problems. My students have outperformed the entire Grant district of thousands on every district-wide exam by far. Their success and the instructional strategies I have used to help excel them have been the subject of a documentary and numerous state and national conferences related to addressing the achievement gap.

9th and 10th Grade English Teacher and Math Tutor at Berkeley Alternative High School, Berkeley, CA
Sept 2005-June 2006
I was an English teacher at an alternative school. I taught students who had behavioral problems or truancy problems in the past. They were highly at risk and behind in their skills but had a lot of potential if they were motivated. I engaged the class by making the class into a game and integrating the curriculum. One of the main goals was to get them to pass the state exit exam and to feel inspired to live a positive life. Furthermore, my students had put together three books that were compilations of high quality essays. I was also a Math tutor at my school and helped my students to take and pass the CAHSEE (exit exam).

7th Grade Social Science Teacher at Madison Middle School, Oakland, CA
Sept. 2004-June 2005
As a 7th grade History teacher, I was able to get my students to learn the content based on the state standards. On every test taken from the district assessment book, at least 70% of my students scored an A. I was able to engage a majority of my students using various educational activities that involved music, sports, and games.
Student Teacher at Skyline High School, Oakland, CA Sept. 2003-June 2004
As an 11th grade English teacher in an East Oakland high school, I was able to improve the academic performance of the most marginalized students. Many kids produced their best work such as persuasive essays, letters, and research papers in my English class. The curriculum I designed integrated English skills with social justice or an active awareness of social problems that affect their inner city black and Latino communities. Also, I organized several social empowerment projects that related English to social problems, responsibility and action.

Caretaker for Students with Disabilities, UC Berkeley, CA Sept. 1999-present
I have been a caretaker and good friend to five different students at UC Berkeley with disabilities. These students have paralysis, slight retardation or cerebral palsy. My responsibilities include cleaning, showering, feeding and helping with homework both at 6:30 A.M. and at 10 P.M. everyday. I have learned a great deal about patience and the importance of looking beyond a disability. Many of these people I take care of have inspired me with their motivation to succeed and have taught me that they are no different from other human beings since they too have feelings and the ability to love others.

Tennis Instructor and Youth Mentor at after school program, North Oakland, CA Sept. 2000-Dec.2002
I was a youth mentor and tennis coach for middle school youth at Bushrod Academy in North Oakland. I was responsible for helping kids with their homework and then teaching tennis to 30 kids from 3pm to 6pm everyday. I used my position as a coach to design games that promoted teamwork, leadership, and hard work.
Abstract

of

THE IMPACT OF C.R.E.A.T.E. ON URBAN STUDENT SUCCESS IN MATHEMATICS

by

Kadhir V. Rajagopal

Failure in algebra is the #1 trigger of dropouts in high school according to a former superintendent of Los Angeles Unified School District (LAUSD) (Helfand, 2007). Too many urban students of color are failing or performing below basic in foundational mathematics. The author, a teacher at West High School, has been able to achieve different results with low income urban students in algebra. The author has used specific strategies that have helped the majority of his once low-performing students to consistently succeed in algebra and outperform their peers throughout the entire Grand District and state of California. The strategies used by the author have been integrated into an instructional model called C.R.E.A.T.E. This project focused on documenting the impact C.R.E.A.T.E. could have on the results other math teachers experienced with their students in foundational math classrooms, specifically, algebra and geometry. Furthermore, the study revolved around the issue of replicating the success the author has had with C.R.E.A.T.E. in other classrooms. The purpose of
this study was to examine if the implementation of C.R.E.A.T.E. in other teachers’ classrooms at West High School resulted in a majority of low income and underperforming students succeeding on district and statewide math assessments in algebra I and geometry. The documentation of strategies and results from the implementation of C.R.E.A.T.E. may provide evidence for administrators at the district and state level to determine if the C.R.E.A.T.E. model should be implemented as a way to address the pressing crisis of failure in math for diverse urban populations.
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Chapter 1

INTRODUCTION

According to the superintendent of Los Angeles Unified School District (LAUSD), the second largest district in the U.S., failure in algebra is the number one trigger of dropouts in high school (Helfand, 2007). The California Dropout Research Project reveals that 70% of students who do not pass algebra by the ninth grade drop out of high school compared to 30% for those students who do pass it (California Dropout Research Project, 2008). Failure in the three foundational math classes, algebra, geometry, and algebra 2, can also be perceived as a major roadblock because, as many influential policy makers including California Governor Arnold Schwarzenegger have declared, math is the “gateway” to college and higher-paying careers (Tucker, 2008). Research by the U.S. Department of Education explains how of all the high school courses, the highest level of mathematics taken is the most important for college success (Adelman, 1999).

Unfortunately, failure or poor performance in foundational math classes such as algebra is a national epidemic facing urban secondary education and adversely impacting students of color. The National Assessment of Educational Progress states that the “overwhelming number of low-achieving students in algebra are black and Hispanic and attend big urban, high-poverty schools where they are more likely to fall through the cracks” (Loveless, 2008). Moreover, African American and Hispanic students are about twice as likely as whites and three times as likely as Asians to cease their math career at the lower level of algebra (Adelman, 1999).
Failure or poor performance in foundational math classes can be defined as a lack of a basic understanding of algebra, geometry, or algebra II which can be seen through either failing grades in math classes or performing below basic on standardized state math exams. The failure in foundational math classes for urban students of color is seen in the fact that only between 8% and 10% of African American and Latino students in California were proficient in algebra based on the 2008 California Standardized Test of Algebra (Education Trust-West, 2008). Overall, 65% of African American students and 60% of Latino students who took algebra scored below the basic level on the California Standards Test in Algebra. By contrast, 65% of white students and 80% of Asian students who took algebra score at the basic level or above.

While the epidemic of poor performance for urban youth in the “gateway” course exists statewide, it is especially exacerbated in urban districts like LAUSD where the student population is 73% Latino and 11% African American. In 2006, 29,000 out of 48,000 kids who took algebra failed it in Los Angeles. For those kids who repeated algebra, 75% of them failed it again. Research by the U.S. Department of Education indicates that the single greatest predictor of college preparedness and successful college completion is the taking of high level mathematics courses during high school (Adelman, 1999). Furthermore, the work of Robert Moses with the Algebra Project has demonstrated that if students do not successfully complete algebra, they are unlikely to succeed in institutions of postsecondary education and as a result may be denied many future educational and employment opportunities (Cobb
& Moses, 2001). Therefore, failure in foundational math classes for urban students of color is a statewide crisis that needs to be urgently addressed because it adversely impacts the opportunities youth have in attaining higher education and higher wage careers.

![Figure 1. Below Basic in Algebra.](image)

Statement of the Problem

Too many urban students of color are failing or performing below basic in foundational mathematics. This statewide epidemic of urban math failure also adversely affects students at West Union High School in Sacramento, CA, where this study takes place. West’s student population is 60% African American and Latino and the students come from the urban community known as Crown Park in Sacramento (Ed-Data, 2008). In the 2008-2009 school year, there were a disproportionate number of students who received D’s and F’s. In algebra I, 51% of all students enrolled in algebra I received either a D or F as their final grade. Excluding the students in the author’s class, 80% of the students in algebra classes received a D or F.
Figure 2. Grade Distribution in Math Classes, 2008-2009.

This pattern of failure in foundational math classes is also seen in the student achievement data from 2007. That year, almost 90% of the students failed the district wide algebra final exam; 400 students out 450 students who took algebra failed the final exam at West. In geometry classes, 50% received either a D or an F. Finally, in algebra II, 74% received a D or an F. Altogether, roughly 60% of all students in foundational math classes at West received either a D or F. Even more mind boggling is that there were more F grades given out than any other grade for students taking a math class. That implies that after 36 weeks of the school, 402 students out of 1,184 students who too math did not receive their credits and had a 0.0 grade points average from math.

Furthermore, in 2009, state testing results from the California Standards Test (CST) revealed that West students are lagging behind the state in their performance in foundational mathematics. The five levels of performance on the CST are far below basic, below basic, basic, proficient, and advanced. The goal for administrators at
West was for a majority of students to perform at least at basic or above level. The CST administered in May 2009 showed that only 30% of students performed at a basic or above level on the statewide standardized algebra exam. This means 70% of students or 358 out of 511 students at West did not even have a basic understanding of algebra after 36 weeks of the school year. Also, only 10% of all students were proficient or above on the test.

But without the author’s students, only 4% of the remaining students from other classes were proficient in algebra. In the state of California, 51% of all students were above basic in algebra and 25% of all students were proficient or above. (Ed-Data, 2008). In geometry, 27% of West students performed at a basic or above level compared to 33% for the district and 48% for the state. In algebra II, just 26% of students were basic or above compared to 56% for the district and 57% for the state. Overall, 71% or 910 students out of 1267 students enrolled in algebra I, geometry, or algebra II were below basic. Therefore, the overwhelming majority of the students at West High School are below basic and performing at a lower level than the district and the state in all of the foundational math classes.
Background of the Study

In the midst of consistent algebra failure at West High School, the author, a teacher at West High School, has been able to achieve different results with low income urban students in algebra. The author’s students have consistently outperformed thousands in the district. The author has used specific strategies that have helped the majority of his once low-performing students to succeed in algebra and perform at a basic and higher level of mastery and outperform their peers throughout the entire Grand District and state of California. The strategies used by the
author have been integrated into an instructional model called C.R.E.A.T.E. This model emphasizes pedagogical practices that are grounded in research and have proven to be successful in the author’s classroom. The C.R.E.A.T.E. approach involves teachers making efforts to be culturally responsive in their instructional approach to urban students. It asks for teachers to have rigorous and rewarding expectations for themselves and then for all students. The model also suggests that teachers focus on essential concepts of the curriculum, to implement assessment driven instruction, to expose students to test models and strategies, and provide extra one on one intervention for students who are struggling. For the purposes of this study, the students who are taught under the C.R.E.A.T.E. model will be referred to as the C.R.E.A.T.E. students.

The success that West students have experienced under the C.R.E.A.T.E. instructional model has been documented over the last two years during which the author has taught algebra to the Special Day Class and General population. The “Special Ed” population that the author taught in 2007 consisted of students who had learning disabilities and behavioral challenges. Most of the population was African American and Latino and came from highly dysfunctional backgrounds. Many of the students had disabilities ranging from hyper attention deficit disorder to mild cerebral palsy. Their math skills levels were at the third grade level according to traditional tests of basic skills and intelligence such as the Woodcock Johnson. They were not expected to do the same algebra as the general population because of their disabilities.
Nonetheless, the author challenged them and they did the same curriculum and took the same standardized tests as the general population.

In October 2007, the C.R.E.A.T.E. students in the Special Day Class took the district wide midterm assessment and outperformed the entire district. The “Special Ed” kids had an average of 56% and the district had an average of 46%. In December 2007, the Special Day Class took the fall semester district wide final exam. Their average score was 62% and the district’s average was 42%. West High School’s average score was only 39% on that same final exam. Furthermore, the Special Day Class outperformed the district with an average score of 57% compared to 43% for the district on the 3rd quarter and 4th quarter final exam for algebra. It is important to recognize that the Special Day Class was required to show their work on each problem and not simply bubble in answers on the multiple choice standardized exam.

Figure 4. Average Scores on Grand District Algebra Final Exam, Fall 2007.
While the author, using the C.R.E.A.T.E. instructional model, has seen success with the Special Day Class population, he has also had positive experiences with the general population which he taught during the 2008-2009 school year. The C.R.E.A.T.E. students during that school year performed at a higher proficiency level on every district wide quarter exam than other students throughout the district. In April 2009, the C.R.E.A.T.E. students took the CST statewide algebra exam in algebra. Seventy percent of the C.R.E.A.T.E. students scored basic and above on the test while only 21% of other students scored basic or above. Thirty-seven percent of the C.R.E.A.T.E. students were proficient while only 4% of other students were proficient. The C.R.E.A.T.E. students outperformed the district as well. The Grand District had only 39% of students basic and above and 17% proficient. Finally, the

*Figure 5. Average Scores on Grand District Algebra Final Exam, Spring 2008.*
C.R.E.A.T.E. students outperformed the state of California on the algebra CST. The state had 51% of students at a basic or above level and 25% at a proficient level.

The C.R.E.A.T.E. students also exceeded the rest of the school, district and state in closing the achievement gap in terms of ethnicity and income. Seventy-one percent of C.R.E.A.T.E. African American students were at a basic or above level and 42% were proficient. For the state, only 35% of the African American students reached basic and above and 13% were proficient. Furthermore, 68% of C.R.E.A.T.E. Latino students reached basic or above and 29% were proficient. This was higher than the state average for Latinos which was 41% basic and above and 16% proficient.
Both Latino and African American C.R.E.A.T.E. students outperformed the state average for White students. For example, 65% of white students were basic and above and 36% were proficient. The racial achievement gap was therefore closed by the C.R.E.A.T.E. students.

Finally, the C.R.E.A.T.E. students closed the achievement gap in terms of income level. Ninety-nine of West High School students receive free or reduced lunch. For low income students in the state, the average performance on the algebra CST was 25% basic and above and only 17% met the proficient level. For economically advantaged students in the state the average was 27% basic and above and 35% proficient. The C.R.E.A.T.E. students had an average of 34% basic and above and 37% proficient and above. Therefore, the C.R.E.A.T.E. students exceeded the performance of similar low income populations and also economically advantaged students throughout the state. By the end of the 2008-2009 school year, the SDC class and the general population taught by the author using the C.R.E.A.T.E. model at West High School had shocked the entire community and educators throughout the district. How could the Special Day Class in particular have done so well and outperformed thousands of other students in the district on every exam they were not supposed to take? How could the general population at West High School exceed the state average and close the achievement gap in terms of ethnicity and income? Moreover, could the success seen in the author’s class using C.R.E.A.T.E. be replicable in other classrooms?
Figure 7. CST Algebra I by Ethnicity, 2009: Percent Basic and Proficient.
Purpose of the Study

This project focused on documenting the impact C.R.E.A.T.E. could have on the results other math teachers experienced with their students in foundational math classrooms, specifically, algebra and geometry. The purpose of this study was to examine if the implementation of C.R.E.A.T.E. in other teachers’ classrooms at West High School resulted in a majority of low income and underperforming students succeeding on district and statewide math assessments in algebra I and geometry. The issue of whether the success in using C.R.E.A.T.E. can be replicated has been a
question that many educators have already posed at many math conferences. The documentation of strategies and results from the implementation of C.R.E.A.T.E. may provide evidence for administrators at the district and state level to determine if the C.R.E.A.T.E. model should be implemented as a solution to the pressing crisis of failure in math for diverse urban populations.

Research Questions

1. What was the difference between the percent of students who achieve basic and above on the district semester final exam for the teachers in the traditional control group of fall semester of 2008 and in the experimental group that uses the C.R.E.A.T.E. instructional model in the fall semester of 2009?

2. What was the difference between the grade point average reflecting the grade distribution given to students by teachers in the control group during fall 2008 and the grade point average for the experimental group of C.R.E.A.T.E teachers during the fall 2009?

Definition of Terms

The following definitions are provided to ensure uniformity and understanding of these terms throughout the study.

_Achievement Gap_: Gap in academic performance between urban students of color and white and Asian students.

_Assess and Re-Teach_: Assessment results should drive instruction and re-teaching key concepts that students may have missed.
Assessment Driven Instruction: Instruction that is based on addressing concepts that assessments reveal as being area of weakness for students

C.R.E.A.T.E.

C = Culturally Responsive Teaching
R = Rigorous & Rewarding Expectations
E= Essential Curriculum
A= Assess and Re-Teach
T= Test Taking models/strategies
E= Extra One-on-One Intervention

Culturally Responsive Teaching: Teaching that values and incorporates the language, music, history, sports, games, and other interests of the students. It also incorporates learning styles such as “call and response” that most appeal and engage students.

Essential Curriculum: Curriculum that focuses on the most essential concepts that are included in the standards and emphasized on standardized tests.

Extra One on One Tutoring: One on one individualized tutoring that teacher provides for students who needs more practice with key concepts.

Incentives/Rewards: Positive reinforcers of desired behavior that must be tangible or visible and frequent in order to be effective.

Positive Reinforcement: Positive Reinforcement gives children positive goals to work towards instead of only focusing on negative consequences to avoid.
Rigorous Expectations

1. Expectations the teacher has for himself or herself in making sure students succeed.

2. Expectations teachers have for students that support and motivate them to succeed.

Testing Models: Teachers exposing students to the model of test questions that will see on a standardized test.

Limitations

It is critical that the reader is aware of the limitations of the study and understands some of the inherent problems encountered by the researcher. It is also important for the researcher to design and conduct the study in a manner that contributes to the field of education findings and results that are valid and useful.

1. Due to the relatively small sample of math teachers available for the study, results may not be generalizable beyond the specific population from which the sample was drawn.

2. Due to the issues that may have impacted the researcher’s ability to motivate teachers and hold them accountable for implementing the C.R.E.A.T.E. model, results may not fully depict the potential impact of C.R.E.A.T.E. on teachers and their success rates with students in math.

3. Due to the student population in fall 2009 being different from fall 2008, the results portraying the potential impact of C.R.E.A.T.E. may be skewed by variables such as different skill level between the two groups of students.
Assumptions

1. It assumed that teachers in the sample are sincerely dedicated to getting more students to succeed in mathematics.

2. It is assumed that the leadership at West High School will support the instructional model and help C.R.E.A.T.E. accountability for staff implementing it in the classroom.

3. It is assumed that the structural factors at West High School such as resources and school culture will be similar for the fall semester 2008 and the fall semester of 2009 and therefore will not significantly skew any of the data reflecting student achievement for both the traditional control (Fall 2008) and experimental C.R.E.A.T.E. groups (Fall 2009).

4. It is assumed that the student population in terms of skill in mathematics at West High School will be similar for the fall semester 2008 and the fall semester of 2009 and therefore will not significantly skew any of the data reflecting student achievement for both the traditional control (Fall 2008) and experimental C.R.E.A.T.E. groups (Fall 2009).

Organization of the Study

Chapter 1 has presented the introduction, statement of the problem, background of the study, purpose of the study, research questions, definition of terms, limitations and assumptions of the study. Chapter 2 contains the review of related literature and research related to the problem being investigated. The methodology and procedures used to gather data for the study are presented in Chapter 3. The results of
analyses and findings to emerge from the study are contained in Chapter 4. Chapter 5 contains a summary of the study and findings, conclusions drawn from the findings, a discussion, and recommendations for further study.
Chapter 2

LITERATURE REVIEW

Chapter 2 provides an extensive review of the literature and research related to the underlying principles of the C.R.E.A.T.E instructional model and the factors that may affect the implementation of the model by foundational math teachers at West High School. The first section outlines the existing algebra curriculum and intended mode of math instruction at West High School. The next section addresses the significance of increasing urban student success in mathematics. The third section examines the factors that may influence urban students’ engagement and performance in the classroom. This section examines various perspectives revolving around the issue of urban failure in math and school in general. It begins with a body of research that supports the notion that the teacher and the quality of instruction have the greatest impact on student success. These scholars argue that the instruction in the classroom can be more powerful than low socioeconomic background in its effect on student achievement. Moreover, they present research that reveals the unequal distribution of highly qualified teachers and the disproportionate number of credentialed math teachers who serve low-income urban students. A lack of teacher quality is cited as the major trigger of urban student failure in mathematics. The research on the significance of teacher quality is especially important because it is the underlying principle that justifies the C.R.E.A.T.E. model which is the central focus of the study.

The section that follows the research on the importance of teacher quality brings to light studies that argue that teacher effectiveness is not the most important
determinant of urban student success. These researchers say that external factors such as structural inequities within the educational system, tracking, societal stereotypes, and low socioeconomic status have a greater effect on student success than teachers. While they agree that external factors are the most significant cause of the urban crisis of failure in math, they disagree on which external factor is the most important to address. They feel differently about which external factor merits the most attention and resources in order to transform the educational experience of urban students. The sixth section provides an extensive study of the six elements of the C.R.E.A.T.E. model that has been a driving force behind the success students in the author’s classes have experienced in algebra. The major focus of the literature review presented in this section will be on culturally responsive instruction, rigorous and rewarding expectations, and assessment driven instruction because these are the three very significant aspects of the model. Previous research has shown that the factor that has the greatest impact on student achievement is the effectiveness of the classroom teacher. Therefore, the final section will examine the impact of professional development for teachers and factors that affect the successful implementation of instructional models in the classroom.

I. The Existing Algebra Curriculum and Intended Mode of Algebra Instruction at West High School - An Urban California Public High School

The curriculum documents at West High School must articulate with the algebra standards mandated by the California Department of Education. The algebra standards are the same for all students in California who are taking algebra. The
curriculum documents should include the learning outcomes for students, content that needs to be taught, pedagogies used to teach students, and assessment strategies.

*Learning Outcomes*

The learning outcomes for the students are outlined by the California Department of Education. The outcomes are organized by different algebra standards. These standards include “properties of real numbers,” “solving linear equations,” and “graphing equations.” Each standard has objectives or expected outcomes for students. For the standard that relates to solving equations, there is an objective that states that students should be able to “solve one step equations.” There is another objective under solving equations that says students should be able to “use the quadratic formula and use it to find roots and solve quadratic equations.” Under graphing, there is an expected outcome for students to be able to “graph linear equations and horizontal and vertical lines.” In general, students who have mastered the concepts should be able to demonstrate 80% proficiency or more. Therefore, the expected learning outcome for “solving one-step equations” would be that students could correctly answer 8 out of 10 questions that were on the topic.

*Content*

The content is organized by different algebra standards. There are 25 different standards for algebra such as solving equations, factoring polynomials, graphing, and exponents. There are several chapters in the textbook dedicated to each standard. In every chapter, there are several lessons. For each lesson in each chapter, there is a standard from the Department of Education stated next to it. Several lessons have
more than one standard that relate to it. This means that that concept is a key concept since several standards are related to it. For example, the lesson on “solving multi-step equations” is related to standards 3, 4, and 15.

Pedagogy

The algebra curriculum in the textbook is presented in a way that helps the teacher to deliver the content. Each chapter is tied to a certain standard for algebra, but there may be several chapters that are related to the same standard. In every chapter, there are several lessons. Each lesson in a chapter begins with a preview section on “what is the lesson about.” This is the section where the teacher previews the lesson so the students can slowly become familiar with the content. The preview section of each lesson contains a brief introduction that allows students to see the relevance of the content to the real world. Many times, there will be a historical allusion to some event in the past where the math concept was used. For example, the lesson on slope contains a reference to Andrew Hallidie, who in 1870 used the concept of slope to design the first cable car system. Slope simply represents the steepness of a road or hill and is calculated by measuring the ratio of rise/run. To design a transportation system, Hallidie needed a mathematical way to describe and measure the steepness of a hill. After previewing the slope, the teacher gives a readiness quiz to see how prepared the students are for that section. The problems and concepts in this section test skills that will be essential for the content presented in the lesson.

Following the preview section, the lesson begins with the actual new content. There are several examples in every lesson that demonstrate each concept and mini
concept that make up that lesson. Each example asks the student to try the problem and then presents how to get the solution. Some examples have “study tips” on the side of the page that may help the student to grasp the concept even easier. After the examples are presented, there is a section called “guided practice” where the teacher presents a few problems reflecting the content covered, and the teacher is supposed to guide or help the students to do those problems. The problems in the guided practice section test if the students have learned the vocabulary and the skills that were essential. Finally, the teacher is supposed to allow students to do “practice” problems so they can independently do the problems. Therefore, the pedagogical model is closely related to the Explicit Direct Instruction (E.D.I.) model where the teacher previews the content, provides direct instruction, checks for understanding, provides guided practice, and then allows the students to do independent practice.

Assessment

The algebra curriculum at West requires that teachers do frequent assessments of student learning. Every day teachers are supposed to assess formally or informally if their students are learning. This could be through simple question and answer sessions. Students could be asked to do problems on the board. Homework and class work are examples of assessments that are not formal. Games like Jeopardy can also be used to get an idea if the students are learning. There is much more emphasis on formative assessments such as tests and quizzes. Every week teachers are given a formative weekly assessment or quiz that covers the information that was presented during that week. Every two weeks there is a chapter test that tests the content
presented in the entire chapter. Furthermore, there are quarterly assessments that are also given. There are 4 quarters of 9 weeks each during the school year. After each 9 week period, there is a quarterly exam that the entire district must take. The teacher in each school must submit this data from the quarterly exams and then the algebra departments in each school analyze the results. These quarterly exams carry a great deal of value and can be seen like a midterm. The end of the first semester is when the second quarterly or “semester final” is given and the year end final exam is given during the last quarter of the school year in June. These are all examples of standardized formal assessments. The statewide formal assessment is the California Standardized Testing (CST) exam given in April and that tests if the students understand the major standards of algebra. The performance of the students is categorized as advanced, proficient, basis, below basic, and far below basic. Almost 80% of West students are below basic in algebra.

**Curriculum Organization**

The pedagogical model that the administration supports is called Explicit Direct Instruction (E.D.I.). This model asks teachers to preview concepts before they teach them. It says teachers must present content through direct instruction with examples that demonstrate the different concepts. The teacher must also check for understanding throughout instruction by randomly choosing students to answer questions. Then there must be guided practice where the students do the problems and the teacher helps them. After the guided practice, the teacher allows the students to do independent practice where they try the problems on their own. Finally there should be
some type of assessment at the end to see if the students made progress in their learning.

II. Significance of Increasing Urban Student Success in Mathematics

Influential policy makers including California Governor Arnold Schwarzenegger have declared math is the “gateway” to college and higher-paying careers (Tucker, 2008). Research by the U.S. Department of Education explains how of all the high school courses, the highest level of mathematics taken is the most important for college success (Adelman, 1999). Bob Moses, a civil rights activist and founder of the Algebra Project, has said that the most urgent social issue affecting poor people and people of color today is economic access. He also says that economic access and full citizenship depend crucially on math literacy (Cobb & Moses, 2001). Moses argues that algebra is the “modern day civil right” for minorities because it opens doors to many career-related degrees and vocational programs (Wilgoren, 2001). Furthermore, the U.S. Department of Education also states that the odds that a student who enters college will complete a bachelor’s degree more than doubles if that student completed a mathematics course beyond Algebra II (e.g., trigonometry or pre-calculus) while in high school (Adelman, 1999). Therefore, success in foundational math is the ticket to higher education.

Although more students are taking Algebra I and higher math classes than five years ago, the low achievement levels in these college prep courses for Latino and African American students is alarming. This is seen in the fact that in algebra I, geometry, and algebra II, Latino and African-American students attain proficiency at
less than half the rate of White and Asian students and more than two-thirds of them perform at a below basic level (Education Trust, 2008). Minorities are overrepresented in low-level math courses and are underrepresented in higher-level math courses. Nearly 9% of Hispanic students and 10% of black students complete math credits at the advanced algebra level or higher, but these completion rates pale in comparison to the rates of 22% and 43% for white and Asian students, respectively (Rose & Betts, 2001). Students whose highest levels of mathematics in high school were trigonometry, pre-calculus, or calculus-level courses had bachelor’s degree completion rates above 60% (Tierney, Colyar, & Corwin, 2003). For students who completed a calculus course in high school, the bachelor’s degree completion rate was 83% (National Center for Education Statistics [NCES], 2003). Therefore, enrollment in algebra and higher math courses are highly correlated with higher educational attainment.

While research has shown that algebra is the gateway to college, there are also studies that highlight the link between success in higher math courses such as algebra and cognitive abilities and income level. Students who take more-advanced math classes learn skills that may be directly applicable to certain jobs. They may also learn logic and reasoning skills that indirectly make them more productive. Skills acquired through learning advanced math may also teach students how to learn, so that once they are on the job, they are promoted to more demanding and more highly paid positions than those who have acquired fewer “learning skills” (Rose & Betts, 2001). Students who take more-advanced math courses during high school tended to obtain
markedly higher levels of education, and a decade after graduation, earn significantly more than those who took only lower-level courses (Rose & Betts, 2001). Research from the Public Policy Institute of California indicate that students who complete algebra and geometry will as a result of gained skills and educational opportunities earn a salary that is 17.3% higher than those students who do not complete those courses. Therefore, the reality that algebra is the “gateway” course that opens opportunities and prepares high school students for both postsecondary education and the labor market indicates the need for educators to increase the percentage of students who successfully complete algebra and higher math courses.

III. Why Are Urban Students Performing Poorly?

The State of Disengagement in Urban Classrooms

The previous section has discussed the existing algebra curriculum and intended or traditional mode of instruction. This section will look into issues of engagement that affect urban student performance in mathematics. Research shows that there is a strong relationship between school engagement and academic success and retention. Some scholars suggest that a lower level of engagement is at least in part responsible for the achievement gap between White and African American students. Research shows that positive student engagement is critical in enhancing student achievement (Akey, 2006). Akey argues that engaged students are more likely to perform well academically. Therefore, teachers need a large inventory of instructional strategies to engage a variety of students (Akey, 2006).
Laurence Steinberg, a well known professor who studies psychology and child behavior, says that more students today care less about school than in the past making the classroom teacher's job much harder (Steinberg, 1996). He explains that the key to understanding the plight of urban education lies in the concept of engagement. When highly engaged students are in class, they are there emotionally as well as physically. They concentrate on the task at hand, they strive to do their best when tested or called upon, and when they are given homework or other outside assignments, they do them on time and in good faith. When disengaged students are in school, they are clearly just going through the motions. The disinterest in school is a major problem that particularly plagues urban Latino and African American youth, says Steinberg. Steinberg and his colleagues suggest that “getting by” without showing off is the dominant mode of thinking among teens of all groups -except Asians. Students recognize that there is a “trouble threshold” for academic performance and grades. If they fall below the threshold they can expect sanctions from parents. For Asians it was A-, for Whites it was between a B and a C, and for Blacks and Latinos it was a C-. It is disturbing that Steinberg concludes that for Black and Latino students, parental efforts in the home to encourage achievement may be overpowered by peer group values antithetical to achievement. Therefore, Steinberg argues that as a result of several factors including peer pressure, internalized disinterest towards school many African American and Latino urban students are not engaged in the classroom (Steinberg, 1996).
The lack of engagement and learning is a major problem in urban schools where the population is mostly African American and Hispanic students (Meece, 2001). The disengagement in the classroom is a major factor that leads to African American and Hispanic students disproportionately accounting for high rates of academic failure and disciplinary action such as non promotions, special education placements, suspensions, and expulsions resulting from misbehavior in school (Meece, 2001). When students are not interested in what they are doing, there is a higher probability that they will engage in disruptive and even dangerous types of behaviors such as fighting. Furthermore, several observers of American high schools have reported that urban high school teachers routinely forge implicit treaties with their students in which academic demands are lowered in exchange for students’ compliance with norms of conduct in the classroom (Meece, 2001). Teachers agree not to challenge students’ intellect if students agree not to challenge teachers’ authority (Meece, 2001). This means that teachers lower their expectations in order to manage the classroom conduct thus discouraging their students from fulfilling their academic potential. Also, 55% of high school students admit to cheating (Meece, 2001). Practices such as copying homework are so commonplace that students do not regard them as cheating (Meece, 2001). Thus, students are more motivated to use any means, even cheating, to get an assignment done than actually learning their material and doing the assignment themselves.

The theory that disengagement is a critical issue plaguing urban student success is also voiced by Frederick H. Jones, who is the director of the Classroom
Management Training Program that develops and promotes procedures for improving teacher effectiveness (Jones, 2000). His model is based on extensive observation of classroom teachers and student behavior. Jones says that about 50% of classroom time is lost due to student misbehavior and being off task. 80% of lost time is due to talking without permission. Nineteen percent is lost to daydreaming, students being out of their seat, making noises, etc. One percent is lost to more serious misbehavior (Jones, 2000). The role of the teacher tied to the disengagement and poor performance of students will be further explored in another section.

**Quality of Curriculum and Instruction**

A major factor that research shows affects urban student performance in the classroom is a cultural gap between teachers and children of color which causes missed opportunities for learning (Delpit, 1995). Lisa Delpit, an internationally recognized educator, says that if educators do not have some knowledge of children’s lives outside of the realms of paper-and-pencil work, and even outside of their classrooms, then they cannot know their strengths (Delpit 1995). She explains that teachers in urban schools are not creative enough to find ways to engage young students of color in urban classrooms. Teachers need to reflect on why they chose the profession of teaching urban youth. If they are really there to help the youth, they must develop innovative methods of teaching to engage these youth. In order to bridge the cultural gap between educators and students of color, teachers must create a curriculum and pedagogy that is relevant, engaging and that liberates students of color (Delpit, 2005). Too many teachers in inner city schools are competent and current
regarding effective teaching methodologies and materials but do not understand the “conditions” that underlie a student’s potential for learning. Many teachers do not try to get their students to activate their background knowledge to help them make sense of text (Noguera, 2003). Teachers themselves lack sufficient knowledge about the text of their students’ daily lives. The cultural gap can also be seen as the lack of “two way” background knowledge between teachers and students of color (Delpit, 2005).

Furthermore, Yvette Jackson, the Executive Director of the National Urban Alliance for Effective Education, shows how the culture gap between educators, the curriculum, and African American students adversely affects their motivation. She claims that African American students crave experiences that build confidence in their ability, challenge them, and build relationships that activate their desire to learn. When teachers are unable to make links to cultural referents of students, an “affective filter” develops and students do not make connections, become unmotivated and do not identify with the teacher (Jackson, 2005, p. 204).

IV. The Importance of the Teacher

What is a Highly Qualified Teacher?

Before examining the research on the importance of effective teaching in urban schools, it is critical to examine what defines a highly qualified teacher. The No Child Left Behind (NCLB) Act mandates that all teachers must be “highly qualified,” which means they will need to (a) have a 4-year college degree; (b) have a full state teaching license; and (c) show that they know the subject they are teaching, either by majoring in that subject in college or by passing a rigorous subject matter test or other state-
mandated evaluation (Education Trust, 2003). In California, becoming a math teacher of algebra I, geometry, or algebra II requires that students major in math or take a substantial body of college-level math coursework or pass the foundational level math credential exam (CSET I and II), as well as complete credentialing requirements. While most stakeholders agree that highly qualified teachers have to gain a teaching credential, demonstrate expertise of their subject area through either their college major or by passing a subject-specific teacher licensing test, research shows that a simple credential does not imply that teacher will necessarily be effective in an urban setting. Economist Eric Hanushek has shown in his research that a credential does not guarantee that a teacher has the ability to differentiate teaching practices for different populations, cultural competence or the communication ability that significantly contribute to the students' achievement. He shows that while math teacher certification tends to have a positive effect on math achievement, it is inconclusive (Hanushek, 2003). Some researchers contend that there is insufficient empirical evidence to claim that having teacher certification results in better teaching and higher student achievement (Hanushek, 2003). The argument that credentials do not completely measure teacher effectiveness is also made by Education Trust. This is an organization that works for the high academic achievement of all students at all levels, pre-kindergarten through college, and strives to close the achievement gaps that separate low-income students and students of color from other youth. Their basic tenet is that all children will learn at high levels when they are taught to high levels. Education Trust puts forth that instead of measuring which teachers are most successful with
their students, school districts give too much weight to “proxy measures like experience, education, licensure scores, etc.” (Education Trust, 2003).

In the long run, to ensure that every student has an effective teacher, Education Trust suggests that policymakers move from insisting simply on high qualifications to insisting on high quality that is seen in student progress (Education Trust, 2003). The study by Education Trust discusses a system used in Tennessee that measures teacher effectiveness by calculating the amount students learn from the beginning of the year to the end—the “value-added” that teachers provide. By using statistical controls for students’ learning history, the system isolates each teacher’s individual contribution to student learning. This information is being used with great success in Tennessee to help teachers identify strengths and weaknesses with different students and in different subject areas. A similar system is used in Dallas, TX, while school districts in Arizona, North Carolina, Minnesota, and other states have also recently begun using value-added teacher data. Education Trust, therefore, advocates that student progress or value-added teacher effectiveness data is the future of understanding and improving teacher quality. With such data, student achievement information can then also be further examined with reference to the certification of the teachers. It suggests that the U.S. Department of Education build on the success and best practices of these early adopters to spearhead a national effort to make value-added measures of teacher effectiveness standard information in America’s schools (Education Trust, 2003).

Unfortunately, California is years away from implementing a student-level tracking system that will allow individual student achievement to be tracked by teacher and
school. California heavily relies on subject matter tests and the other certification tests to measure the effectiveness of teachers. Thus, further exploration of the association between credentials and student achievement is still a long way off for California (Education Trust, 2003).

**Impact of a Highly Effective Teacher on Urban Student Achievement**

In Robert Marzano, Pickering, and Pollock’s (2001) *Classroom Instruction That Works*, they conclude after analyzing the achievement scores of more than 100,000 students across hundreds of schools that the factor that has the greatest impact on student achievement is the effectiveness of the classroom teacher. High performing school systems understand that the quality of instruction is a more powerful achievement variable than students’ background characteristics. The teacher is the central element of student achievement; therefore, the focus should be on what it is that the teacher can do to most impact achievement (Marzano et al., 2001). Moreover, research shows that a school’s most valuable resource and greatest investment is its teachers (Thompson, 2004). This notion is supported by numerous studies of student gains on standardized math tests from one year to another that have found that more can be done to improve education by improving the effectiveness of teachers than by any other single factor (Sanders & Horn, 1994; Wright, Horn, & Sanders, 1997). In his study, William Sanders concludes that quality instruction is the single biggest factor influencing gains in achievement, an influence many times greater than poverty or per-pupil expenditures (Sanders & Horn, 1994; Wright et al., 1997). This same argument that an effective teacher’s impact can overcome the effects of societal and institutional
factors is also made by Education Trust. Education Trust says the latest research findings confirm that teacher quality is the single most important factor in determining the success of children in school, more than race, poverty, or any other outside influence. Their research shows that urban youth who consistently have access to good teachers are soaring; those who do not are falling far behind. Moreover, the most significant solution to closing the achievement gap for poor and minority students is good teaching (Education Trust, 2003). Furthermore, the National Council of Teachers of Mathematics says that “the improvement of mathematics education for all students requires effective mathematics teaching in all classrooms” (National Council of Teachers of Mathematics, [NCTM], 2000, p. 17).

The significance of quality instruction is also echoed by Robert Slavin in his “Model of School Learning” and depicted as the most important of the four essential components necessary for a successful academic program. The quality of instruction is seen in the degree to which information or skills are presented so that students can easily learn them. Quality of instruction is largely a product of the quality of the curriculum and of the lesson presentation itself (Slavin, 1977). When instruction is high in quality, the information being presented makes sense to students, is interesting to them, is easy to remember and apply.

The importance of having a credentialed math teacher is depicted in the research that suggests a strong link between teachers’ knowledge of mathematics and student achievement (Center for the Future of Teaching and Learning [CFTL], 2008). At schools with Algebra 1 scores in the top 25% across the state, researchers found an
average of 70% of algebra instructors were "fully credentialed with a math authorization." At schools with Algebra 1 scores in the bottom 25%, however, the researchers found that on average, just 54% of algebra instructors had the full set of qualifications (CFTL, 2008). Therefore, schools performing best on algebra tests also have the highest percentage of qualified algebra teachers.

Furthermore, a 2007 report from the Education Trust shows that secondary school mathematics teachers who have a bachelor’s or master’s degree in mathematics are more likely to produce higher student achievement than their colleagues who lack such degrees (Education Trust-West, 2008). Similarly, teachers who are certified in mathematics are more likely to promote higher student mathematics test scores. The study also used data from secondary schools in North Carolina and demonstrated that a teacher’s credentials measurably affect student achievement and predict higher student achievement—particularly in algebra and geometry. In the study, teachers certified in the subject they were assigned had eight times the impact on student achievement as did reducing class size by five students (Clotfelter, Ladd, Vigdor, 2007). These meaning of these results can be seen in Linda Darling-Hammond’s research about teacher quality. Darling-Hammond, in her research, concludes that the measures of teacher preparation and certification are by far the strongest correlates of student achievement in reading and mathematics, both before and after controlling for student poverty and language status. Furthermore, measures of teacher quality are more strongly related to student achievement than to other kinds of educational
investments, such as reduced class size, overall spending on education, and teacher salaries (Darling-Hammond, 2000)

*Lack of Highly Qualified Math Teachers in Urban Schools*

Since research has indicated that teacher quality has the greatest impact on urban student success, it is critical to examine the distribution of highly qualified teacher in urban schools. Research reveals that there is shortage of highly qualified teachers in high-needs schools. Education Trust has recommended in a 2003 report to the U.S. Department of Education that the number one way to help schools raise achievement for all students and close the achievement gap is by increasing the quality of teachers. Yet, according to a study done by the Education Trust in 2006, urban schools with high rates of poverty and large populations of minority students have fewer highly qualified teachers than more advantaged, low-needs schools (Education Trust, 2003). The study argues that despite all that is known about the impact of teachers, low-income students and students of color continue to be taught disproportionately by the least experienced, least well-educated teachers and by teachers who fail to meet their state’s licensure and certification standards. Simply put, Education Trust says, those students who rely on public schools the most are consistently given the least (Education Trust, 2003).

Also data compiled by the National Center for Education Statistics (NCES) shows that newly hired teachers in high poverty central city schools are far more likely to be beginning teachers than transfers (Chester, Offenberg, & Xu, 2001) Moreover, Education Trust finds that states with rapidly growing minority populations, such as
California, Texas, North Carolina, and Florida, are experiencing chronic shortages, especially to meet the challenges of their increasing numbers of students of color. According to a 2000 report by the Council of Great City Schools on teachers in the largest urban districts in the nation, nearly 98% of responding districts reported an immediate demand for mathematics teachers (Urban Teacher Collaborative, 2000). Furthermore, the shortage of highly qualified math teachers and the implications are especially significant to consider in urban schools in California where policymakers have recently passed legislation mandating Algebra 1 for all eighth-graders within three years.

A study released by the Center for the Future of Teaching & Learning in 2008, a Santa Cruz think tank, finds that of the 3,757 instructors teaching middle-school algebra in public schools across the California, one-third - 1,277 - lack a full teaching credential with a math authorization (CFTL, 2008). Nearly a quarter of the algebra teachers have a full teaching credential but are not authorized to teach math. Another quarter of the algebra teachers have no credential at all. The teacher shortage in math also affects high schools in California where more than 2,700 teachers assigned to teach mathematics are teaching out of their field of expertise or have not yet completed requirements for a teaching credential. This means that more than 20% of high school math teachers are underprepared or teaching out-of-field. The state may need more than 33,000 new math and science teachers – two of the toughest categories to fill – at the middle and high school levels in the next decade. At least 3,000 new teachers will be needed within three years to teach eighth-grade algebra. In addition,
another 1,000 current teachers of eighth-grade algebra are either underprepared or teaching "out-of-field" and will need further training. The number of middle school students enrolled in Algebra I classes in which the teacher is either underprepared or assigned “out-of-field” has risen from 73,000 in 2004 to more than 74,000 in 2007 (CFTL, 2008). Furthermore, those instructors, who lack math credentials, are also more likely to be teaching in the lowest-scoring schools. The lowest-performing middle and high schools have three to four times the percentages of mathematics and science teachers without full credentials as those schools that are among the best-performing. For example, a study of California’s middle and high schools shows that schools with the highest proportion of students of color are four times as likely to have underprepared mathematics teachers as the least diverse schools. Referring to the teacher shortage in a recent speech, the U.S. secretary of education, Richard Riley describes the shortage as so severe that some schools have been forced to put any “warm body” in front of the classroom (Urban Teacher Collaborative, 2000).

*The Impact of Ineffective Teachers in Urban Schools*

Another reason why teacher quality is significant to consider is that the impact of an ineffective teacher lingers over time. Research by Thompson and O’Quinn, (2001) concludes that the effects of even a single ineffective teacher are enduring enough to be measurable at least four years later. Thompson and O’Quinn (2001) also reveal that the achievement gap widens each year between students with most effective teachers and those with least effective teachers. This effect is particularly strong among students from low-income families and African American students.
Good teachers in subsequent grades boost achievement, but not enough to compensate for the effects of an earlier ineffective teacher (Education Trust, 2003). The benefits associated with being taught by good teachers are cumulative. This suggests that the most significant gains in student achievement will likely be realized when students receive instruction from good teachers over consecutive years. In 1996, Professor William Sanders and Rivers of the University of Tennessee demonstrated that the single most dominant factor affecting student academic gain is teacher effect (Sanders & Rivers, 1996). They found that a student who had three consecutive years of poor teaching could lag academically by more than 50 percentile points behind his peers who had received good teaching. In Boston, students assigned to the most-effective teachers for a year showed 18 times greater gains in reading and nearly 16 times greater gains in math than students assigned to the least-effective teachers. In Dallas, Texas, and the state of Tennessee, students assigned for three consecutive years to very effective teachers scored 50 percentile points better than students assigned for three years to very ineffective teachers. Therefore, it appears imperative that teacher quality is considered in the efforts to increase urban student achievement in mathematics.

Finally, it is important to discuss the feasibility of recruiting more highly qualified math teachers in urban schools. The 2003 study by Education Trust discusses how many policy makers may feel that the goal of having an entire staff of highly qualified teachers is unrealistic. The study goes on to show how some districts have dispelled the myth that getting better teachers is an unattainable goal. For example, the
Texas A&M University System responded to state goals for dramatic improvement in producing teachers by meeting them, then setting its own higher goals. The total number of new teaching candidates it produced that passed the state certification test increased by 20% from 2000 to 2002, while the number of African-American teacher candidates increased by 116% and the number of bilingual/ESL candidates jumped by 84%. The number of new teacher candidates also increased by 64% in special education, 41% in math, and 34% in science. And despite an increase of hundreds of new teaching candidates, the pass rate on the state licensure exam did not decline. This shows that it’s possible to raise the quantity of teachers enhance and maintain standards of teacher quality (Education Trust, 2003).

V. The Other Side: Teacher Quality is Not the Major Factor in Urban Student Success

*External Factors*

While there has been a great deal of research indicating that a high quality teacher can have the greatest impact on urban student performance, there are also studies that reject this notion and instead show that there are a number of external factors that cannot be addressed through the educational environment. There are many scholars who feel the environmental, societal and institutional factors within the educational system have a deleterious effect that trumps anything improved teacher quality can do. They say that teachers can only do so much within the classroom. Their efforts may be remarkable but still could come up short as a result of the external factors that affect student performance in school. Issues such as the disengagement of urban youth explained by Meece (2001), some researchers say, are
not the major problem. Moreover, policy should not focus so much on teacher quality and cultural competence that has been advocated by Marzano and other scholars. Those people who disagree with Marzano’s theory that factors inside the classroom such as student engagement and teacher quality have the greatest impact on student achievement are discussed in the following section.

**Structural Inequities**

Many scholars such as nationally recognized author, Jonathan Kozol, feel that educational inequity seen in poor school funding and a lack of resources for urban students and minority students in general is the most significant cause of their poor performance in math and other subject areas (Kozol, 2005). The structural inequities, Kozol says, have a more harmful impact on urban student success than teacher quality or culturally relevant curriculum. Kozol explains how students living in inner city and rural areas where school resources are limited exhibit lower educational achievement and a higher likelihood of dropping out of high school than do their suburban counterparts. He is critical of educational research and policy that tends to neglect these inequalities. These resource inequalities translate into important educational investments at both family and school levels, and help explain deficits in attainment and standardized achievement. Urban African American and Latino students tend to come from low-income households, meaning minority students are more likely to attend poorly funded schools based on the districting patterns within the school system.
Kozol (2005) reveals the poor conditions and state of disrepair many urban schools are now in. The physical appearance of these schools negatively impacts the students desire to be in school and the way that they feel while they are present. In Oklahoma City, for example, the schools are overcrowded, lined with insufficient trailers that are not heated or cooled and often leak. He further portrays how in some schools in California, the overcrowding is so severe that students have to attend schools in monthly shifts year round. Some schools lack even the basic supplies such as text books, chairs, and desks for their students. Many students do not even attempt to eat lunch because the cafeteria is so overcrowded and the lines are so long. This lack of space and resources takes a toll on the variety and quality of courses that are offered. In his book, *The Shame of the Nation*, he recounts an experience with one inner city African American student who describes her desire to go to college and take high level classes, but without the teachers or space, she must instead take the courses already offered such as sewing and hair braiding (Kozol, 2005). 

Kozol (2005) also demonstrates that the educational deficit between white suburban and minority urban populations starts before formal education begins. A vast majority of the under-served minority population is not able to gain access to preschool educational opportunities. Even federally funded programs, such as Head Start, are unable to meet the demand. In New York City, 40% of those qualified for Head Start were denied in 2001. In addition, the amount spent per child during the school year is significantly different. In New York City the average is $8,000, while
suburban schools spent upwards of $18,000. This can have a negative impact on state testing, which can start as early as the third grade (Kozol, 2005).

**Tracking**

Another form of structural inequity that has been portrayed as having a more significant impact than the quality of teaching is tracking of minority students. According to Jeannie Oakes, Wells, Jones, and Datnow, low-track classes tend to be primarily composed of low-income students, usually minorities, while upper-track classes are usually dominated by students from socioeconomically successful groups (Oakes et al., 1997). They go on to say that as a result of schools placing emphasis on socioeconomic status and cultural capital, minority students are vastly over-represented in lower educational tracks. Latino and African American students are often wrongly placed into lower tracks based on teachers’ and administrators’ expectations for minority students. Oakes views this expectation of a race within school systems as a form of institutional racism. The tracking system, she says can be compared to a modern form of racial segregation within the schools. Jeannie Oakes theorizes that the disproportionate placement of poor and minority students into low tracks does not reflect their actual learning abilities. This means that urban minority youth may be at risk of being placed in lower level math classes from an early age which may affect their chances at succeeding in higher math classes (Oakes et al., 1997).

Studies on tracking groups within schools have also proven to be detrimental for minority students (Gamoran, 1992). In addition to the unequal placement of
students into tracks, there is evidence to support the assertion that the appointment of teachers to classes is disproportionate. The most-experienced, highest-status teachers are often assigned to teach high-track classes, whereas less-experienced teachers are usually assigned to low-track classes. Teachers of the high-track courses were found to be more enthusiastic in teaching, better at providing explanations, and more organized than teachers of low-track courses (Oakes, 1997).

Scholars have also found that curricula often vary widely among tracks, as might be expected (Oakes, 1997). Lessons taught in low-track classes often lack the engagement and comprehensiveness of the high-track lessons, reflecting their more remedial nature. This can put low-track students at a disadvantage for college acceptance because they often do not gain the knowledge and skills of the upper-track students, presuming they could and would if not taught under a tracked system. Oakes found that in high-track classes, teachers often used course materials and taught concepts which required extensive critical-thinking skills, whereas teachers in low-track classes tended to draw heavily from workbooks and rarely assign work that required critical thinking (Oakes, 1997). In general, curricula of high-track math courses are much more intensive and in-depth than those of low-track courses, as would be expected (Spade, Columba, & Vanfossen, 1997). Teachers reported spending less time addressing disciplinary issues in high-track classrooms than in low-track classes. The connection between low-track students and perceived behavioral concerns has been reported frequently. Teachers in these instances often suggest that more time is required to promote proper student behavior over the development of
critical thinking and independent learning. Therefore, inexperienced teachers are more likely to be assigned to lower level math classes where minority students are often placed in. This disproportionate placement of beginning teachers into classrooms where much of the population is below grade level and of color may have harmful implications to the success these students have in more rigorous math such as algebra II.

Some studies also suggest that tracking can influence students’ peer groups and attitudes regarding other students. Gamoran’s study shows that students are more likely to form friendships with other students in the same tracks than students outside of their tracks. Since low-class and minority students are overrepresented in low tracks with Whites and Asians generally dominating high tracks, interaction among these groups can be discouraged by tracking (Gamoran, 1992). Tracking can also result in a stigmatization of low-track students. In some cases, this stigmatization is thought to have a negative impact on students’ academic performance and to influence students’ attitudes. In one study, it was found that, among low-achieving students, students in tracked classes were more likely than students in non-tracked classes to believe that “their fate was out of their hands.”

**Societal Expectations and Stereotypes**

Although many researchers have pointed to teacher quality and structural inequities being the major problems in urban education, others feel that societal expectations have an even more profound impact on urban youth. A significant factor that affects the motivation of urban students of color to perform well academically is
the negative self perceptions that urban students of color have internalized about their academic potential and destiny and that are reinforced by many facets of society such as the media. The media are a critical part of the formation of the “habitus” that influences the attitude of young people of color (Merchant, 2004). For example, through its overwhelming focus on crime, drug abuse, gang violence and other disruptive behavior among blacks, the media have fostered a distorted public perception of blacks (Merchant, 2004). Media have stereotyped young black males as thugs, gangsters, or drug dealers. This stereotype has continued to adversely affect the motivation of black students in school in several ways (Merchant, 2004). In the media, the use of violence and the outlaw attitude are glamorized as a part of being black (Gray, 2005). Many children now imitate the dress, dialect and violence associated with the “gangsta” lifestyle portrayed in the currently popular, “in the hood” movie genre (Gray, 2005, p.2). In these films, violence is used as a means of solving problems, sometimes without repercussions, and is often glorified. Mothers are on welfare, fathers are unemployed, drunkards, or absent altogether. Many studies have documented the time children spend in front of the television (Gray, 2005). The Washington Post of June 23, 1996 reported that nearly one of two black fourth graders said they watched six hours or more of television daily, according to the National Center of Education Statistics, the research arm of the U.S Department of Education (Gray, 2005).
Partly as a result of the society’s portrayal of blacks through the media, much of society lives with the belief that black kids cannot and are not supposed to do well in school. A more devastating effect of the media’s portrayal of blacks is the internalization of the negative images by black youth (Gray, 2005). The term “self-fulfilling prophecy” was first coined by the great sociologist Robert Merton to refer to a false belief or definition of a social situation, which, because one believes it and one acts upon it, actually manifests itself as a truth, further strengthening the belief (Foster 2005). Once negative expectations are internalized it can lead to a whole round of life-interactions that reinforce the expectations, and result in self-fulfilling prophesies of a diminished capacity. Here, aspects of Black consciousness and humanity are distorted to conform to stereotyped expectations associate with a particular spoiled identity, or “stigmatized Black self” (Foster, 2005, p. 2) The result is the relegation to and the embrace of “pariah worlds” consisting of dysfunctional, crime-prone, drug-invested, outlaw cultures (Foster, 2005, p. 2). This negative behavior and lack of interest in school can be seen in the behavior of many urban students of color. Many of them do not feel pride in doing well in school because they have become victims of society’s stereotypes that instead glamorize the academically incapable, criminal image of African Americans. They are expected to live the image of the student “posting on the block,” cutting classes, “sagging” pants, defying authority figures, and receiving grades that are barely passing. They are victims of the self-fulfilling prophecy because they live out the stereotype that has been constructed for them (Foster, 2005).
Acting White

Roland Fryer, a professor of economics at Harvard University, has raised the issue that urban youth of color have to confront the notion that they are “selling out” or “acting white” if they succeed in school (Fryer & Levitt, 2004). President Barack Obama echoed this theory when he stated that children cannot achieve unless people raise their expectations and turn off the television sets and eradicate the slander that says a black youth with a book is acting white (Fryer & Levitt, 2004). In 1986, John Ogbu co-authored, along with Signithia Fordham, a study which concluded that some African American students in a Washington, D.C. high school did not live up to their academic potential because of the fear of being accused of "acting white". In his 2003 book *Black American Students in an Affluent Suburb: A Study of Academic Disengagement*, he concluded that these students' cultural attitudes hindered their own academic achievement and that these attitudes are too often neglected by parents, educators and/or policymakers (Fryer & Levitt, 2004).

Fryer also explains that the popularity of white students increases as their grades increase. For black and Hispanic students, there is a drop-off in popularity for those students with higher GPAs. Fryer calculates that a black student who earns straight "A" grades will have 1.5 fewer friends from his ethnic group than a white student. Therefore, selling out or losing popularity among peers is the social price paid by urban minorities who want to achieve in school (Fryer & Levitt, 2004).

The impact of peer influence on urban student achievement has also been explored by the Public Policy Institute of California (PPIC) (Betts, 2003). This body
of research finds that students’ peers have a stronger effect on their achievement than the qualifications of their teachers or the size of their classes. Using individual student-level data, rather than the grade-level data contained in the statewide data typically employed in such studies, the report draws into question whether some of the most highly valued school resources and teacher quality are really the primary determinants of student success. Conducted in collaboration with the San Diego Unified School District (SDUSD), the study analyzes gains in reading and math scores during the 1997-1998 through 1999-2000 school years, and finds that students made much greater gains in years when peers in their grade earned high scores on state standardized tests. The report finds, for example, that if an elementary student switches from a low performing grade-level peer group to a high performing one, the student’s gains in math scores will be 9% higher than they otherwise would have been (Betts, 2003). The study concluded that although teacher characteristics and class size can make a difference, achievement of student’s peers is more influential.

*Stereotype Threat*

Furthermore, when a person’s social identity is attached to a negative stereotype, that person will tend to under-perform in a manner consistent with the stereotype (LeBlanc, 2004). “Stereotype threat” is what occurs to the person belonging to the stigmatized and stereotyped group. Stereotype threat refers to the fear a member of a stereotyped group has of being reduced to that stereotype. Moreover, a student is afraid to try in school because if he or she fails he or she will fulfill the negative stereotypical role that has been set up for him. This is supported by Claude Steele, an
internationally recognized social psychologist and professor at Stanford University, who says many black youth feel it is better to not try than to fail and become the image of failure that has broadcasted through the media and other facts of society. Moreover, black students “fear that they lack ability and…dread that they will be devalued,” which contributes to their frequent “disidentification” or lack of interest in school and eventually to believing that their stigma is true (LeBlanc, 2004, p. 1). He attributes the underperformance to a person’s anxiety that he or she will conform to the negative stereotype (LeBlanc, 2004).

The perceptions that urban black and Latino youth have toward academic success is compared with Asian students in study conducted by Laurence Steinberg. Many Asian students are strongly directed (from the home) toward high achieving peer groups (Steinberg, 1996). (Achieving peers even compensate for a less than optimal home life.) Steinberg notes that the mass media singles out and glorifies low-income Black culture which denigrates school achievement. With peer groups in many high schools ethnically segregated, Black and Latino students often have difficulty gaining admission to (or forming) achievement oriented peer groups. But he says that in general many students (except Asians) regard identification with school “brains” stigmatizing, suggesting that one dimension of the issue of “acting white” is merely an extreme extension of a common social prohibition -”acting smart” (Steinberg, 1996). Thus, the internalized stereotypes, cultural capital and habitus of urban working class students of color are factors that adversely affect their motivation to perform well in school and as a result perpetuate the social inequality that exists.
Low Socio-economic Status is the Greatest Factor Affecting Urban Student Success

While many studies have portrayed structural inequities and societal expectations as being more significant than teacher quality, there are other studies that conclude that low socioeconomic status is a much larger and more stubborn obstacle to the success of students that most urgently needs to be addressed. According to the Public Policy Institute of California and several scholars, the strongest predictor of test scores and achievement in math and all subject areas in an urban low income school is not tracking, resources at a school or teacher quality or curriculum, but the percentage of economically disadvantaged students. The PPIC find little evidence to suggest that additional resources or teacher training will even substantially improve student performance. Instead, they insist that poverty at home needs to be addressed before anything else. Poverty, not the lack of school resources or lack of culturally competent teachers, is the key barrier to student achievement (Betts, Kim, & Danenberg, 2000). The shackling effects of poverty on academic achievement are demonstrated in several studies conducted by the PPIC. For example, one study by the PPIC looked at the achievement of fifth grade students on the 1998 Stanford 9 Reading Test. The analysis suggested that if two schools were identical (in terms of the resources examined in the study) except for the socioeconomic status (SES) of the students, 30% more students in a high SES school would score above the national average on the reading test than would students in a low SES school. Even more troubling for many of the current policy reforms aimed at improving teacher quality, is that the Public Policy Institute
finds that as long as a school has a high percentage of disadvantaged students, increasing the number of experienced, highly educated, and fully certified teachers would have only modest effects on test scores. In a school with predominantly low SES students, even if all teachers were to become fully credentialed, only an additional 3% of students would score at or above the national average. Therefore, poverty is the greatest barrier to urban student achievement and must be addressed before any other factor, including teacher quality, is even considered (Betts et al., 2000).

This notion that poverty and socioeconomic level is the greatest factor affecting urban minority achievement is also supported by researcher Paul Barton (2004). Barton says the achievement gap that is used to describe the gap in academic performance between students of color and their white counterparts can be greatly explained in terms of income level. Barton says that one of the most complex aspects of the achievement gap that is out of the direct control of educational leaders is the income gap. The income gap is the standard of living difference between rich and poor, but in the education system, the gap affects the student’s academic progression from kindergarten to senior year. Factors affecting student achievement that stem from being from a low-income background or poverty include low birth weight, lead poisoning, hunger, poor nutrition (Barton, 2004). Other factors related to poverty that may place a child at-risk for academic failure are being at risk of being exposed to abuse and neglect, substance abuse, dangerous neighborhoods, and homelessness.
Parental Socio-economic Status, Involvement and Educational Level

A key component in urban student’s educational experience that is also related to low socioeconomic status is parent income, availability and parental educational attainment (Barton, 2004). The presence of parents as role models or as active participants in a child’s education is frequently limited in low income families. Research by Annette Lareau suggests that students who lack middle-class cultural capital and have limited parental involvement are likely to have lower academic achievement than their better resourced peers (Lareau, 1987). Several gaps demonstrate a meaningful relationship between parental involvement at home and the achievement gap between the poorest students and those of the middle class or beyond (Rothstein, 2004). The “reading gap” refers to parents reading to children and exposing them at home to meaningful reading materials. Bridging this gap for students from low-income families can make the difference in school readiness and success throughout school. The “conversation gap” refers to the differences in which low-income and middle-class parents engage their children in conversations. Studies by the Economic Policy Institute have shown that middle-class parents converse with their children in ways that build the confidence, reasoning, and negotiating skills useful in school and beyond. By contrast, low-income parents tend to give orders to their children, mirroring what they face daily in their own worlds of work (Economic Policy Institute, 2002). Studies by Suarez - Orozco show that when students have assistance from a parent with homework, they do much better in school. This is a problem for many minority students due to the large number of single-parent
households and the increase in non-English speaking parents (Suarez-Orozco, 1995). Students from single-parent homes often find it difficult to find time to receive help from their parent. Similarly, some Hispanic students have difficulty getting help with their homework because there is not an English speaker at home to offer assistance (Suarez-Orozco, 1995).

Moreover, the culture and environment in which children are raised may play a role in the achievement gap. There is a fair amount of support for the idea that minorities begin their educational careers at a disadvantage due to cultural differences. Jencks & Phillips argue that black parents may not encourage early education in toddlers because they do not see the personal benefits of having exceptional academic skills. As a result of cultural differences, black students tend to begin school with smaller vocabularies than their white classmates (Jencks & Phillips, 1998).

Furthermore, the “role model gap” refers to the differences in types of adults, older siblings, and friends young children are exposed to as they grow. Children of low-income parents are less likely to be exposed to college-educated, professional adults than are children whose parents and siblings routinely associate with these types of people.

Additionally, parent–child time in low-income families may be limited due to the longer hours spent working one or two jobs (Economic Policy Institute, 2002). Job losses in the early 2000s disproportionately affected African American and Hispanic workers (Economic Policy Institute, 2002) and also disproportionately affected workers with a GED, a high school diploma, or some college education, compared to
those with a college degree (Economic Policy Institute, 2002). Those who were working spent more hours on the job; therefore, they had less time to assist their children with their homework, read aloud to them, and be involved in school functions—all factors that contribute to the success of children in school. Also, student mobility—moving from school to school as parents seek work or affordable housing occurs more frequently with children from low-income families. Students who change schools frequently also do poorly on tests and are more likely to be below grade level in reading and math than their counterparts who do not change schools (Barton, 2004).

Clearly, there is a great body of research that indicates that there is no clear consensus on what is the major cause for the poor achievement in math for urban youth and for the overall achievement gap that exists. There is significant research by Marzano (2001, 2003), Delpit (1995), and others that points to the teacher as having the single greatest effect on student achievement. William Sanders (1994, 1996) clearly states in his research that the quality of instruction has a greater effect than poverty or per-pupil expenditure. But the contrasting body of research that has been examined consistently stresses that there are external factors that need to be answered before teacher quality and student engagement are addressed. Some researchers have shown that the poor performance of urban California schools is not a problem that can be solved by simply pouring money into teacher preparation and other programs that neglect the institutional and societal factors that affect African American and Latino achievement in school. Studies show that structural inequities seen in poor school conditions, lack of resources and tracking systems are the most significant obstacle to
urban student success. But the PPIC strongly feels that the strongest predictor of test scores and achievement in math and all subject areas in an urban low income school is not school resources or teacher quality or curriculum, but the percentage of economically disadvantaged students. Furthermore, while current reform proposals, especially those aimed at improving teacher preparation in poor schools, are critical steps to achieving social equity, the poor performance of urban youth of color in mathematics and other areas appears to result largely from much deeper problems resulting from poverty.

The following section delves into the C.R.E.A.T.E. model that is the heart of the study. This underlying theme of this model is that the teacher and the quality of instruction have a very significant impact on urban student success in mathematics. The instructional model addresses the concerns around instruction voiced by Marzano and Sanders. Furthermore, the model symbolizes faith in their notion that in a system where students of color come from low socioeconomic backgrounds, the quality of teaching is still the most important answer to the urban crisis of failure in mathematics.

VI. C.R.E.A.T.E.: A Model for Urban Student Engagement and Achievement

*Brief History and Overview of the C.R.E.A.T.E. Model*

The C.R.E.A.T.E. model was developed through the author’s experiences with low income urban students of color that has led to student success in mathematics recognized at state and national conferences on the achievement gap. The C.R.E.A.T.E. instructional model is based on practices that the author has used in his
classroom to get his students to succeed in mathematics. It was developed over two years through extensive interviews with students and the author’s reflection on his own teaching practices. The author’s students in the Special Day Class in 2008 were outperforming the district in algebra. The students he had last year, 2009, outperformed the state average and championed the notion that it was possible for poor, black and brown students who were far below grade level in an inner city comprehensive high school to close the achievement gap in terms of race and income. The students were excited and the district was shocked by the results. The big question was why were these students succeeding in the author’s class? Why were they doing better than their peers? The deep reflection, student testimonials, and speaking engagements at the district, state, and national level helped to trigger the formulation of the C.R.E.A.T.E. model which the author would use to explain why his kids were so successful.

There are several underlying themes that are significant to this model. While the model will help teachers reach all students, its main mission is to empower teachers to reach kids who are often left out or are underserved in our classrooms. This is what the author calls the target population. The target population refers to 2 types of students who struggles and are at risk of performing poorly in the classroom. The first type is the student who acts out and loudly struggles. As a result of not being engaged or not understanding the math or science, the student talks when he is not supposed to. He throws pencils or breaks class rules because he is not engaged. The other student is the quiet or “under the radar” student who does not understand the material. The
“under the radar” students won’t tell you they are lost. They will quietly nod their head or act as if they are masters of the content. They won’t tell anyone they do not get it. Their lack of learning will not be revealed until a test or a major assessment unfortunately. The target population in most urban schools throughout America is disproportionately African American and Latino. Therefore, the C.R.E.A.T.E. model is meant to help educators reach the target population which is often our black and brown kids. Throughout the following discussion on the model, the target population will be mentioned because it is that population that is failing in classrooms and that the C.R.E.A.T.E. model attempts to reach.

Another major distinguishing aspect of the C.R.E.A.T.E. model is that it goes beyond traditional teaching models in addressing needs of marginalized students who are left out, often our African American and Latino students. It takes traditional instructional strategies that are often taught in teaching credential programs and asks the teacher to go the extra mile in reaching marginalized populations. It begs for the teacher to put an extra effort in adapting the traditional teaching style to the needs of urban students of color. It asks the teacher to take personal responsibility and dedicate his or her heart towards getting every student to succeed. The will of the teacher is the most important asset that the C.R.E.A.T.E. model relies on. The model is grounded in the belief that the factor that has the greatest impact on student achievement is the effectiveness of the classroom teacher (Marzano, Pickering, & Pollock, 2001). Quality instruction is the single biggest factor influencing gains in achievement, an influence
many times greater than poverty or per-pupil expenditures (Sanders and Horn, 1994; Wright, Horn, and Sanders, 1997).

A significant principle that is also central to the model is that a teacher of any race or gender can have success with urban students of color. Therefore, the model can be used by any teacher of any race or gender. It does not require a black teacher for black kids to succeed in school. The final tenet that is critical to understanding the purpose of the model is that all of our students should be accountable and that the majority of students can be expected to succeed on standardized exams. It is true that certain populations such as beginning English Learners and some students with severe learning disabilities cannot be realistically expected to excel on certain standardized tests. There are also valid theories that indicate NCLB hurts the neediest schools by taking away their money once they fail to meet the testing accountability measures. While there are shortcomings to NCLB and its accountability measures, the author believes that its greatest gift is that it keeps schools, teachers, and students accountable. Certainly, students can demonstrate learning through many different ways including oral discussions, projects, and portfolios. But students should also be tested and although those standardized tests are often culturally biased, our students of color need to be able to succeed on those tests if they are to be competitive in society. The author has had an extreme dislike for most standardized tests for most of his life. Many times, he did not understand the question or experience test anxiety. But he would not be here writing this handbook if he did not succeed in taking the SAT, the GRE, and the CSET for math teachers. Lawyers and doctors could not achieve their
position in society if they did not pass the LSAT and MCAT. Therefore, the C.R.E.A.T.E. model believes that teachers must expect urban students of color to succeed all accountability measures, including standardized tests (CST, SAT, GRE, LSAT, CSET). This does not mean the teacher must teach to the test and simply tell the students when to circle letter A and when to circle letter D. It does not mean that teachers cannot be creative and incorporate real life education and social justice curriculum into the classroom just because it is not explicitly discussed in the standards. But this does mean that the teacher should teach the standards based content to mastery and prepare the students to demonstrate their learning on a test. The goal is still to push students to learn and prepare them to display their learning in a way that helps them, their teacher, and society recognize their academic excellence.

*The C.R.E.A.T.E Model*

*C.R.E.A.T.E.*

C = Culturally Responsive Teaching

R = Rigorous & Rewarding Expectations

E = Essential Curriculum

A = Assess & Master in Class

T = Test Taking Models/Strategies

E = Extra One-on-One Intervention
Culturally Responsive Instruction

Cultural empathy. This section presents the existing literature that relates to the C.R.E.A.T.E. instructional model that is at the heart of the author’s study. It explores each of the six letters of the C.R.E.A.T.E. acronym and the different factors they represent. The first element is culturally responsive teaching. Dr. Crystal Kuykendall, who is a former executive director of the National Alliance of Black School Educators, says culture determines how children perceive life and their relationship to the world. Since culture also influences how and what children learn, educators can use culture to improve self-image and student achievement (Kuykendall, 2004). In order for teachers to view the students’ culture in a positive light and to integrate elements of students’ culture into the curriculum, teachers must first develop an appreciation for the different cultures diverse urban students bring. Furthermore, at the heart of culturally responsive instruction, lies cultural empathy.

Cultural empathy would allow teachers to have an intellectual understanding of the values and beliefs of different cultures and to identify with the feelings, thoughts and behavior of students from different cultural backgrounds. To function effectively with people of other cultures, it is important to acquire some understanding of those cultures, and cultural empathy seems important to "reading" other cultures (Dovidio et al., 2004). Moreover, empathy is the concept of putting oneself in another person’s psychological shoes, and it requires the ability to describe behavior objectively. Empathy makes it easier to understand how people in another culture will react to a
given situation and then it is easier to interact with them (Dovidio et al., 2004). Sonia Nieto (2005) says teachers must have solidarity with and empathy for students because relationships are at the heart of teaching. Teachers who think deeply about their work, solidarity and empathy have genuine respect for their students’ identities—including their language and culture—as well as high expectations and great admiration for them. Teachers must avoid paying attention to negative discourse that targets those students who most need empathy and solidarity. Meaningful learning will happen through meaningful interaction, whether it is with peers, teachers, music, authors, or poets, or though nature. In order for educators to have meaningful interaction that empowers students, teachers must appreciate their cultures’ values and behaviors (Nieto, 2005).

In order to develop cultural empathy, teachers must be given the opportunity to examine their own existing beliefs or prejudices against certain ethnic groups of students. They must be trained to see how their preconceived notions and assumptions about urban students, especially African American and Latino students, often adversely affects their instructional approach and relationship they may have with these students (Nieto, 2005). Teachers must be trained to put themselves in the shoes of their students and try to understand what students experience when they are treated in ways that reinforce stereotypes or notions that negatively portray them. Unfavorable attitudes toward diverse groups can possibly be countered by increasing empathy (Dovidio et al., 2004). If teachers portray cultural empathy, they will be more willing to deliver culturally responsive instruction that empowers and engages students.
Culturally Responsive Curriculum

Culturally responsive or relevant teaching is a term created by Gloria Ladson-Billings to describe “a pedagogy that empowers students intellectually, socially, emotionally, and politically by using cultural referents to impart knowledge, skills, and attitudes” (Ladson-Billings, 1992). It is a type of instruction that uses the students’ learning styles, culture, background, prior knowledge, vocabulary, music, sports, and other interests as a tool to teach them. In his famous book, *The School and Society*, educational philosopher John Dewey believed that the development of curricula should be based on student self-interests (Dewey, 1976). Education, he felt, should be a child-centered process. Dewey’s critique of the traditionalists for their failure to connect the curriculum to the interests and activities of the child is well-known. Dewey also advocated for teachers to connect the child’s life experiences and interests to the existing curriculum. Therefore, the student must be able to understand and succeed in the traditional curriculum. He further explained that effective education required the interests of the child to be used by the teacher in order to guide the child toward his understanding of the sciences, history, and arts (Dewey, 1976).

This theme of relating to the students’ interests is also echoed in *City Schools and the American Dream* by Dr. Pedro Noguera (2003), an urban sociologist who was a Professor in the Graduate School of Education at Harvard University. He says that students are bored because they are not intellectually engaged. Noguera concludes that in order to engage urban students teachers have to increasingly learn to teach the way
children learn, rather than expecting children to learn the way they teach. Therefore, teachers have to know more about how to make ideas and knowledge meaningful to children and use the students’ culture and interests as a tool to teach them (Noguera, 2003).

Lisa Delpit (1995) says urban educators must question their teaching practices and develop culturally relevant teaching strategies to hook their students, who bring different cultural assets. The major focus of Delpit’s research is on culturally relevant curriculum. Delpit says that if educators do not have some knowledge of children’s lives outside of the realms of paper-and-pencil work, and even outside of their classrooms, then they cannot know their strengths. Perhaps the teachers should find ways to engage young students of color in urban classrooms. As Delpit explains, they must use the cultural capital of the students as a tool to make the class relevant and academic (Delpit 1995). Teachers can learn the sports, music, and games that capture the students’ attention and become entertaining educators who try to engage their students.

Bob Moses is a civil rights activist and founder of the Algebra Project. His mission has been to raise the performance of minority students in algebra because it is the modern day civil right for minorities. One of the underlying principles of the Algebra Project is that ‘people talk’ is used to relate math concepts to students” (Cobb & Moses, 2001). This implies that algebra is discussed in language that is natural or intuitive to students before they are exposed to the technical language contained in a textbook or used in institutions of higher education. Analysis of schools using the
Algebra Project shows improvement in test scores, but supporters of the project say the more important point is that the perception that inner-city kids are neither interested or proficient in math has been shot down (Cobb & Moses, 2001).

A report made for the Mid-Atlantic Equity Center reveals that both teaching and learning styles reflect the richness of cultural diversity and individual differences. Each instructional style reflects a model of learning and a particular institutional content (Marks, 1981). Educational curriculum and instructional strategies often embody particular learning styles and cultural biases. Children whose culture and learning style are reflected in the content and organization of the classroom are more likely to be highly motivated and to benefit from instruction.

The way a teacher imparts knowledge can serve as a catalyst for encouraging and eliciting student achievement. Many Black youth have barely mastered the norms of their own culture when they are confronted with teaching styles that are incompatible with their accepted learning patterns (Hale-Benson, 1982). In her book *Black Children: Their Roots, Culture and Learning Styles*, Janice Hale-Benson suggests that formal education has not worked for many Black youth because it has not employed teaching styles that correspond with students' learning styles. When this incongruity between teaching and learning styles exists, Black children become less motivated and more likely to question their self-worth. When Black youth find learning difficult, they often blame themselves and/or develop animosity toward the educational environment. Before teachers can understand and appreciate the learning styles preferred by students, it is important to understand the role culture plays in
shaping learning styles. It shapes cognitive development, children's approach to academic tasks and their behavior in traditional academic settings (Hale-Benson, 1982).

Cultural conflict can occur when children have not had experiences that provide them with the kind of information that is used and valued in school. To reach all children, educators must expand their repertoire of instructional strategies to encompass the various approaches children use to learn. In writing about Black children's learning styles, Hale-Benson suggests that many Black youth employ people-oriented, relational and field dependent/sensitive approaches to learning rather than the analytical style favored in most structures. People-oriented learning is a learning style derived from African heritage. Because many Black youth learn in their pre-school years through extensive social interaction, some Black youth may have more difficulty than White students in settings where learning takes place primarily through the use of educational hardware, technology, books, listening stations, learning centers, television, programmed instruction, learning kits and other objects (Hale-Benson, 1982).

In the pursuit of bridging the cultural gap between educators and urban students of color, Roberta Maldonado presents a significant approach to building literacy among Latinos. Maldonado claims that in order to effectively teach students, it is important for teachers to understand where the students are coming from (Reyes, 2001). It is insufficient to simply be competent and current regarding the most effective teaching methodologies and materials. Teachers must have an understanding
of the “conditions” that underlie a student’s potential for learning. Many teachers try to get their students to activate their background knowledge to help them make sense of a text, but the teachers themselves lack sufficient knowledge about the text of their students’ daily lives. This “two-way” background knowledge that exists between teachers and students of color is imperative in order for a literary experience that is both authentic as well as skill building to take place (Reyes, 2001). Thus, teachers must do their homework and learn about the students’ lives. This includes the culture, language, issues that the students might be going through on a daily basis, and the students’ fears and aspirations. A teacher who is educated about his or her students’ lives can be a much more effective and engaging teacher for students of color.

Maldonado shows how she could teach a classic, *Les Miserables*, to her students by using their cultural capital or life experiences as a tool for understanding the novel. She focuses on certain themes of the novel such as probing questions of good and bad choices, of morally defensible social transgressions, of the possibility of reform, of the development of personal integrity, of social justice. Moreover, with some contextualization, the students are able to perceive the characters in the novel as a nineteenth century French version of today’s gang bangers, and they could easily relate to the staggering social pressures under which Jean Val Jean labored to genuinely reform and become his own man. Maldonado further explains how she could empower her students with an important insight into world history and European culture, thus improving their chances of future academic success, while also inspiring a relevant discussion about the social construction of an unwed mother. Furthermore,
the students’ cultural capital helps them to “thematically relate to the character of Heathcliff in *Wuthering Heights*” (Reyes, 2001). Also, Maldonado uses the play, *Raisin in the Sun*, to teach “ostensibly benign but insidious forms of racism that people of color must prepare themselves to encounter” whenever they attempt to shatter the glass ceiling (Reyes, 2001). She even brings her own cultural capital seen in her family’s difficult history of integrating schools and neighborhoods, her father’s monumental and ultimately successful effort to become a doctor, and of her own personal battle against her family’s and her culture’s limiting gender roles during the 1950s, 1960s, and 1970s (Reyes, 2001).

Maldonado concludes by saying that good teachers will see no end of built-in-chances for teaching mini-lessons using any literary text that both empower the students with academic skills and permit for an open discussion or socially relevant issues (Reyes, 2001). Specialized teaching credentials merely give teachers the tools to teach. But they are not enough to transform individuals who are at core ethnocentric and fearful of baring themselves to the unknown. Teachers must learn the culture of their students by being “in homes, at dinner tables, while being functioning parts of dynamic communities” (Reyes, 2001). Only when the teacher and student can both attain “two-way background knowledge” will education in urban schools of color become a truly empowering experience that integrates skill building with students’ real-world lives in meaningful and authentic ways (Reyes, 2001).

In the classroom, culturally responsive teaching means that the teacher will teach in a way that students can understand. The C.R.E.A.T.E. model asks the teacher
to take extra effort to learn about the student’s culture or language, sports, music etc. During the first week of school, the author uses surveys, questionnaires and tries to build a relationship by simply talking to the students and asking them what some of their interests are. Student centered stories, vocabulary and language are key to hooking the students’ attention so that they will be receptive enough to learn the curriculum. For example, the author uses street language in explaining the concept of isolating the x variable in algebra. X is like a dog that wants his own block or neighborhood. Solving for x implies that x must be alone in its own neighborhood. X’s neighborhood is separated from the other neighborhood by the equal sign which acts like a gate. Hence there are two different neighborhoods. Any number on X’s block is like an enemy on the dog’s block. In order for the number to leave the X’s block, it must change its operation upon crossing the equal sign or gate. Therefore, if the problem is $X + 4 = 6$, the + 4 must leave X’s block and become a – 4. $6 – 4 = 2$. So $X = 2$ and X is alone. The goal of solving for X is to get X or the dog alone. Once the students have understood the story and the concept of isolating the x, the author would go back and teach the students the academic vocabulary. X becomes the “variable,” for example. The students are more prepared and willing to learn because they already have a sense of confidence that comes from being comfortable with the material the first time it was explained to them.

If a teacher was teaching similes, he or she could use examples with Kobe Bryant or football that involve similes and metaphors. For instance, “Kobe flies like an eagle to the basket.” Kobe is being compared to the eagle and that statement is
therefore a simile. There are teachers who use rap or hip hop lyrics to teach literary elements such as theme and tone. A teacher could easily use rap lyrics of Tupac to teach the concept of mood or character analysis. Once the teacher hooks the student’s attention and makes sure they understand the concept, the teacher can bring in the standard textbook which may be Shakespeare or J.D. Salinger. The students may be more interested in analyzing the conflict in Shakespeare if they already understand what conflict means as a result of being exposed to this concept through rap or stories that directly relate to them. Many times, within those standard textbooks, the teacher can find multiple opportunities to make the theme connect to student lives as well. There are many themes such as jealousy and greed that are seen in Shakespeare that students can relate to if the teacher tries to make this connection clear. For example, the tension between the Montagues and Capulets in Romeo and Juliet is similar to the tensions that would arise if there were two lovers that belonged to two different gangs such as the Bloods and Crips. Students in many urban settings can relate to the tensions that often lead to violence because of animosity between tow gang “families.” These examples may get the attention of students in inner city environments. But each student population is different and it would be a mistake for the teacher to assume all kids relate to basketball or football. The key is that the teacher makes an effort to find out about the students and puts himself or herself in their shoes and figure out what it would take to make learning easier.
Another aspect of culturally responsive instruction that research has shown to be effective in urban schools deals with the delivery of instruction to students. While it is important to make the curriculum accessible or relevant to students, it is also critical that the content is delivered in a way that engages students. Many times, a teacher has a brilliant idea or lesson but the delivery is so boring or didactic that students get turned off and miss out on the experience. The C.R.E.A.T.E. model asks that teachers in inner city classrooms make an extra effort to have an interactive dialogue with students instead of a one way lecture. A one way lecture often causes students to lose interest and they may even start to act in a disruptive way. An effective teacher would use a conversational approach and interact step by step with many different students personally during the “lecture.” According to Tiberius and Tipping, students typically retain the most information in the first 10 minutes of a lecture, so it is important limit lecture. Lecturing conveys information, but may not build understanding; it casts learners as passive receivers of information. Integrating lectures with discussion and activities will help students process and understand the information presented (Tiberius and Tipping, 1990). Effective culturally responsive instructional delivery involves interaction with students and for frequent feedback.

This highly interactive pedagogy that involves the students may be conducted through “call and response” or “question and answer” techniques. Smitherman defines call-and-response as spontaneous verbal and non-verbal interaction between speaker
and listener in which all of the statements (‘calls’) are punctuated by expressions
(‘responses’) from the listener (Smitherman, 1977). She suggests that responses
function to affirm or agree with the speaker, urge the speaker on, repeat what the
speaker has said, complete the speaker’s statement in response to a request from the
speaker or in spontaneous talking with the speaker, or indicate extremely powerful
affirmation of what the speaker has said. Responses can follow from a speaker’s
specifically requesting them or eliciting them by manipulating their own discourse, or
they can be unsolicited and spontaneously interjected into the ongoing interaction
(Foster, 1989). Several studies have shown that call-and-response can be effective in
teaching African American students. An early study that examined how African
American English-speaking first graders were taught to read found that students taught
with African American discourse strategies, including call-and-response, achieved
higher reading scores on standardized achievement tests and were better able to switch
between African American English and Standard English according to context
(Piestrup, 1973).

Foster analyzed the discourse of an African American teacher as she interacted
with her class of predominantly African American students at a community college
(Foster, 1989). The study focused on the teacher's discourse, particularly how—
through repetition, repetition with variation, call-and-response, rhythm, variation in
pace, and creative language—the teacher shifted her discourse style from a
mainstream style of talk to an African American discourse style when she was
teaching. The teacher deemed this indigenous interactive style to be appropriate and
effective for classroom interaction. Enthusiastic engagement enabled students to better remember and retrieve information. This social experience served one of the most important functions of classroom discourse—building cognitive information—as well as establishing and maintaining social relationships and expressing the speakers’ attitudes (Cazden, 1988). Furthermore, Cazden states that the call and response instructional style allows for the teacher to mediate between the student’s everyday world—their linguistic and cultural worlds—and their curricular world by drawing on the social, cultural, and linguistic competence they bring to school to help them become skillful in whatever subject they are learning (Cazden, 1988). Therefore, call and response is a highly interactive discussion that allows for students to express themselves and learn in a style that is natural to them.

*Culturally responsive delivery of instruction - question and answer.* Research conducted by Brophy and Good shows that the question and answer instructional style has a significant impact on learning because questions are major vehicles for frequent interaction and academic feedback (Brophy & Good, 1986). Questions are effective learning tools when asked before, during and after a learning experience (Marzano et al., 2001). They found that one of the differences between effective and less effective teachers was the frequency of questions. The effective teachers asked approximately three times as many questions as the less effective teachers. Question and answer type of dialogue allows for frequent academic interaction and provides many opportunities for students to be actively involved and receive immediate feedback and feel higher self esteem upon receiving praise for their positive input.
Research shows that urban youth can benefit from intensive personal interaction with teachers who provide rapport, nonverbal support and affection. Many urban and lower-income children have a need to relate the learning process to their own experience. As a result, these youth may appear over-involved in the learning process. Often, this over-involvement is perceived by teachers as disruptive (Gilbert & Gay, 1985). When urban youth are taught through a teaching style that emphasizes the objective and impersonal over the interactional and personal, their learning, achievement and academic self-images can suffer. In these cases, their cultural and style differences -- not their intelligence -- can lead to lower ability grouping.

Question and answer driven academic discussions allow for students to receive personal interaction and also to gain immediate feedback in a step by step manner that can help fix errors in real-time, producing greater immediate gains and more efficient learning (Corbett & Anderson, 1990). Corbett and Anderson have found in a 20 year study of mathematics learning and instruction that immediate feedback which results from the question and answer approach is crucial to immediate learning. It is critical that the questions are specific and goal directed and that the facilitator of the discussion keeps the learner’s eye on the learning goal (Hoska, 1993). A step-by-step question and answer driven “lecture” provides opportunities for elaborated feedback in small enough pieces so that it is not overwhelming and/or discarded (Bransford, Donovan, & Pellegrino, 2000). Presenting too much information may not only result in a superficial learning, but also invoke cognitive overload (Mayer & Moreno, 2002). A stepwise presentation of feedback through question and answer discussions offers the
possibility to control for mistakes and gives learners sufficient information to correct errors on their own.

Question and answer driven interactions are especially important for low-achieving students (or those with low self-efficacy) because they allow them to improve learning and performance through a scaffolding process where the students can arrive at an answer through a step by step approach (Graesser, McNamara, & VanLehn, 2005). When a student is learning a difficult new task it is useful to use the question and answer approach especially because it gives the student a chance to work his or her way step-by-step to the learning goal without getting frustrated. Furthermore, high-achieving students or more motivated ones benefit from feedback that challenges them, such as hints, cues, and prompts (Vygotsky, 1987). Therefore, the question and answer instructional approach is an alternative to the traditional lecture driven instructional approach that permits student interaction and provides opportunities for immediate feedback and improved learning in a step by step process.

In the classroom, the author constantly uses questioning as a vehicle to keep students engaged during instruction. Every couple of seconds during a “lecture” he asks a question and has the student teach back the step of the concept just covered. By the end of a 15 minute lecture, the author will have elicited at least 25 different responses and reward these responding students with points to their grade as seen on the white board. Everyone is involved and he does not wait for their hands to go up. Questioning permits the author to have an interactive two way dialogue. It is also important that the teacher uses interaction that is more personal than general. The
author especially calls on the target population because he is aware that they will be the first ones to drift off or get lost. He avoids general questioning and instead calls on students randomly in a personal manner to do the next step in the problem. During general interaction or questioning, the “cream of the crop kids” may answer and the teacher may mistakenly assume that everyone is listening. The target population gets easily lost or frustrated or caught up in daydreaming during general questioning that favors the “cream of the crop” students who are more easily attentive and know the material. The target population won’t reveal his or her confusion or boredom right away. Instead, the target population may reveal it eventually through discipline issues or on the next quiz by performing poorly. Moreover, the interaction in the author’s class would occur more frequently with the target population consisting of the loudly struggling kids and the “under the radar” struggling kids. He asks 3 or 4 questions every step or two in a concept and call more frequently on the struggling students just to make sure they are still engaged and following along. But this interaction would occur step by step and in a personal manner. Therefore, the author would say, “John, you tell me the next step in the problem.” After John is done, the author will immediately pick on another student to reiterate the same point or do the next step. After the author introduces the next part, he again will choose another 5 students to teach those concepts back to the class. While the teacher should interact with as many students as possible, he or she should make a special effort to get the attention of the target population. If the author asks 10 questions, 7 of them will be directed toward the
target population. If they can understand the material and stay engaged, there is a good chance the other kids will also follow along.

**Rigorous and Rewarding Expectations**

*Rigorous expectations for the teacher*. Previous research by Robert Marzano (2001, 2003) has indicated that the teacher is one of the greatest influences on student achievement. Therefore, it is crucial that the teachers have high expectations for themselves and are motivated to meet those expectations. The teacher has to teach as if his or her future depends on the outcome as seen in student learning. The teacher should see the failure of the student as the failure of the teacher. Research shows that a vital part of expectations for teachers is their own belief about their effectiveness. Teachers who produce the greatest learning gains accept responsibility for teaching their students. They believe that students are capable of learning and that they (the teachers) can teach them (Alkin, 1992). The Encyclopedia goes on to cite research that shows how teachers who doubt their own efficacy exert little effort in reshaping their instruction to help their students. They may have a low tolerance threshold for students with learning difficulties and not persist in helping such students through their difficulties. Teachers with high sense of efficacy exhibit the opposite tendencies—adapting instruction to student characteristics and showing a high level of tolerance for a variety of student learning styles. Teacher motivation naturally has to do with teachers’ attitude toward work (Alkin, 1992). It has to do with teachers’ desire to participate in the pedagogical processes within the school environment. It has to do
with teachers' interest in student discipline and control. Therefore it could underlie their involvement or non-involvement in academic and non-academic activities which operate in schools. The teacher is the one that translates educational philosophy and objectives into knowledge and skills and transfers them to students in the classroom. Classroom climate is important in teacher motivation. If a teacher expects of himself or herself that the classroom will be a safe, healthy, happy place conducive for learning then he or she will be willing to learn what changes to make so that the classroom climate supports student learning. He or she will try to form positive relationships with students, implement orderliness, discipline and the control necessary for an urban classroom to be a functional learning environment Alkin, 1992). Thus, it is important that any organization tries to motivate its teaching staff.

*Teaching like your life depends on the outcome.* There are several characteristics that describe a teacher who has rigorous expectations for himself or herself. Sheryl Denbo says that if educators are to be successful in assisting urban students to achieve specific academic and developmental goals, then they need to examine what they mean by results. The rigorous expectations need to be based upon a culture of evidence (Denbo, 1986). Denbo further defines accountability as an obligation or willingness to accept responsibility or to account for one's actions. It is an important part of achieving results. Educators must be as willing to claim responsibility for student failure to learn as well as for student success. This point was further echoed by an educator from West High School who once stated that a teacher with high self expectations teaches like his or her life depends on the outcome.
Therefore, the teacher who truly is rigorous and passionate about getting results is one who accepts student failure as his or her own failure.

The National Center for Urban School Transformation (NCUST) is a center that is dedicated to identifying, studying, and promoting the best practices of America’s highest achieving urban schools in a manner that supports urban districts in transforming teaching and learning. NCUST has emphasized that teachers in high performing urban schools take responsibility for student learning. If it has not been learned, then it has not been taught. This feeling of responsibility is also clear in NCUST’s analogy where the teacher who says, “I taught it, but they did not learn it,” is like a physician saying, ‘I cured him, but he died” (NCUST, 2008).

NCUST depicts how rigorous teachers have goals for themselves. Almost all typical urban schools have goals. Often, there are many goals on paper, but no goals that influence the daily work of teachers, parents, and students. Sometimes, goals are framed around issues that have little meaning to teachers. In high-performing schools, goals generate enthusiasm for teachers. Teachers have objective goals for learning that may pertain to % progress or % proficiency. Often, teachers are focused upon only one or two goals at a time. High performing teachers show excitement in trying to achieve important goals (NCUST, 2008). For example, a teacher of mathematics may have a goal that his students will all pass the High School Exit Exam. The author’s goal for his algebra class is usually that at least 70% will score above basic on the California State Algebra Exam. A history teacher’s goal may be that his students will outperform the state average on their state history exam. The goal for a science teacher
could be that his or her students will get first place in the state science fair. A teacher must assume responsibility for the fate of their students while in their classroom.

Rigorous teachers evaluate their own progress in reaching their student learning goals based on data. They keep themselves accountable and feel responsible for student failure or success. Accountability must be data driven, with data derived from multiple sources, including standardized test scores, ongoing classroom curriculum-based assessments, grades, teacher and parental observations and reports, and other anecdotal accounts of student development and learning. In typical urban schools teachers are reluctant to reveal information about their weaknesses related to content knowledge. In contrast, highly successful teachers are rigorous and ready to confront the data (NCUST, 2008). In most high-performing urban schools, teachers feel comfortable admitting their content area weaknesses and seeking help (NCUST, 2008). High-stakes decisions determining such life-altering courses as promotion and graduation must not be based on a single data source. Ongoing analysis of disaggregated student data at the school level -- achievement data broken down by student ethnic groups, gender within ethnic groups, English language proficiency, income levels, and enrollment in educational programs, such as special education, talented and gifted, and advanced placement programs -- is essential. Ongoing analysis of each student's academic progress is also essential. If a group of students or an individual student is not succeeding, then changes have to be made. They need to know which schools are supporting high achievement of urban students and, therefore, which policies, programs, and practices are effective for teaching urban students.
Educators must have specific ideas about where they want to go if they are to get there (Denbo, 1986).

NCUST portrays how teachers who have rigorous expectations for themselves teach for learning. They are willing to differentiate instruction and make whatever changes necessary for student achievement. They are not content until their students demonstrate mastery of essential concepts. In typical urban schools, teachers “present” content. When they finish presenting, they have finished teaching. In contrast, in most high-achieving urban schools, teachers are not finished teaching until they have evidence that students understand the content or are able to demonstrate the skills that were the focus of instruction. Improvement efforts are data-driven and goal-focused. Moreover, teachers use a variety of approaches designed to connect with students’ interests, backgrounds, cultures, and prior knowledge (NCUST, 2008).

Rigorous Expectations for Students

While teachers must have high expectations for themselves, it is critical that they have rigorous expectations for their students. Moreover, the student should begin to set a personal goal that is also rigorous. A student tends to fulfill the expectation level developed by the teacher, regardless of whether the expectation is accurately based on the student’s abilities (Brophy, 1983). Students react to cues or ways that teachers communicate their expectations, and can either rise to high expectations or sink to low expectations, while developing an internal acceptance of perceived ability. This perception can become a self-fulfilling prophecy or a sustaining expectation.
Schilling and Schilling also found that expectations shape the learning experience very powerfully. Their research shows that merely stating an expectation results in enhanced performance, that higher expectations result in higher performance, and that persons with high expectations perform at a higher level than those with low expectations, even though their measured abilities are equal (Schilling & Schilling, 1999). According to Tauber, high expectations may give rise to the "Pygmalion effect," a transformation in belief and behavior that can change a low-expectations student into a successful learner (Tauber, 1998). The Pygmalion effect, or Rosenthal effect, refers to situations in which students perform better than other students simply because they are expected to do so (Rosenthal & Jacobson, 1992).

The Pygmalion effect requires a student to internalize the expectations of their teachers. Robert Rosenthal and Lenore Jacobson, in their study of the Pygmalion effect, showed that if teachers were led to expect enhanced performance from some children, then the children did indeed show that enhancement. It is a form of self-fulfilling prophecy, and in this respect, students with poor expectations internalize their negative label, and those with positive labels succeed accordingly (Rosenthal, 1992). When teachers expect students to do well and show intellectual growth, they do; when teachers do not have such expectations, performance and growth are not so encouraged and may in fact be discouraged in a variety of ways. Furthermore, when teachers have high expectations, the students begin creating their own set of personal expectations. They expect themselves to reach a certain goal. Students benefit from taking responsibility for their learning. According to Tiberius and Tipping, students
are more motivated when they take control of their own learning. Having students set personal goals for what they hope to achieve or improve upon can encourage them to take responsibility (Tiberius & Tipping, 1990).

In an analysis of research over a 20-year period, Dr. Sheryl Denbo found that study after study demonstrated that both low and high teacher expectations greatly affect students’ performances (Denbo, 1986). Teacher expectations are particularly important in the development of positive self images in Black students. Positive racial attitudes by teachers are associated with greater minority achievement (Forehand, Regosta & Rock, 1976). Low teacher expectations have been shown to reduce the motivation of students to learn. Perhaps the most damaging consequence of low teacher expectations is the erosion of academic self-image in students.

Research shows that Black youth are more influenced by teacher perceptions than by their own perceptions (Garrett-Holiday, 1985). Black youth can be victimized by low teacher expectations, which are too often based on a teacher's preconceived notions about the potential and ability of students of a particular race, rather than on the actual performance of individual students (Williams & Muehle, 1978). These low expectations are capable of destroying egos and contributing to the loss of positive cultural and racial identity in students. The relationship between low teacher expectations and low student self-image can be seen by analyzing the behavior of teachers toward students perceived as low achievers. Rubovits and Maehr (1973) found that Black youngsters, regardless of actual intelligence or gifted labels, are
given less attention and ignored more than their White counterparts in classroom settings. Jacqueline Jordan Irvine (1985) of Emory University found that:

- Black students receive more negative behavioral feedback and more mixed messages than do white students; and
- Females receive significantly less total communication, less praise, less negative behavior feedback, less neutral procedure feedback and less nonacademic feedback.

Low expectations reinforce the belief that "no matter what I do, it won't make a difference." Teachers who more frequently use negative feedback for low-achieving students are contributing to the belief on the part of these students that effort does not influence educational outcomes (Cooper et al., 1979). Good's summary (1987) of teachers' behavior toward those students perceived as low achievers includes:

- providing students with general, often insincere praise;
- providing them will less feedback;
- demanding less effort of them;
- interrupting them more often;
- seating them farther away from the teacher;
- paying less attention to them;
- calling on them less often;
- waiting less time for them to respond to questions;
- criticizing them more often; and
- smiling at them less.
In his classroom, the author tells his students that they are the best mathematicians in the city. He tells them that they will be #1 and that their goal is to outperform the state average on the state exams and disprove all the people who believe they could not succeed. He brainwashes them by telling them repeatedly throughout the year that they will be #1 and that they will powerful if they know math. The posters in the classroom all reinforce the message that the students in his class are #1. They have internalized the notion that they are the best. This notion is reinforced when they actually succeed on the standardized exams. The teacher must brainwash them or make them internalize the notion that they will accomplish the goal of winning the science fair or passing the CAHSEE exam. The C.R.E.A.T.E. model believes in the Pygmalion effect which states that students who are told to believe something repeatedly will eventually accept and live out that ideal.

*Rigorous positive learning environment.* There are several other factors that teachers could use to advance higher expectations for students. Tauber discusses how a teacher with high expectations creates a "climate" conducive to learning (Tauber, 1998). Research shows that it is important to have rigorous expectations for all students in the classroom setting. It is crucial that a teacher in an urban classroom not allow two or three “non-players” or students who refuse to cooperate to disrupt other students who are motivated to succeed. The environment is key. Children respond to the expectations of their environment (Tauber, 1998). The teacher must be rigorous and assertive in trying to resolve the issues that Meece (2001) discussed related to urban student disengagement and lack of class control.
The assertive discipline model advocated by nationally recognized behavior management consultants Lee and Marlene Canter (1992) is based on the principle that the teacher has the right to determine what is best for the students and to expect compliance. No pupil should prevent the teacher from teaching, or keep another student from learning. Student compliance is imperative in creating and maintaining an effective and efficient learning environment. To accomplish this goal, teachers must react assertively, as opposed to aggressively or non-assertively. Assertive teachers react confidently and quickly in situations that require the management of student behavior. They are supported by a few clearly stated classroom rules that have been explained and enforced. They give firm, clear, concise directions to students who are in need of outside guidance to help them behave appropriately. Students who comply are reinforced, whereas those who disobey rules and directions receive negative consequences. Assertive teachers do not see students as adversaries, nor do they use an abrasive, sarcastic, hostile style. Assertive teachers believe that a firm, teacher-in-charge classroom is in the best interests of students. They believe that the students wish to have the personal and psychological safety experienced when their teacher is highly competent in directing behavior. The Canters state that society demands appropriate behavior if one is to be accepted and successful. Therefore, no one benefits when a student is allowed to misbehave. The Canters say that teachers show their concern for today's youth when they demand and promote appropriate classroom behavior. Additionally, educators have the right to request and expect
assistance from parents and administrators in their efforts. Assertive discipline provides strategies for gaining this support (Canter & Canter, 1992).

More than being a director, assertive teachers build positive, trusting relationships with their students and teach appropriate classroom behavior (via direct instruction...describing, modeling, practicing, reviewing, encouraging, and rewarding) to those who do not show it at present. They are demanding, yet warm in interaction; supportive of the youngsters and respectful in tone and mannerisms when addressing misbehavior. Assertive teachers listen carefully to what their students have to say, speak politely to them, and treat everyone fairly (not necessarily equally). A strategy that some teachers effectively use to create a classroom that has a positive climate is to implement a seating chart. Lee and Marlene Canter say that teachers need to think about how to reseat students, how to rearrange seating for easier access, and how to move closer to students who are off task (Canter & Canter,, 1992). A teacher's physical closeness to a student affects time on task (Brophy, 1986). Many of the “best” urban teachers use proximity to address discipline problems, yet not academic problems.

Frederick H. Jones explains that most lost time can be avoided by systematically employing effective body language, incentive systems, and efficient individual help (Jones, 2000). Effective body language causes students to stop misbehavior without being costly in teacher time: eye contact, facial expression [calm, no nonsense look], posture [first step in "moving in"], signals and gestures, and
physical proximity. Effective nonverbal acts typically stop misbehavior and avoid verbal confrontation.

The author in his classroom creates a positive learning environment by developing a contract with students during the first week of school. This contract is an agreement entailing the teachers’ expectation for the students and their expectations of the teacher. It is a mutual agreement that is posted on the wall. This helps the students and the teacher take responsibility and be accountable for their actions. The author uses a seating chart and strategically puts the target population in a location where they can be engaged and not get distracted by their peers. He usually puts the target population in the front and away from kids who they do not easily get along with. He also modifies the seating chart as needed. If a certain student gets too comfortable in a seat and distracts other kids, then the author immediately stops the bleeding and finds that student a different seat.

Also, the author develops a positive relationship with the target population. Students who are acting out or disengaged may have different challenges that are not clear within the classroom setting. Therefore, the author talks to these students on an individual basis and finds out what is bothering that student. Research shows that interaction between teachers and students is the most important factor in student motivation and involvement (Tiberius & Tipping, 1990). He brings them in during lunch or talks to them over the phone after school is over. He talks to them in a firm but uplifting way that will hopefully motivate them to improve. It is crucial to approach the student in a positive manner. The individual relationship of care and trust
that is formed with the target population is significant. Often, the student that usually acts out becomes the leader of the classroom, mainly because the author makes an extra effort to develop a meaningful relationship with that student outside of the classroom.

*Rigorous exit price.* The C.R.E.A.T.E. model stresses the importance of the independent rigorous exit price. In basketball, a coach will tell his players that they must make 10 free throws in a row without missing in order to leave the gym. The players would take the coach seriously and know that they better focus or else they are going to have an extra hour of practice as a consequence. In the classroom, the exit price means that the student must be able to independently do a certain number of problems by themselves by the end of the period. The exit price is an assignment that forces students to show mastery of the skill that was taught in class. The exit price must be rigorous and push the kids to show mastery of the objective. For example, an English teacher could say that the student must be write 10 strong thesis statements before the class ends for 50 points. In the author’s math class, he demands that students correctly do at least 20 out of 30 problems in class and that will be worth 40 points. There several reasons for this exit price. The main reason that relates to high expectation is that the students need to be kept accountable ever day. They will work harder and with more urgency if they are given a directive that states what they need to complete by the end of the period. It is key that a teacher does not tell them “do as many problems as you can and do the rest for homework.” Why? Because a student might take advantage and do 1 problem every 10 minutes and fool around the other
time. Positive pressure is a good thing. People who observe the author’s classroom describe him as “breathing down the kids’ neck.” While a rigorous exit price is important, it is also critical to enforce accountability by monitoring them doing the exit price. The author never sits down in his chair. The chair is illegal. He is always circulating to each desk especially the target population and making sure they are doing that exit price. The students may say they understand the math and lie to me that they do not need me to monitor them. They are liars. They are professional liars. A teacher should never believe the students when they say they do not need any help. It is imperative to circulate and tenaciously monitor them doing their exit price.

Furthermore, the teacher must make it clear to students that there is a consequence for students who do not finish the exit price. The students also know the author does not make idle threats. The students also know that if they do not complete the exit price of 20 problems out of 30 by the end of the period, the author will be on their case. They will miss basketball practice or he will call mom.

It is also important that the teacher uses parents as an important ally in the effort to reach the target population. Sometimes, the parent, coach, or guardian can be the most significant person in the student’s life. If the student wastes time and does not finish the exit price, the author will call their parent, their basketball coach, their grandma and demand that they stay after school to finish their work. He is hard on them. They will test him. But the author will within the first few weeks, catch them not finishing their exit price. A student might miss football practice because the author has called the student’s coach and kept him after school for not finishing the exit price.
Once they see that the author is “not playin’” they will work hard almost every day. It is often more effective to use the parent than the principal to help a student reform his or her own behavior. The author’s best friend has been his Metro PCS phone. He has all his parents of the target population on speed dial. The students know that if they do not finish their exit price, he will be on the phone the same day calling their basketball coach or older sister. They know he does not make idle threats. They respect the position he is in and the reality that their parent or significant guardian is in the picture to keep them accountable. Therefore, it is important to demand that the students finish a certain exit price and show them that the teacher is not “playin” by circulating the room, calling their coach or grandma or whoever keeps them accountable.

**Rewarding Expectations**

In the 1930s, John Dewey said people will not learn until they are ready and motivated to learn. He also stated that the “the most important attitude that can be formed is that of the desire to go on learning” (Dewey as cited in Meece, 2001, p. 5). Therefore, interest and motivation are essential elements in the learning process. In Slavin’s “Model of School Learning,” he describes incentives as one of the four most essential components (Slavin, 1977). At a time when urban students are more turned off by school than ever before, rewards and incentives might be a major hook to capture the mind of youth. Motivation may come from the intrinsic interest value of the material being learned, or may be created through the use of extrinsic incentives, such as praise, grades, stars, and so on (Stipek, 1993). If students want to know
something, they will be more likely to exert the necessary effort to learn it. This is why there are students who can rattle off the names and statistics relating to every player on their favorite sports team, but do not know their multiplication facts.

Teachers can create intrinsic interest in material to be taught by arousing student curiosity, for example by using surprising demonstrations, by relating topics to students' personal lives, or by allowing students to discover information for themselves (Brophy, 1987). Incentive is influenced by quality of instruction and appropriate levels of instruction. Students will be more motivated to learn about a topic that is presented in an interesting way that makes sense to them, that they feel capable of learning. Further, a student's motivation to exert maximum effort will be influenced by their perception of the difference between their probability of success if they do exert themselves and their probability of success if they do not (Atkinson & Birch, 1978; Slavin, 1977). That is, if a student feels sure of success or, alternatively, of failure, regardless of his or her efforts, then incentive will be very low. This is likely to be the case if a lesson is presented at a level much too easy or too difficult for the student. Incentive is high when the level of instruction is appropriate for a student, so that the student perceives that with effort the material can be mastered, so that the payoff for effort is perceived to be great.

*Feedback is a powerful motivator.* However, not every subject can be made intrinsically interesting to every student at all times. Most students need some sort of extrinsic incentive to exert an adequate level of effort on most school tasks. For example, studies of graded versus pass-fail college courses find substantially higher
achievement in classes that give grades (Gold, Reilly, Silberman, & Lehr 1971). Research shows that informal incentives, such as praise and feedback, may be more important than the formal grading system (Brophy, 1981). The importance of positive feedback in motivating students and raising achievement has been echoed by many well known researchers and the U.S. Department of Education as well. According to the U.S. Department of Education, teachers who set and communicate high expectations to all their students obtain greater academic performance than teachers who set low expectations. Furthermore, the use of effective academic feedback procedures helps create high expectations for all students (U.S. Department of Education, 1986). Feedback can be defined as information communicated to the learner that is intended to modify the learner’s thinking or behavior for the purpose of improving learning. Feedback is one of the more instructionally powerful and least understood features in instructional design (Cohen, 1985). According to researchers in the area, formative feedback should be multidimensional, non-evaluative, supportive, timely, specific, credible, infrequent, and genuine (Brophy, 1981; Schwartz & White, 2000). Formative feedback is usually presented as information to a learner in response to some action on the learner’s part. In addition to its influence on achievement, feedback is also depicted as a significant factor in motivating learning in addition to its influence on achievement.

According to Brophy, questions are one of the major vehicles for academic feedback (Brophy & Good, 1986). Brophy and Good reported that one of the differences between effective and less effective teachers was the frequency of
questions. The effective teachers asked approximately three times as many questions as the less effective teachers. Motivation has been shown to be an important mediating factor in learners’ performance and feedback can be a powerful motivator when delivered in response to goal-driven efforts (Covington & Omelich, 1984). The percentage of instructional time during which the student received feedback is positively related to student engagement rate and to achievement. In a study of junior high and high school teachers, Stallings, Cory, Fairweather, and Needels (1978) reported that the teachers of classes that made the greatest gains gave more instruction, asked more academic questions, and provided more feedback. The classroom culture should be one that invites students to ask questions and answer questions. Teachers should aim to create a culture in the classroom where learning is “cool,” and asking questions is not only okay but expected (Akey, 2006). Effective teachers provided more opportunities for academic responses, praised student successes, and provided support and corrective feedback when students did not respond correctly. In contrast, the less successful teachers spent less time interacting with students and more time in organizing rather than instructing. Formative feedback is also important because it can reduce uncertainty about how well (or poorly) the student is performing on a task (Ashford, 1986). Goal-directed feedback provides learners with information about their progress toward a desired goal (or set of goals), rather than providing feedback on discrete responses (i.e., responses to individual tasks). Research has shown that for a learner to remain motivated and engaged depends upon a close match between a learner’s goals and expectations that these goals can be met (Ashford, 1986).
Furthermore, because uncertainty is often unpleasant and may distract attention away from task performance, reducing uncertainty may lead to higher motivation and more efficient task strategies. The immediacy of feedback is crucial because it can help fix errors in real-time, producing greater immediate gains and more efficient learning. (Corbett & Anderson, 1990). When a student is learning a difficult new task (where difficult is relative to the learner’s capabilities), it is better to use immediate feedback, at least initially (Clariana, 1999). This provides a helpful safety net so the learner does not get bogged down and/or frustrated.

The feeling of being praised through public positive feedback is also reinforcing. Praise is often related to self esteem. The feeling of well being is a byproduct of doing well. In terms of cause and effect, low self esteem is a consequence of failing - not the cause. There are almost no findings showing that self-esteem causes anything at all. Rather self-esteem is caused by whole panoply of successes and failures in the world. The results of this are that artificial praise does not help in any way. The praise must be tied to successful performance. This does not mean, however that the student must be specifically successful. Teachers must be honest with students, but can praise incremental mastery. A student who gets the wrong answer, but has improved his/her understanding of the concept or tried harder, provides an opportunity for praise which is real. Therefore, teachers should be specific in their praise and make accurate comments about each student's response. The feedback should note that an answer was correct or incorrect and, in the best circumstances, would explain "why" (Brophy, 1987).
Furthermore, in his study of teacher behavior, Good had noted that teachers gave less accurate and less detailed feedback to students they perceived as low achievers, giving students perceived as high achievers more detailed and accurate feedback (Good, 1987). He also noted that Anglo students were more likely to get accurate and detailed feedback than Mexican American students. Rubovits and Maehr (1973) had noted a similar pattern when black and white students were in the same classroom. Therefore, teachers should give energetic, positive feedback and rewards to all students, with a special concentration of attention for the perceived low performers (Good, 1987).

One critical principle of a rewarding classroom culture is that students should be held accountable for everything they do. For example, homework that is checked has been found to contribute more to student achievement than homework that is assigned but not checked (Cooper, 1979). Also, questioning strategies that communicate high expectations for students, such as waiting for them to respond (Rowe 1974) and following up with students who do not initially give full responses (Brophy & Evertson, 1974), have been found to be associated with high achievement (Good, 1987).

According to Kuykendall, frequent rewards for success and persistence must be a part of the classroom experience (Kuykendall, 2004). She goes on to say it is crucial that teachers reward Black students in order to insure that their persistence, determination and hard work pay off. In teaching Black students, teachers should use a great deal of praise, infrequent criticism and constant reinforcement. This means
using the classroom walls to display the work of all students in areas where they are skilled. NCUST reports that schools that produce high-achieving urban students engage in public demonstrations that communicate and celebrate high achievement. Small and large successes are celebrated often. Conversations about improvement needs are frank, yet positive (NCUST, 2008).

Frederick Jones says incentive systems motivate students to start doing the right thing, maintain on-task behavior, and behave properly (Jones, 2000). Jones emphasizes learner motivation and classroom behavior. An incentive is something the teacher can provide that students like so much that in order to get it they will work throughout the period/week/month. He contends that incentive systems also can be used effectively to keep students on task and to get them to complete their work. There are two important systems that have come from Jones’ research. The first is Preferred Activity Time (PAT). PAT is a system that can benefit both the students and the teacher. The students are able to spend time having fun while learning after earning the privilege. The teacher has an incentive for the students to work hard and then can enjoy the activity with their students. The second system is simply positive reinforcement. The teacher can set up simple techniques of their choosing to reinforce behavior from a student that will teach that student the acceptable way to behave/act. These techniques can vary from award presentation after set amounts of time, recommendations sent home, point accumulation for buying power of rewards, or any reinforcer (anything that anyone will work for) that is applicable to the individual student/group. Indeed, he suggests that preferred activities, such as time on the
computer, free time, use of educational games, and free reading, can serve as motivational rewards for desired behaviors. Furthermore, Jones adds, the use of peer pressure represents a quite effective motivator. For example, time can be deducted from the class preferred-activity time when an individual student misbehaves. The deduction of time can be recorded, as Jones suggests, with a large stopwatch placed at the front of the room, so the whole class can see. If a large stopwatch is not available, a standard amount of time (e.g., one minute) can be deducted for each instance of misbehavior. Jones explains that PAT is all about teaching students time management and responsibility. He suggests that the teacher gains instructional time by having students be on task during teaching and then gains additional learning time by selecting PAT activities that are educational but fun, or preferred by students. If the PAT activities are not motivational, students will not be willing to work to earn them.

In an example used by Jones (2000), a science teacher used PAT as a fun way to review the day’s concepts with the students. Originally, the teacher spent ten minutes each day orally summarizing the important facts that the students needed to have gotten out of the lesson. Instead of losing the students interest everyday he turned the same amount of time into a quiz show style game. At the beginning of the semester the teams were set up and stayed together until the class ended. After a while the students asked to have a few minutes at the beginning for a short group review – a peer tutoring session! From there the students could earn extra game time if transition time dropped, there was less fooling around and clean up at the end of experiments.
was efficient. This allowed for a daily review that improved the students learning and their retention of the content.

The PAT time does not have to be a daily activity. It could be an activity that the students earn the minutes toward over an entire quarter or semester. An English teacher, Jones notes, has her Advanced Literature class earn minutes throughout the quarter. At the end they have enough points accumulated to watch one of the books they have read on video. Generally it takes two class periods so the students must have earned 120 points (where 1 point = 1 minute) to watch a film as their reward (Jones, 2000).

Several methods of providing formal incentives for learning have been found to be instructionally effective. One practical and effective method of rewarding students for appropriate, learning-oriented behavior is home-based reinforcement (Barth 1979) through provision of daily or weekly reports to parents on student behavior. Another is group contingencies (Dolan et al., 1992; Hayes, 1976), in which the entire class or groups within the class are rewarded on the basis of the behavior of the entire group.

Cooperative learning methods (Slavin, 1977) involve students working in small learning groups to master academic material. Forms of cooperative learning that have consistently increased student achievement have provided rewards to heterogeneous groups based on the learning of their members. This incentive system motivates students to encourage and help one another to achieve. Rewarding students
based on improvement over their own past performance has also been found to be an effective incentive system (Natriello, 1987)

Tangible rewards. Research shows that rewards that are tangible, public, and frequent can help raise urban student achievement. Tangible extrinsic rewards such as prizes, food, and certificates are seen by some researchers as positive reinforcement. Positive reinforcement through tangible rewards is when a particular action is rewarded with a tangible reward or prize and that action is more likely to recur in the future. For example, let’s say a child in a classroom who raises his hand gets paid $1 for participating. Pretty soon all of the children in the class answer more and more questions and thus the $1 has become a positive reinforcer since the external reward has increased the desire to answer questions. External incentives work best for routine learning tasks that hold little intrinsic appeal for students. They are better with tasks intended to produce mastery of specific skills or speed of performance or quantity of output than with tasks designed to encourage creativity or discovery. For example, external incentives can be used to motivate students to learn their multiplication facts since most students are not intrinsically inclined to learn them. For many academic tasks, it may not be possible to gain intrinsic satisfaction until one has gained a minimal level of proficiency. Reward is most effective when it is contingent on the attainment of some standard of performance (Cameron & Pierce, 1994)

Extrinsic rewards can be used to “jump start” the learning process until students are able to experience new sources of motivation from the activity itself. For example, a person usually learns the basics of reading and writing under compulsion
which is an external factor. The goal is to avoid punishment and to get praise of adults. But eventually, if the learning process has been successful, the person might get to enjoy his or her ability to read. At that point, the motivation becomes intrinsic since the person begins anticipating reading a book or writing a letter. Extrinsic incentives are also effective for students who have negative attitudes toward school and who are not motivated by traditional methods. When all other methods fail, a reinforcement system may be very valuable, especially when tangible reinforcements are used as “primers of behavior.” The incentives may serve as a concrete demonstration to the recipient that he can succeed and this is not a small accomplishment to an individual who has experienced persistent failures. Tangible reinforcements may also prompt an individual to engage in behaviors he previously avoided, therefore creating the opportunity for increased skill and task-related satisfaction which becomes intrinsic (Meece, 2001, p. 29).

Different incentive programs have been launched in several urban districts across the nation. The Rewarding Achievement (REACH) program, recently launched by the Council of Urban Professionals in partnership with the Pershing Square Foundation, will reward high achieving minority students in urban areas. It aims to improve the college readiness of low-income students, especially those from ethnic and racial groups that are underrepresented in higher education (Monahan, 2009). It seeks to motivate the most impoverished minority students not only to take Advanced Placement tests, but to do well on them. Students at 31 participating New York City schools can receive cash incentives based on their AP scores. Starting this school year,
students earning a score of 3—the first passing score—stand to make $500, a score of 4 earns $750, and a top score of 5 will be worth $1,000. In New York City last year, less than 1% of black students passed an AP test. In urban schools where the teachers are underpaid, academics success is devalued, and students are more focused on earning money for basic necessities than their studies, perhaps cash incentives or a student store with rewards for academic achievement will motivate youth to take their academics more seriously. Whitney Tilson, Council of Urban Professionals, Education Reform Chair says that rewarding hard work and high achievement will result in even higher motivation. Most inner city youth are from low-income households and thus do not have the same opportunities and resources that most other students do. They have very real and pressing financial needs to, for example, pay for personal bills, books, class trips and the senior prom. In many cases urban youth are forced to make a choice no student should have to make: between committing to their studies or taking a low-paying job. Cash incentives, Mr. Tilson says, can motivate urban youth to focus on school and not working at a restaurant in order to make ends meet (Monahan, 2009).

Incentives are also seen by Roland Fryer as a valuable approach to raising motivation of urban youth who have lost the love of learning (Fryer & Levitt, 2004). He says that the streets can beat out of youth the love of learning. Educators need to figure out a way to put the spark back in these kids. The PPIC and Fryer have painted a bleak picture showing that notions of “acting white” and being looked down upon by peers doing well in mathematics may have a more injurious effect on urban students than the quality of instruction they receive. But this crisis of negative peer pressure,
Fryer says, may also indicate that there is a need for more programs that boost and glorify achievement of low-scoring students could ‘spill over’ benefiting all students at the school. Fryer has launched several incentives programs throughout the nation that motivate urban students to do well in school and feel good about their success. One incentive program, *Earning by Learning*, pays urban kids in Dallas $2 for each book they read, up to a maximum of 20. He also has been involved in launching a cell phone incentive project in New York City. If the students keep up good ways, then they get a cell phone to use to call/text all their friends. They get evaluated every two weeks and receive more minutes based on their performance – doing homework daily, wearing their uniform, participating in class, listening to the teacher, etc. This program engages students in their schoolwork. It gives them a reason to care. Finally, Fryer has worked with Mayor Richard Bloomberg of New York City and created a program where fourth graders and seventh graders who take the new round of mandatory standardized tests that the city is introducing in the fall would be rewarded with at least $5. They would get more money for high scores, with a cap of $25 for fourth graders and $50 for seventh graders. In addition, each participating school would receive $5,000. These and other incentive programs have created a lot of controversy, but Fryer believes that educators have to find some way to engage kids. It’s not the perfect solution, but it is engaging at-risk kids in learning (Fryer & Levitt, 2004).

In the classroom, positive reinforcement motivates students to do what is right and to continue doing what is right. The author uses participation points on the board as a reward. He frequent, publicly and personally rewards students, especially the
target population with points or their grade on the board. At the end of the period, the author would have at least 20 student names on the board and their participation points that correspond to the number of time they actively participated in the interactive lecture discussion. Even if they incorrectly responded, the author still rewards them for trying. He does not wait for volunteers either. He usually randomly chooses kids and asks them to teach back a certain step in a math problem. Every student is in the hot seat and can be called on. Every student, even the “under the radar” shy student can be rewarded publicly with points to their grade. Rewarding should not be general. The individual student, especially the target population must feel rewarded or recognized. This means, “Montray, you get 3 points to your grade for doing the next step in solving the problem.” Another example is “Darshanae, I will give you 10 points to your grade if you can do this problem on the board.” The author constantly rewards success. Every response in class is rewarded with points on the board. It is visible and personal. He occasionally uses treats such as candy or Oreo cookies as prizes as well. Rewarding students does not have to involve money though. It could be participation points or public praise. It could be calling parents and saying positive compliments about the students. The C.R.E.A.T.E. model highly values rewarding students frequently, personally, and visibly.

Essential Curriculum Planning

According to the National Center for Urban School Transformation (2008), which studies the most successful urban school nation-wide, teachers in high-
achieving urban schools do not teach or assess everything; however, they teach and assess the most important things exceptionally well. In traditional urban schools the textbook is the curriculum. Usually, curriculum alignment processes have generated pacing charts designed to ensure that all standards are covered well. In contrast, NCUST shows that most high-performing Title I schools teach fewer objectives with greater depth (NCUST, 2008). Educators identify critical standards and focus attention on teaching them well. Mastering a skill requires a fair amount of focused practice (Anderson Corbett, Koedinger, & Pelletier, 1995). It is important to frequently restate essential principles (Maddox & Hoole, 1975). NCUST says that urban schools with successful results establish objective ways to determine that students have learned key concepts to a level that is at least as rigorous as required by their state assessment. By ensuring that students are learning the most critical standards well, educators reduce the amount of “drive-by” teaching and help students develop a depth of understanding. Educators feel a greater sense of efficacy when they aren’t pressed to “cover” so much. In high-achieving schools, teachers persist until they have evidence that students understand key content and are able to demonstrate key skills. Strong teachers use a variety of approaches designed to connect with students’ interests, backgrounds, cultures, and prior knowledge. Teachers adapt strategies until students succeed. Moreover, the Center says that leaders in successful urban schools eliminate pseudo-prerequisites to challenging content and they ensure that the real prerequisites are taught (NCUST, 2008).
During the summer, the author plans a pacing guide that is based on the key essential standards that are stated in the CA blueprint of standards. The CA blueprint informs educators what the key standards in every subject are. The blueprint tells the teacher what the California state exam will test heavily on. Also, the author covers only the essential pre-requisites that are needed to master the essential standards. Although his students in algebra come 4 to 5 grade levels behind and cannot proficiently work with fractions or division problem, he does not teach every pre-requisite concept they are lacking. He does not teach every fourth, fifth, and sixth grade concept. He only teaches what is needed to master algebra. The author only teaches those essential pre-requisites in the context of the major concept. If basic knowledge about exponents is needed to do the quadratic formula, then he teaches exponents when he teaches the quadratic formula. If an English teacher has 10th grade students who do not know what a noun or parts of speech are, the teacher should proceed with Shakespeare or writing an essay. He or should integrate the part of speech that is needed to understand Shakespeare when the time comes. Everything the teacher teaches must be connected to the bigger essential idea. Therefore, the author focuses on the essential ideas that will be seen on the state exam and the pre-requisite skills needed. By focusing on essential ideas and the essential pre-requisites, the author has more time to be creative and teach concepts that are not in the book. As a result of spending time focusing on the essential standards till mastery, the teacher can incorporate social justice ideas or do projects because he or she has more time to be creative. The class does not have to be completely based on the test. The teacher needs
to find a way to help students to succeed on the test and know the essential material
and still be creative and infuse other aspects of learning into the curriculum.

Assess & Master In Class

Assessment is a critical piece of instruction because it is a tool that allows the
student and teacher to measure student learning and therefore the effectiveness of the
teaching. Effective instruction is not just good teaching (Slavin, 1977). Moreover,
teaching is more than delivering a lesson or covering a textbook. The effectiveness of
a teacher is measured by the students’ learning. A teacher’s success is not seen in how
much he has covered but how many key concepts the student has actually mastered
(Noguera, 2003). A teacher who simply teaches without assessing would have no idea
what students know and do not know. A particular lesson might be too advanced for a
particular group of students, or it may be that some students already know the material
being taught. Some students may be learning the lesson quite well, while others are
missing key concepts and falling behind because they lack prerequisite skills for new
learning. The teacher who does not assess frequently would have no way to know who
needed additional help, and would have no way to provide it in any case. There would
be no way to question students to find out if they were getting the main points and
then to re-teach any concepts students were failing to grasp (Slavin, 1977). There
needs to be frequent formal or informal assessment to see that students are mastering
what is being taught (Slavin, 1977). It provides the student and teacher with feedback
about what has and has not been learned and should be used to inform instruction and
immediately address areas of weakness. NCUST (2008) portrays how most high-performing Title I schools use quick mini-assessments to help them know if students have mastered critical academic skills. In thriving schools, teachers constantly seek evidence that students are learning the standards they are trying to teach. The data generated shape teacher and school actions immediately so that students receive the support they need. Assessment does not detract from teaching because assessment is an integral part of teaching teachers in high-performing schools are more likely to seek considerable student feedback during each lesson, especially from students with greater needs (NCUST, 2008).

*Feedback is a powerful assessment tool.* Research by Marzano and other educators reveals that providing students with specific information about their standing in terms of particular objectives increases their achievement by 37 percentile points (Marzano et al., 2001). The most powerful single modification that enhances achievement is feedback. The simplest prescription for improving education must be “dollops of feedback” (Marzano et al., 2001). Teachers may receive formative feedback and use it as the basis for altering instruction (Brophy, 1986). In response to the feedback they receive, teachers adapt methods, examples, and strategies frequently. They modify teaching techniques in ways that are more likely to build upon the backgrounds, prior knowledge, cultures, and interests of students. They make learning exciting for students. NCUST also reports that accountability systems should also focus far more attention on identifying and celebrating successes (NCUST, 2008).
NCUST states that high achieving urban teachers use frequent interim formal assessments to gauge student progress toward learning key content. Great teachers see assessments more as starting blocks than finish lines. They use results to improve instruction immediately. Assessment information is mined for clues about how to improve student understanding of key learning objectives (NCUST, 2008).

Assessment should drive instruction and also the necessary intervention that is critical for those students who have not mastered key objectives. The intervention such as re-teaching essential concepts, extra practice, or individual help needs to be immediate based on assessment data. NCUST shows that in high-performing schools, systems including teachers guarantee that student learning needs are identified promptly.

NCUST says good teachers in urban schools are always looking at student work to see if students have mastered what they’ve tried to teach. Then they ask themselves, “How can we teach this better?” Quality educators are continuously learning how to adapt instruction in ways that help students learn well. Teachers in successful urban schools have prompt access to actionable data which helps them to ensure the academic growth of all students. They use data to help stay focused on improvement/growth (even when proficiency has been achieved). As well, systems have been structured to ensure that identified needs will be addressed in a timely, effective manner (NCUST, 2008).

_Scaffolding._ A major part of assessment driven instruction that is critical to urban student success is scaffolding the lesson. The term ‘scaffolding’ was developed as a metaphor to describe the type of assistance offered by a teacher or peer to support
learning. Scaffolding is actually a bridge used to build upon what students already know to arrive at something they do not know. In the process of scaffolding, the teacher helps the student master a task or concept that the student is initially unable to grasp independently. The teacher offers assistance with only those skills that are beyond the student’s capability. Of great importance is allowing the student to complete as much of the task as possible, unassisted. The teacher only attempts to help the student with tasks that are just beyond his current capability. Student errors are expected, but, with teacher feedback and prompting, the student is able to achieve the task or goal. When the student takes responsibility for or masters the task, the teacher begins the process of “fading”, or the gradual removal of the scaffolding, which allows the student to work independently. If new material is presented in a pattern or culturally responsive framework that the learner can relate to, it is more readily learned and retained. New material will be more easily learned if the learner is helped to see its relationship to what she or he already knows. If scaffolding is properly administered, it will act as an enabler, not as a disabler (Benson, 1997).

In the author’s class, assessing students or checking for understanding is critical to their success. The first aspect of assessment that the author uses is scaffolding the lesson or instruction. He breaks down a big concept into smaller steps and helps students build mastery step by step starting from where students are at. The goal is to equip the target population with the foundational knowledge needed to master the objective and ultimately enable them to perform the skill independently. It is important to dissect an essential standard or concept into the key steps that are
needed to master the essential idea. The author makes sure the students especially the
target population masters each key step before moving on to the next step. For
example, the quadratic formula involves many skills. These skills include evaluate
expressions by plugging in numbers for variables, taking the square root, using
exponents, and simplifying expressions. Without having a strong grasp of these skills,
it will be difficult to use the quadratic formula. Therefore, the author dedicates at least
a day for each skill until the students are completely ready to tackle the whole
quadratic formula. Although the textbook may ask the teacher to teach the formula in
one day, the author teaches based on student learning needs and not the book. Once
the student understands how to evaluate an expression, the author builds on what they
already know and then introduces the next skills. As Tiberius and Tipping indicate,
new material will be more easily learned if the learner is helped to see its relationship
to what she or he already knows (Tiberius & Tipping, 1990).

**Guided mastery.** The next part of assessment that the author strives for is
guided mastery. During the interactive lecture or guided instruction, the author checks
for understanding until he is certain that they can independently do the problems. How
does he ensure guided mastery? He checks for understanding step A before he goes on
to step B. He never teaches more than a step before checking for understanding. He
never says more than a few words before asking a question. The most powerful
method of assessing students is asking students to “teach back.” This means the
teacher teaches a step in a problem or concept. Then immediately, the students have to
teach this concept back to the class. That is how a teacher can tell if a student
understands the material that has been taught. The author constantly asks questions and more questions. His questions are not “yes” or “no” questions. They ask the students to explain the rationale for the next part of the Kreb cycle or teach back the next step in graphing a line in slope intercept form. He asks questions and asks them to teach back the concept step by step. If students can confidently teach back the concept with as little assistance as possible and show a sense of ownership, then they are ready to try the problems on their own.

Who should the teacher particularly assess in the class? The author assesses everyone but he especially focus on the target population personally during my lecture. He does not wait for volunteer hands. He personally step by step calls on different students to do the problem. But he frequently calls on the target population to teach back the concept. It is important to remember that the target population may not understand right away. They act out because of frustration with the concept or stay under the radar and won’t reveal their confusion. So he personally calls on them and makes them teach back the concept. For example, “John, you have to teach me how to solve this equation for 10 points to your grade.” A history teacher could say, “Michelle, teach me the four major causes of World War I for 5 points to your grade.” If they do not know how to do the problem, the teacher will guide them through the problem and use teach back again to reassess the same student and other target population students. He will also offer them 5 or 10 points to their grade and put these points on the board so they feel rewarded publicly. Therefore, it is critical to personally call on the target population step by step and have them teach back the
concept. Everyone must be in the hot seat. The teacher should not wait for hands to go up. Everyone, especially the target population is in the hot seat.

Independent exit price mastery. A key element of assessment according to the C.R.E.A.T.E. model is the independent exit price. In the “Rigorous and Rewarding Expectations” section, a rigorous exit price was important because it kept the students accountable and forced them to have to turn something in by the end of the period. They could not escape because the teacher will chase them down and keep them after school. In this section on assessment, the independent exit price plays an even more important role. The independent exit price allows the teacher and student to see if the student can demonstrate mastery of the objective himself or herself. It allows for the student and teacher to see if the student really learned the objective. If one teaches someone else to drive a car, the teacher cannot accurately tell if that person knows how to drive simply by asking questions or by watching them nod their head when asked questions. They have to be able to drive themselves from point A to point B. They need to have time and an opportunity to show the teacher if they can actually drive behind the wheel.

In the classroom, the students must be able to show the teacher if they can do 20 out of 30 algebra or biology problems by themselves before leaving. In the author’s class, the students must give this exit price to him before leaving or he has to at least grade it before they leave. This also means the students are accountable for learning the objective and also he can accurately tell if the students can do the problem by themselves. If they can show the teacher how to do the problem or show the teacher
how to write an effective thesis, then the teacher can conclude that they learned the objective and that the teaching was effective. If they were nodding their head throughout the whole period, but cannot do 20 out of 30 problems by themselves, then the teaching was not as effective as maybe the teacher thought it was. If the students in the author’s class cannot do the 15-20 problems themselves, then they did not learn the objective. This lack of success on the independent exit price would imply that the author would have to re-teach the missed concepts based on the exit price. The exit price gives him a chance to really see if the students got it. The Association for Supervision and Curriculum Development conclude that people only remember 10 to 20 % of what they hear. But they learn and remember 80 to 90% of what they do and say over and over (Tiberius & Tipping, 1990). In order to learn anything well, students need to do it a number of times independently if possible. Therefore, practice in the form of an independent exit price in the classroom is the most effective way for a student to internalize the concept and see if he or she understands it.

While the independent exit price gives the teacher a chance to see what areas the students did not get, it is also important to make sure that he gives the students the time to do the exit price. The teacher cannot lecture for 45 minutes and then give 5 minutes for the exit price. The exit price has to be rigorous and the students need time to practice themselves. The teacher should not use homework as a primary assessment tool. The most effective time and place to tell if students can do the problem is in the class during class time. The teacher in an urban classroom cannot fall for the homework lies. These homework lies include the student not being able to do the
homework correctly. They might do them all wrong. Also, they might copy their friend’s work and turn it in. The student might do the homework solely for the purpose for turning it in and not learning. Then there is the high possibility that the student may not even do the homework. From the author’s experience, maybe 5 out of 25 kids really actually try their best on homework. Therefore, the independent exit price is the best way to see if the students really understand the material because it forces them to do it in class and turn it in.

Test Model & Test Taking Strategies

Research has indicated that culturally responsive instruction, rigorous expectations, and assessment of essential concepts are critical elements of urban student success. While urban students may understand the content as a result of quality instruction, they may not be able to succeed on standardized tests such as the California Standards Test. Although, there is much debate on the use on standardized tests, it is clear that tests are not going to disappear. Test preparation is significant because tests are still going to be used as a major indicator of whether students are proficient in core subjects. Tests such as the SAT and GRE are going to impact entrance into college and other institutions of higher educations. Tests are used by many employers to help determine who can get a job and who won’t. In order to be a lawyer one must pass the LSAT and doctors must pass the MCAT. Therefore, if educators are doing justice to urban students, especially the target population, and
arming them with the tools to survive and compete in the real world, then educators must help them to succeed on these standardized exams.

Test preparation is also significant because students may understand the content but not the test question. They may be proficient in the math but may fail the test because they do not comprehend the wording on the test. Educators are generally aware of the long-standing argument that "intelligence" (IQ) tests are culturally biased. Courts in California, Indiana, and other states have grappled with the problem and concluded that minorities should not be treated according to the results of biased IQ tests and other instruments. Tests such as the Stanford-Binet Intelligence Test include items that assess moral opinions and other values that reflect social class bias (Parker, 1981). In addition, most standard tests reflect other forms of biases (Taylor, 1987). No test can be culture-free because no test can incorporate materials and skills that are common to all cultures (Lawler, 1978). The structural format of the test itself, e.g., multiple choice and timed segments, is also a deterrent for many students from diverse cultures. Lower scores of Black youth and females on such tests are more often an indication of cultural conflict than of low intelligence.

Sources of communication and communication-related biases in tests and assessment procedures.

Situational Bias Mismatches between examiner and examinee regarding the societal rules of language: e.g., sarcastic answers to obvious questions
(Examiner: What time does the clock say?
Examinee: Everybody knows clocks do not talk).

**Directions Bias**
Test directions involve linguistic complexities unfamiliar to the examinee: e.g., "None of the following is true except..." is incorrectly interpreted as "All of the following is true except..."

**Value Bias**
Examinee is required to exhibit a particular moral or ethical preference: e.g., One who is dishonest is (a) an offender; (b) a politician; (c) an officer; (d) an ambassador

**Linguistic Bias**
Test presumes that examinee is competent in standard English: e.g., Which sentence is ungrammatical?
(a) They saw Rose; (b) You done it wrong; (c) My brother has never eaten; (d) Do not use too much.

**Format Bias**
Test procedures or requirements are inconsistent with examinee's cognitive and/or learning style: e.g., "Select the best answer to the following..."

**Cultural Bias**
Examiner erroneously interprets cultural practices of examinee: Misinterpretations e.g., a child who exhibits silence as a natural reaction to an unfamiliar adult examiner is diagnosed as nonverbal or a child who does not respond quickly to test items is labeled unknowledgeable. (Taylor, 1987)
Test preparation is also crucial because many urban students of color have internalized the notion they cannot succeed on tests and in school. If they escape from tests or are told that they cannot perform well on tests, this will simply reinforce their own feelings of inadequacy. Students of color often fear test taking simply because their failure would reinforce the stereotype that they are bound to fail (Ogbu, 1978). Fear of failure and rejection of success often result from the factors discussed by John Ogbu. Many Black youth often reject success as a “White” behavioral norm or as a norm pleasing to the teacher, their perceived “enemy.” Students with a low self-image who fear failure are likely to stop trying. Research shows that a student with a positive self-image can actually benefit from failure by using it to modify and motivate subsequent behavior (Melmed & Smith, 1982). Those students who have been led to believe in themselves are able to overcome failure because they have been taught to strive for success and to set high standards. These students have high achievement motivation—a learned behavior. Children who reject success are similar to children who fear failure in that they too are likely to put forth very little effort (Fordham & Ogbu, 1986). The rejection of success by some Black students demonstrates an unwillingness or inability to set realistic goals; a favorable response to negative peer pressure; and a diminished lack of motivation.

Therefore, it may be crucial that teachers take an aggressive role in encouraging and supporting urban students to believe they succeed on tests. If they can show their understanding on tests and through other types of assessments, they will have defied the stereotype that says they cannot perform well on exams. Teachers
can help students overcome fear of failure and rejection of success. By exposing students to test models and the wording of test questions, the teacher can build student confidence because they will feel like they are intelligent and can succeed on tests they may have feared in the past. When self-confidence is developed and allowed to thrive, students can more easily be taught dominant cultural styles of success.

Teachers must be flexible enough to allow minority youth to experience school success using the cultural strengths, tools, language and styles they already possess. These youth must be able to feel that success can look and sound Black as well as White. They must feel that success in school will not require a rejection of their home and family culture. Students must continually be encouraged to see all failure as a learning experience. The feeling of confidence which comes from encouragement will make it easier for failing students to constructively use failure and to persist. Their successful performance on standardized tests such as the CST will help raise their self confidence and self esteem and may influence their perceptions about their potential in the future.

The author exposes his students to the algebra test models frequently. He spends at least one month reviewing previous test models before the students have to take a major standardized test such as the California Standardized Test for Algebra. They are exposed to the language of the test well before they see the test. They see how ridiculous some of those questions are that use tricky language like “all are true except . . .” By the time they have to take the test, they feel ready because they have seen the type of question they will have to face. In sports, football players have to play
in a scrimmage before the actual game. In boxing, the fighter needs to spar first before the actual fight. Educators need to do the same for our students and prepare them for the battle seen in the form of a test.

**Extra One–on-One Intervention**

This final section briefly discusses the importance of individualized one–on-one assistance for struggling students. This aspect of C.R.E.A.T.E. stresses the importance of providing extra one on one help for the target population. Despite the culturally responsive instruction, checking for understanding in a step by step personal manner and rigorous exit price, there may be a few kids who still are left behind. They need that one on one attention this could be during class time, lunch, or after school. Perhaps the most difficult problem of school and classroom organization is accommodating instruction to the needs of students with different levels of prior knowledge and different learning rates. If a teacher presents a lesson on long division to a heterogeneous class, some students may fail to learn it because they have not mastered such prerequisite skills as subtraction, multiplication, or simple division. If the instructional pace is too rapid, the students lacking prerequisite skills will be left behind. The most extreme form of accommodation to individual differences is individualized instruction, in which students work entirely at their own level and rate. Individualized instruction or one on one after school tutoring solves the problem of providing appropriate levels of instruction (Slavin, 1977). The student gets one on one attention that he or she may not be receiving during class because the teacher has to
keep the other students also engaged. Research shows how the assertiveness of high-achieving students, especially males, resulted from more individual help from the teacher (Sadker & Sadker, 2000).

During the independent exit price period in the classroom, the author circulates to the target population and is able to help kids individually. He is able to clarify many concepts for students who would have been lost without this individualized help. But he is not necessarily able to help everyone who needs one-on-one. Therefore, he uses his best students to collaborate and help those struggling kids. He uses what he calls his “superstar tutors” to help other kids. Superstar tutors are the teacher’s allies and can really help to address the individualized needs of certain students. When they are done with their work, he tells them to help other struggling kids and give them 30 points for doing so. Sometimes, the author intentionally seats a superstar tutor with a student who struggles and tells the superstar to help the other student after having finished his or her own work. The superstar tutor will get 25 points for helping the other struggling student to understand the material without simply giving the answer. Research by Tiberius and Tipping (1990) show that no one strategy so profoundly changes the dynamic in the classroom as much as cooperative work does. When students work in groups, their learning is active and personalized. Collaborative work reflects the workplace, and it is refreshing for both students and teacher.

Collaborative learning gives students an opportunity to develop many skills:

- negotiation and debate
- responsibility and time management
teamwork and leadership
creative and critical thinking

Although not specifically linked to course content, these skills support lifelong learning in both personal and career situations. Furthermore, weaker students benefit by seeing how more experienced students go about solving problems, and stronger students reinforce their knowledge by teaching someone else (Tiberius & Tipping, 1990). Therefore, the teacher should use the exit price time to circulate and help kids individually and also use superstar tutors to collaboratively help their peers.

VII. Professional Development for Teachers

This section examines the research regarding creating an effective professional development plan that would inspire and empower its teachers to better serve their students. The Stanford University report Getting Down to Facts concluded that the state’s infrastructure for professional development for administrators needs strengthening (Darling-Hammond, 2006). Darling-Hammond emphatically states that there are clear indicators of the need for more effective educational leader professional development. Research shows that high-quality staff development efforts can change both teachers' self-expectations and foster improved student learning (Guskey, 1982, cited in Bamburg 1994). The National Staff Development Council (NSDC) identifies professional development as an issue of equity if it will help teachers to become more effective in serving students whose backgrounds are very different from their own or the mainstream (NSDC, 2001). Research revolving around the issue of professional development for urban school teachers justifies it as necessary because a school’s
most valuable resource and greatest investment is its teachers (Thompson, 2004). The school’s leaders have a crucial responsibility to help teachers to develop their abilities and perform at their highest potential. The leader of a school must recognize that no one person can carry the responsibility of school improvement (Yukl, 2006). It is imperative that school leaders know their teachers well enough to identify their strengths and use those strengths (Thompson, 2004). Professional development is important because it allows teachers to examine their own teaching practices and discuss or learn ways to improve student learning. Student learning must be at the heart of any professional development event at a school. In order to implement a successful professional development there are several key aspects that are important for a leader to consider.

**Define the Problem**

The first major step would be to define the problem that the professional development plan is attempting to address (Zepeda, 2008). What is the specific problem or issue that is so important that there must be a professional development plan? Furthermore, the underlying issue that *triggers* the professional development plan should be relevant to the teachers and their needs. The leaders of the professional development plan must inspire and get the teachers to buy into accepting that the underlying issue is a serious problem that exists at the school (Zepeda, 2008). Furthermore, a transformational leader is anyone who influences a group toward obtaining a particular result through influence and relationships (Burns, 1978).
Ultimate Goal of Workshop

The next step the leader must take is to develop the vision or goals for the professional development plan. What is the specific goal of the professional development plan as far as addressing the issue? What is the student-learning outcome that is expected? For example, algebra is the most failed class at West and perhaps throughout urban America. Last year less than 3% of the students at West were proficient in algebra and 80% were far below basic! The professional development plan could state that the ultimate goal is that 50% of students at West High School will become proficient in algebra as measured by CST scores. This will be difficult but the expectations for the staff must be high. It is critical that the teachers buy into the importance of this proficiency goal. They must see how the information presented will be useful to them when they return to their classrooms in addressing the issue that triggered the need for professional development. Teachers must get excited every time they visualize 50% of West kids being proficient. The school leadership has to help the staff visualize students having careers in computer, business, or getting admission into technical vocations as a result of their skills in algebra. This outcome or goal of proficiency should create a healthy ecstasy in the staff that will spur them to action.

Training Staff to Implement the Solution

The professional development plan should explicitly show the staff how to get the students of color to succeed. The event must show how the goal of 50% proficiency will be accomplished. The “how” piece of the professional development plan must specifically address student engagement for black and Latinos. But again it
is impossible to even have a purposeful discussion about the solution if the staff does not believe that there is a problem and get excited about the potential benefits if the goal is achieved. Professional development programs should allow for teachers to engage in a discussion of best teaching and learning practices and processes that will help them to reach their students. They should be rooted in evidence-based experiences. and also the best available research. For example, at West High School, the author’s algebra class has had the highest scores in the entire district on every major assessment. His students and their success have been the subject of presentations at statewide conferences on how to get urban students to succeed in math. After reflecting on his own teaching practices and successful results, interviewing many students and talking to teachers who have also succeeded with students of color, the author has concluded that the fundamental cause for the achievement gap is that there is a huge disconnect between most of the teachers who teach using traditional methods and black and Latino students they serve. The most significant issue facing educators at West is learning how to engage these youth of color through culturally relevant instruction. Assuming this is true, the objective of the professional development plan would be that all teachers understand how to use culturally relevant instruction in classrooms.

Leadership should use professional development approaches to promote the use of culturally relevant material and engaging modes of teaching in order to get students to master subject area as evidenced by standardized tests. But the training must have dynamic speakers who can actively engage the teaching staff and train
them. They should invite speakers such as Lisa Delpit (1995) to inspire teachers to learn about their students’ culture and use this background knowledge to make instruction more meaningful and relevant. The training should be interactive and the teachers must be actively participating. They should be able to put their knowledge into immediate action when they step into their classroom.

Accountability and Assessment

The final aspect of a successful professional development plan that a school leader must consider is perhaps the most important part. Even if teachers have accepted that there is a problem, become excited about the solution, and have learned the strategies to make a change, the ultimate challenge will be how to get teachers to actually implement these strategies in the classroom after applauding the training. That is the hard part. There must be accountability and a clear way to assess the outcomes and evaluate the effectiveness of the session. National Center for Urban School Transformation (NCUST) reports that any professional development funded should include a long-term strategy for assessing and promoting quality implementation (NCUST, 2008). The ultimate measure of success should be seen in the student learning that takes place after the professional development training. Therefore, the principal should begin including in the evaluation process if the teachers are using culturally relevant modes of teaching to engage the students. Teachers have to be held up to high expectations and required to implement culturally relevant instructional practices. Students’ standardized test scores must be analyzed every quarter after district quarterly exams and the effectiveness of culturally relevant teaching will also
be studied through this lens. The areas of progress must be monitored and teachers must collaborate in order to discuss what areas the students are improving in.

The leadership must also provide incentives for teachers to collaborate with each other and discuss effective culturally relevant teaching practices to get their students to learn at their highest potential. For example, the author uses animal analogies to teach algebra. Another teacher may use football to teach the math. The best practices and areas of progress or lack of progress must all be discussed among teachers and administration. Teachers should get paid to meet twice a week and discuss how to engage their black and Latino students using relevant instruction. Also, students should be interviewed every week and this way leadership can get a sense if culturally relevant instruction is taking place and if it is having a positive effect on students’ attitudes about the teaching.

Conclusion

There are many strategies that teachers and school leaders can implement to greatly enhance student motivation and investment in their educational experience. The research reviewed showed how teachers are key players in fostering student engagement and increasing student achievement (Akey, 2006). They work directly with the students and typically are the most influential in a student’s educational experience. Creating a culture of achievement in their classroom, developing interactive and relevant lessons and activities, and being encouraging and supportive to students are all ways in which teachers can foster student engagement in the classroom. High quality instruction—one that is rigorous, aligned with content
standards, and uses instructional strategies to meet the academic needs of all students—also is a key factor in promoting a culture of engagement and achievement in the classroom (Weiss & Pasley, 2004). Teachers need to select a goal that is challenging but attainable and find creative ways for students to work toward achieving the goal. Monitoring student progress throughout the school year also will keep students focused academically and invested in their learning. When students feel challenged, they are less likely to be bored and disengaged (Akey, 2006). Teachers should aim to create a culture in the classroom where learning is “cool,” and asking questions is not only okay but expected. It may take some time to develop this type of environment, but it can be done by setting clear, high, consistent yet attainable expectations for all students.
Chapter 3

METHODOLOGY

Introduction

This project focused on documenting the impact C.R.E.A.T.E. could have on the success other math teachers experienced with their students in foundational math classrooms, specifically algebra I and geometry. The study revolved around the issue of replicating the success the author has had with C.R.E.A.T.E. in other classrooms. The documentation of student learning outcomes that result from the implementation of C.R.E.A.T.E. in other classrooms may provide evidence for administrators at the district and state level to determine if the C.R.E.A.T.E. model should be implemented as a way to address the pressing crisis of failure in math for diverse urban populations. This section on the methodology presents a discussion of the specific steps used in the literature review and collection of data for the study.

Setting

The setting for the study was West High School. West High School was established in 1932 and is the oldest high school in the district. Nestled in the freely urban community of Crown Park in Sacramento, California, West High School has roughly 2,187 students (Source: CDE). It has a very diverse student population. The three major ethnic groups are Hispanic, African American and Asian. There are 1,049 female students and 1,138 male students. Thirty-five percent of the student population is considered English Learner. West High School students come from North Sacramento, with a majority coming from the Crown Park neighborhood. Crown Park
is a community plagued by poverty, high criminal activity, teen pregnancy, gangs, and drop-outs. Crown Park is an ethnically diverse community, comprised of approximately 31% African-American, 17% Caucasian, 30% Asian and Pacific Islander, 16% Latino, and 6% mixed race and other. It is a strongly residential community with 75% of the households consisting of families. Single female-headed households are the second largest family household in North Sacramento and Crown Park, and are 50% more likely than all other communities in Sacramento County. Over 90% of the school qualifies for free or reduced price meals.

Population and Sample

This study involved all math teachers who taught algebra I and geometry. There were three algebra I teachers including the author and five geometry teachers. The students who received instruction in algebra I and geometry were also a significant part of the population. The study involved 238 students who took algebra I. It also involved 492 students who took geometry. The grades collected in 2008 indicated that there was a disproportionate number of students who received D’s and F’s. In algebra, 51% of the students received either a D or F. Excluding the C.R.E.A.T.E. students, 80% of students in algebra classes received a D or F. In geometry classes, 50% received either a D or an F. Altogether, roughly 60% of all students in foundational math classes at X received either a D or F. Even more noteworthy is that there were more F grades given out than any other grade for students taking a math class. Furthermore, in 2009, state testing results from the California Standards Test (CST) showed that the school was only 30% basic and
above in algebra and 27% basic or above in geometry. Therefore, the overwhelming majority, 71%, of the students enrolled in a foundational math class at West High School, are below basic.

Research Design

Students were randomly distributed among the teachers so that student characteristics including ethnicity, socio-economic levels, behavior, and skill level were similar for both groups. This is significant because the author wanted to focus on the impact of C.R.E.A.T.E. and mitigate the effect other variables such as a disproportionate number of advanced students in one class would have on a teacher’s results. This study only took into account student learning outcomes that were evident during the first semester at West High School. Every year, the 1st semester has 88 instructional days and is divided into 2 quarters. There is a district wide exam for each math class at the end of each 9 week quarter. The 2nd quarter district exam is also referred to as the semester final exam. Students’ performance on the final exam usually has a major impact on the semester grade the students receive which is reflected on their official student transcript. All students are required to take these exams for their grade and all teachers are required to administer the exam. They are not allowed to assist students in any way during the 1st quarter district exam and 2nd quarter exam (final). All formal testing procedures are to be followed.

There were two groups of teachers for the purposes of studying the impact of C.R.E.A.T.E. on student success. The teachers who taught math this year using the C.R.E.A.T.E model were the experimental group. Teachers who agreed to use the
C.R.E.A.T.E. model also agreed to be accountable and be observed. They agreed to have their student learning outcomes available for discussion and to have their teaching evaluated to see how effectively they were implementing the model. The control group was the same teachers who had taught math last year. None of those teachers knew about or used the instructional model in the classroom. Therefore the control group was the algebra I and geometry teachers during the fall semester of 2008. The experimental group was the same algebra I and geometry teachers who used the C.R.E.A.T.E model this fall semester of 2009.

Data Collection

*Performance on Semester Final District-Wide Exam*

In order to study the impact the C.R.E.A.T.E model may have had on the success math teachers experienced with their students, it was critical to analyze teachers’ proficiency ratings based on the semester final exam in 2008 and the semester final exam in 2009. The teachers’ proficiency rating represented the percent of students who scored basic or above in that teacher’s class on the semester final exam. Hence the data reflecting the percent of students who performed at the basic level or above in each math teacher’s class on the semester final exam for Fall 2008 and Fall 2009 was collected. Last year, there was an overwhelmingly large number of students who performed at the below basic level in every math subject area. A significant goal of training other staff to use the C.R.E.A.T.E. model in their classrooms was to increase the percent of students who performed at basic and above on the standardized math exams in each math teacher’s classroom. Therefore, the
percent of students who scored basic or above on the semester final standardized
district exams in math teachers’ classrooms pre-C.R.E.A.T.E., in 2008, was a
significant measure of student learning and teacher effectiveness for the control group.
This student learning data was compared to the percent of students who scored basic
and above on the semester final standardized district exam in the experimental
C.R.E.A.T.E. classrooms taught by the same teachers during the fall 2009 or post-
C.R.E.A.T.E.. The final exams for 2009 were similar to the final exams for 2008 since
they covered the same math topics. Furthermore, it was critical to see if there was a
significant difference in the impact teachers had on student learning and student
success on district math exams before and after using the C.R.E.A.T.E instructional
model.

Grade Performance in Class

There was also collection of data that reflected grade distribution in both
groups. Grades were important to look at because not every student is a good test
taker. Perhaps some students demonstrated a strong mastery of the math concepts in
other ways that were reflected in the grade. The grade given by the teacher hopefully
reflected student learning that may have not been seen in the test scores. The goal in
training teachers to use the C.R.E.A.T.E. model was that the grade point average
(G.P.A.) reflecting the average grade given by teachers to students was higher after the
use of the C.R.E.A.T.E. model in the classroom. A passing grade was any grade above
a C grade which represented satisfactory learning. Any grade below C was
unsatisfactory and was considered as failing. An A grade was 4 grade points. A B
grade was 3 points. A C grade was 2 points. A D grade was 1 grade point. Finally, an F grade was worth 0 points. A G.P.A. for a teacher that was below a 1.5 means that the average grade given by the teacher was either a D or F and therefore was a failing grade. The G.P.A. for teachers at the end of the fall semester of 2008 was compared to the G.P.A. for the same teachers at the end of the fall after they had implemented the C.R.E.A.T.E instructional model. Furthermore, it was important to look at if there was progress or a significant difference between the G.P.A. for the math teachers during fall semester of 2008 and their G.P.A. during the fall semester of 2009 after they had used the C.R.E.A.T.E. model.

Observation Field Notes

The final source of data was the field notes the author took during observation of C.R.E.A.T.E. teachers. The author had a schedule made that he used to guide his observations of math teachers. He observed every teacher once or twice a week. Usually, he stayed for 30 to 45 minutes in the teacher’s classroom. While observing teachers, the author used an observational protocol (see Appendix) for the C.R.E.A.T.E. model and took notes based on how well the instruction was aligned with the practices emphasized by the model. After looking over the field notes, the author would write a brief reflection on what practices he observed and how effectively the teacher was implementing the C.R.E.A.T.E. model. After taking notes and reflecting on what he had seen, he would discuss his observations with the teacher at a later time. These observation notes were an important source of data that helped the author to analyze what practices stressed in the model, were common to teachers
who made the most progress in their student outcomes. Finally, the notes were significant because they allowed the author to understand the aspects of the C.R.E.A.T.E. model that were easiest to implement and that had the most impact on student learning.

Data Analysis

There was a comparative analysis conducted of the student learning data for the control group of teachers who taught math in 2008 and for the same teachers who used the C.R.E.A.T.E. model during the fall semester of 2009. The analysis involved looking at quantitative measures such as teachers’ student proficiency rates on semester final district exam and the G.P.A. or average semester final grade given to students in their math classes. Furthermore, a t-test was used to determine if the difference in the proficiency ratings and the G.P.A. for the math teachers between fall semester of 2008 and fall semester of 2009 after the application of the C.R.E.A.T.E. model was statistically significant. If there was a significant discrepancy between teachers’ rates of success with students in the fall 2008 and the fall 2009, then this would have indicated that the C.R.E.A.T.E. model may have had either a positive or negative impact on student achievement. If the student achievement results showed that the C.R.E.A.T.E. model did not produce any significant gains for the experimental group compared to the control group, then this would have indicated that further research needed to be done revolving around the limitations of the model and the factors that may have made it difficult for teachers to successfully implement. It may have turned out that the success of the model highly depended on teacher
characteristics such as humor and charisma that were difficult to replicate. On the other hand, if the performance of the experimental group was clearly higher than the control group, this would have indicated that the C.R.E.A.T.E. model was effective and that it could be a pedagogical approach that was worth considering for other teachers throughout the school and district as a way of raising student achievement in mathematics.

Research Questions

Hypothesis 1

1. What was the difference between the percent of students who achieve basic and above on the district semester final exam for the teachers in the traditional control group of fall semester of 2008 and in the experimental group that used the C.R.E.A.T.E. instructional model in the fall semester of 2009?

Null Hypothesis: There was no difference between the percent of students who achieved basic and above on the semester final district exam for the teachers in the traditional control group and in the experimental group that used the C.R.E.A.T.E. instructional model?

Alternative Hypothesis: There was a difference between the percent of students who achieved basic and above on the semester final district exam for the teachers in the traditional control group and in the experimental group that used the C.R.E.A.T.E. instructional model?
Hypothesis 2

2. What was the difference between the grade point average reflecting the grade distribution given to students by teachers in the control group during fall 2008 and the grade point average for the experimental group of C.R.E.A.T.E teachers during the fall 2009?

Null Hypothesis: There was no difference between the grade point average for teachers in the traditional control group and in the experimental group that used the C.R.E.A.T.E. instructional model?

Alternative Hypothesis: There was a difference between the grade point average for teachers in the traditional control group and in the experimental group that used the C.R.E.A.T.E. instructional model?
Chapter 4

DATA FINDINGS AND ANALYSIS

Too many urban students of color are failing or performing below basic in mathematics throughout the state. In the midst of consistent algebra failure at West High School, the author has been able to achieve different results with low income urban students in algebra. His students have consistently outperformed their peers throughout the entire Grand District and state of California. This study revolved around the issue of replicating the success the author has had with C.R.E.A.T.E. in other classrooms. This section provides results of data analyses and findings of the study. The results and conclusions that can be drawn from the analysis of the impact of the C.R.E.A.T.E. model on teachers’ success with students may provide evidence for administrators at the district and state level to determine if the C.R.E.A.T.E. model should be implemented as a way to address the pressing crisis of failure in math for diverse urban populations.

Overview of Study

This study involved all math teachers who taught algebra I and geometry in the fall 2008 and fall 2009. The teachers who taught math this year during the fall semester of 2009 using the C.R.E.A.T.E model were the experimental group. The control group was the same teachers who had taught math last year during the fall semester of 2008 before the creation of the C.R.E.A.T.E. model. Students were randomly distributed among the teachers so that student characteristics including
ethnicity, socio-economic levels, behavior, and skill level would be similar for both groups.

The first major type of data that was looked at was the teachers’ student proficiency ratings on the first semester final exam for fall 2009 and the first semester final exam for fall 2008. The teachers’ student proficiency rating represented the percent of students who scored basic or above in that teacher’s class on the semester final exam. The teachers’ student proficiency ratings on the math final exam in fall 2008 were pre-C.R.E.A.T.E. The teachers’ student proficiency ratings on the semester final in 2009 were post-C.R.E.A.T.E. The data revealing the proficiency ratings for teachers pre-C.R.E.A.T.E. and post-C.R.E.A.T.E. were examined to see if there was any progress or significant difference.

Another source of data that was examined was the G.P.A. for students in the teachers’ pre-C.R.E.A.T.E. classrooms and the G.P.A. for students in the same teachers’ post-C.R.E.A.T.E. classrooms. A passing grade would be any grade of a C or above which represented satisfactory learning. Any grade below C was unsatisfactory and would be considered as failing. An A grade was 4 grade points. A B grade was 3 points. A C grade was 2 points. A D grade was 1 grade point. Finally, an F grade was worth 0 points. The G.P.A. for teachers at the end of the fall semester of 2008 was compared to the G.P.A. for the same teachers at the end of fall 2009 after they had used the C.R.E.A.T.E instructional model. Furthermore, a t-test was used to determine if the difference in the proficiency ratings and the G.P.A. for the math teachers
between fall semester of 2008 and fall semester of 2009 after the application of the C.R.E.A.T.E. model was statistically significant.

The final source of data was the field notes the author took during observations of teachers. While observing teachers, the author used the rubric for the C.R.E.A.T.E. model and took notes based on how well the instruction was aligned with the practices emphasized by the model. After the looking over the field notes, the author would write a brief reflection on what practices he observed and how effectively the teacher was implementing the C.R.E.A.T.E. model. These observation notes were an important source of data that helped the author to analyze what practices stressed in the model were common to teachers who made the most progress in their student outcomes. Finally, the notes allowed the author to understand what aspects of the C.R.E.A.T.E. model had the most impact on student learning.

Findings

Teacher Proficiency Ratings

Table 1

Algebra I (% Students Scoring Basic or Above)

<table>
<thead>
<tr>
<th>Teacher</th>
<th>2008</th>
<th>2009</th>
<th>% Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. P</td>
<td>27%</td>
<td>68%</td>
<td>+152%</td>
</tr>
<tr>
<td>Ms. H</td>
<td>16%</td>
<td>43%</td>
<td>+169%</td>
</tr>
<tr>
<td>Overall</td>
<td>26%</td>
<td>56%</td>
<td>+115%</td>
</tr>
<tr>
<td>Students</td>
<td>180</td>
<td>238</td>
<td></td>
</tr>
</tbody>
</table>
Table 2

Geometry (% Students Scoring Basic or Above)

<table>
<thead>
<tr>
<th>Teacher</th>
<th>2008</th>
<th>2009</th>
<th>% Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. G</td>
<td>31%</td>
<td>43%</td>
<td>+39%</td>
</tr>
<tr>
<td>Mr. H</td>
<td>27%</td>
<td>53%</td>
<td>+96%</td>
</tr>
<tr>
<td>Mr. S</td>
<td>16%</td>
<td>31%</td>
<td>+93%</td>
</tr>
<tr>
<td>Ms. W</td>
<td>37%</td>
<td>20%</td>
<td>-46%</td>
</tr>
<tr>
<td>Mr. M</td>
<td>20%</td>
<td>30%</td>
<td>+50%</td>
</tr>
<tr>
<td>Overall</td>
<td>25%</td>
<td>36%</td>
<td>+44%</td>
</tr>
<tr>
<td>Students</td>
<td>556</td>
<td>492</td>
<td></td>
</tr>
</tbody>
</table>

Table 3

Grade Point Average (G.P.A.) for Students by Teacher

<table>
<thead>
<tr>
<th>G.P.A. Range</th>
<th>Letter Grade Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5-4.0</td>
<td>‘A’ Range</td>
</tr>
<tr>
<td>2.5-3.49</td>
<td>‘B’ Range</td>
</tr>
<tr>
<td>1.5-2.49</td>
<td>‘C’ Range</td>
</tr>
<tr>
<td>1.0-1.49</td>
<td>‘D’ Range</td>
</tr>
<tr>
<td>0-0.99</td>
<td>‘F’ Range</td>
</tr>
</tbody>
</table>

Algebra I

<table>
<thead>
<tr>
<th>Teacher</th>
<th>2008</th>
<th>2009</th>
<th>% Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. P</td>
<td>1.64</td>
<td>2.13</td>
<td>+30%</td>
</tr>
<tr>
<td>Ms. H</td>
<td>.653</td>
<td>1.50</td>
<td>+130%</td>
</tr>
<tr>
<td>Overall</td>
<td>1.18</td>
<td>1.82</td>
<td>+54%</td>
</tr>
</tbody>
</table>
### Discussion of Findings

There was an overall increase in the percent of students who scored above the basic level on the semester final exam in both algebra and geometry between 2008 and 2009. Out of 7 teachers, 6 of them made progress in getting a greater percent of students to score at a basic or above level on the 2009 Fall exam. Only Ms. W saw a decline in her student performance on the geometry final exam. Between the 2 algebra teachers in 2008, only 26% of students scored above basic. But in 2009, 56% of students for the same teachers scored above basic. This represents a 115% growth. In geometry, during 2008, 25% of students scored above basic. But this year, 36% of students scored above basic. This represents a 44% growth in the number of students who scored above basic. The G.P.A. for algebra teachers also increased between 2008 and 2009 from 1.18 to 1.82. Therefore, the average grade went from a D to a C. There was a 54% growth in the algebra G.P.A overall. The G.P.A. for each teacher in

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### Geometry

<table>
<thead>
<tr>
<th>Teacher</th>
<th>2008</th>
<th>2009</th>
<th>% Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. G</td>
<td>1.70</td>
<td>1.63</td>
<td>-4%</td>
</tr>
<tr>
<td>Mr. H</td>
<td>1.31</td>
<td>1.10</td>
<td>-16%</td>
</tr>
<tr>
<td>Mr. S</td>
<td>1.42</td>
<td>1.47</td>
<td>+.3%</td>
</tr>
<tr>
<td>Ms. W</td>
<td>.82</td>
<td>.91</td>
<td>+12%</td>
</tr>
<tr>
<td>Mr. M</td>
<td>1.73</td>
<td>1.76</td>
<td>+1.7%</td>
</tr>
<tr>
<td>Overall</td>
<td>1.41</td>
<td>1.41</td>
<td>0</td>
</tr>
</tbody>
</table>
geometry, representing the average grade given to students, remained constant or slightly increased for most teachers between 2008 and 2009. The average G.P.A. of 1.41 or a D remained the same. Therefore, there was greater growth in the students’ scores and G.P.A. in the algebra classes than in the geometry classes between fall semester of 2008 and 2009.

In algebra, the most obvious outlier was Ms. H, who made the greatest growth in terms of getting a higher percent of students to score above basic between 2008 and 2009. She also made the greatest leap in getting her students to earn higher grades this semester. Ms. H saw a 152% growth in the percent of students who scored above basic. Her students increased their G.P.A. in her class 130%. Based on observations the author regularly conducted in her classroom in 2008 and in 2009, he saw there were several factors of the C.R.E.A.T.E. model that really made a difference this semester. The author observed that Ms. H focused more on teaching the essential concepts this year compared to last year. Ms. H told the author that in 2008, she tried to cover the whole book and followed the pacing guide given by the district. According to the C.R.E.A.T.E. model, the teacher must not live by the textbook or district pacing guide and cover concepts. Instead, the teacher must focus on student mastery of a few key concepts. Ms. H said that her goal last year was tied more to coverage of concepts and following the district’s pacing guide instead of focusing on student learning or mastery. This year, she didn’t try to get to the finish line by covering every page in the book. Instead, she conveyed that the C.R.E.A.T.E. model
inspired her to focus on only the most essential concepts of algebra that were indicated by the blueprint provide by the California Department of Education.

Another reason that Ms. H made great progress was that she began implementing the “exit price” aspect in her class. The “exit price” was emphasized in the C.R.E.A.T.E. model as a critical assignment or piece of student work that proved the students had mastered the objective in class, during class. The underlying principle of the “exit price” was that the teacher cannot assign homework or allow the students to leave the classroom without having proved that they could perform the skills or objective taught in the classroom with high accuracy. Ms. H focused on getting her students to master concepts in class instead of depending on homework. Last year, Ms. H said that she would lecture to the class for 40 minutes and then give homework so students could practice the skills at home. However, she didn’t make sure the students could perform the skill in class. The C.R.E.A.T.E. model insists that the teacher must make sure the students master the objective in class. The teacher must lecture on a specific objective for 15-20 minutes and then allow students to show mastery of the skill on an “exit price” for the last 20 minutes. Once the students show mastery in class, then they can get homework for additional practice. This semester, the author noted, Ms. H made sure to give the “exit price” in her classes as a tool to measure students’ mastery of the objective and also tenaciously monitored students and kept them accountable. Her emphasis on student mastery in class helped her to get more students to perform well on this year’s semester final.
Finally, another reason Ms. H saw great growth was because she had more room to grow than the other algebra teacher. Her percent of students scoring above basic was only 16% last year. Furthermore, her students’ average G.P.A. was .653 or an F. Ms. P, on the other hand, had 27% of her students score above basic last year. Her average G.P.A. was 1.64 or a C-. While Ms. P also made growth in each category, her scores were already significantly higher than Ms. H’s and therefore she had less area for growth.

While Ms. H saw the greatest increase in the percent of students scoring above basic this semester, the difference in the proportion in the number of her students who scored above basic between 2008 and 2009 after the application of the C.R.E.A.T.E. model was statistically insignificant (1.52, .05, 92). On the other hand the difference in the proportion in the number of students in Ms. P’s class who scored above basic between 2008 and 2009 after the application of C.R.E.A.T.E. was statistically significant (7.38, .05, 182). The author can explain this difference in the significance of the results based on observations he did and the interviews he conducted with the teachers about their practices pre-C.R.E.A.T.E. in 2008 and post-C.R.E.A.T.E in 2009.

There were clear differences in the way Ms. P and Ms. H naturally conducted their class before they had heard of the C.R.E.A.T.E. model. Ms. P was clearly a more engaging teacher than Ms. H. Based on last year’s observations, the author knew that she already naturally implemented many of the principles of the C.R.E.A.T.E. model in her classroom. For example, she interacted on a personal level with her students. She would call on them and ask them to teach back concepts that she had just
explained. She would explain the algebra curriculum in ways that the students could understand. Ms. P was well known throughout the school for the way that she used hip hop songs and poems to convey the intimidating quadratic formula to the students. Ms. P also dedicated time after school to devote one on one attention to struggling students. For Ms. P, the C.R.E.A.T.E. model simply reinforced the value of many of the teaching practices she had already been using. The only major aspect of the C.R.E.A.T.E. model that Ms. P tried to adopt this year was the assessing of student learning and the enforcing of an “exit price” as a tool for measuring mastery. Also, she explained to the author that she spent more time focusing on the mastery of essential concepts instead of covering the entire book as a result of being influenced by the C.R.E.A.T.E. model. The increased focus on assessment via the “exit price” and mastery of essential concepts helped Ms. P to achieve significant growth in her proficiency rating.

In contrast to Ms. P, Ms. H had to make many changes in her instructional approach. She naturally did not teach using personal interaction with students in her class. Last year, the author observed that she would pose general questions or simply lecture for the entire period. She conveyed to the author that she used to rarely try to convey the curriculum in the students’ language. She relied on the textbook as the only resource and in essence read the book to the class. She had to struggle to change her ways and it was therefore more of an uphill climb for her to adopt the principles of C.R.E.A.T.E. than for Ms. P. This helps explain why the results Ms. P experienced were statistically significant and while Ms. H’s results were not.
In geometry, the clear outlier was Ms. W. While all the geometry teachers saw an increase in the percent of students scoring above basic this semester, Mr. W saw a decrease. Her percent of students who scored above basic decreased 46% compared to last year. Based on his observations of her class, the author saw that she failed to implement most of the factors that were stressed in the C.R.E.A.T.E. model. For example, she rarely engaged students’ attention. Students were often using their phones. Her interaction was usually very general and not personal. She would rarely call on individual students to do problems and would instead conduct a one-way lecture. Ms. W did not create a positive learning environment. Her class always seemed out of control and the students would talk over her during her lecture. She also failed to make sure students mastered the objective in class. The author never once saw Ms. W use an “exit price” as a tool to measure students’ mastery of the objective. She would teach the whole period and then give homework. She didn’t tenaciously push the students to do an “exit price” where they could see if they could perform the objective with high accuracy. The most significant way Ms. W did not follow the C.R.E.A.T.E. model was that she refused to accept personal responsibility for her students’ success. Ms. W told the author on many occasions that she felt that the students were not ready for high school. They needed to mature more and become responsible before being in her class. She would blame the students often when the author tried to help her find solutions to the challenges in the classroom. Ms. W did not follow the C.R.E.A.T.E. principle of taking responsibility for students’ success.
While Ms. W witnessed a drop in the percent of students scoring above basic, she saw an increase in the G.P.A. of her students this semester. One reason for this is probably that Ms. W had the most room for growth. Ms. W had the lowest G.P.A. in the geometry department last year. Her G.P.A. last year of .82 represented an F. Although it went up 12%, the average grade was still an F. Another factor that explains why Ms. W’s G.P.A. increased was probably the pressure she felt from the administration to pass more kids. The principal openly displayed the average G.P.A. of each teacher in front of the staff at the beginning of the year. His intent was to let all teachers know that they were accountable for their students’ success and that they had to come up with solutions to help their students earn higher grades. The geometry teachers as a staff had some of the lowest G.P.A. scores in the whole school and were indirectly asked by the principal to improve. Ms. W had expressed to the author during the semester that she didn’t want to be exposed again for having the lowest G.P.A. This fear of being exposed probably contributed to the increase in G.P.A. over last semester.

Overall, the algebra teachers made the greatest progress in terms of getting a higher percent of students to score above basic and getting a higher G.P.A. than the geometry teachers this semester. The author feels there were several major factors that explain this. Both factors relate to the motivation and accountability of the teachers and therefore go beyond any instructional strategy outlined by the C.R.E.A.T.E. model. The algebra teachers were clearly more driven to get their students to excel this semester. The author, based on observations and interviews with staff, could see that
the algebra teachers more than any other math staff took more ownership of their students’ fate. They took responsibility for their students’ success and blamed themselves for having high rates of failure the previous year. They made appointments with the author to discuss strategies on how to raise their students’ performance. Ms. H even spent 6 weeks of her summer watching the author teach a summer academy so that she could witness the C.R.E.A.T.E. model in action. She gave up her time to learn strategies that would help her to serve her students better. Ms. P also would frequently call the author and discuss her challenges and propose ideas for improving student learning. The algebra staff was intrinsically driven to succeed and the C.R.E.A.T.E. model helped them to manifest that drive into student success.

Another factor that helped the algebra staff to view the C.R.E.A.T.E. model as a valuable resource and to sincerely implement it was that they were open to considering the ideas put forth by the author. The author had been an algebra teacher for two years and his students had consistently outperformed the district and state on standardized exams. The algebra teachers may have felt or been told by other educators in the past that it was practically impossible to get inner city students who were below grade level at West High, to succeed in algebra and outperform the state average on the state exams. This myth was destroyed by the results seen in the author’s class. The algebra staff saw him as a comrade who had walked in their shoes and who found a way to deal with a similar population of students who were below grade level and who came with many challenges related to motivation and attitude towards school. Therefore, the algebra staff was open to the author’s ideas and willing
to consider the C.R.E.A.T.E. instructional model as a valuable tool to uplift their students. Also the principal had praised the author’s results so often that there was probably a competitive spirit that was alive within the other algebra staff members. They wanted to show that they were also capable of succeeding and didn’t want to be compared publicly with their fellow algebra teacher in a way that exposed their scores as being much lower. As a result of all these factors, the algebra staff was more motivated and eager to prove themselves and perceived C.R.E.A.T.E. as a valuable tool that they could use.

On the other hand, the geometry staff had a different level of drive and motivation. There were several teachers who did not take responsibility for their students’ failure or low scores. They insisted that they did their job of teaching and that the students didn’t do their part of learning. They associated their role as mainly instructing and separated themselves from the learning aspect. Several teachers including Ms. W and Mr. H had frequently complained to the author about their students as being lazy, unmotivated and defiant. They rarely tried to examine their own teaching practices as being part of the problem. While there were some geometry staff members who seemed more motivated and driven during the beginning of the semester, the culture of blaming kids and settling for mediocrity and failure set in and paralyzed even those few teachers. This resentment toward their students and aversion to the indifference urban students often show to academic success may have prevented the geometry staff from fully implementing the C.R.E.A.T.E. model.
The other factor that made a difference in the growth the geometry staff witnessed compared to the algebra staff was that the geometry staff was not always open to the author’s ideas. The reason for this was the author had never taught geometry. Therefore, some geometry teachers would often say that the author’s model would work for algebra but not for geometry. The author believes they used this as an excuse to justify not sincerely believing in the C.R.E.A.T.E. model and the impact it could have on student success. Several geometry teachers strongly believed that their students were not capable of succeeding in their class. They felt their students were too far below basic in skill level and could not close the achievement gap. It could not be done. Some teachers would say that algebra was more straightforward than geometry, while geometry involved reasoning and students had to visualize their problem using another part of their brain. These arguments, along with the fact that the author had never taught geometry, allowed the staff to perceive the C.R.E.A.T.E. model and the author’s ideas as great for algebra but questionable in a geometry class. Even if the principal discussed the results the author had with students and the notion that urban students at West High could succeed in geometry, the geometry staff would reply that the comparison was flawed because the author had not taught geometry.

For years, geometry staff had a reputation of failing high numbers of students. The author had hoped that the C.R.E.A.T.E. model would help all math teachers improve student learning in the form of test scores and higher grades. But the issue of motivation was an external factor that affected several geometry teachers and the degree to which they implemented the C.R.E.A.T.E. The principal tried to inspire the
drive for student success within the geometry teachers, but there were several
geometry teachers who had been teaching for many years and clearly expressed their
disinterest in changing. Some teachers even openly told the author that they were
tenured and they knew that nothing punitive could happen to them even if they
continued to fail students. Moreover, there were teachers who constantly blamed
students for their failure. Although the geometry staff made progress overall,
according to the T-value there was no statistically significant difference in the percent
of student who scored above basic across geometry instructors between 2008 and 2009
(-1.29, 0.05, 4). The resistance the geometry staff showed in adopting the C.R.E.A.T.E.
principles and taking responsibility for student failure along with the culture of
negativity that set in clearly inhibited the growth the staff could have seen in their
students’ scores and grades.
Chapter 5

CONCLUSIONS AND RECOMMENDATIONS

Failure or poor performance in foundational math classes such as algebra is a national epidemic facing urban secondary education and adversely impacting students of color. The National Assessment of Educational Progress states that the “overwhelming number of low-achieving students in algebra are black and Hispanic and attend big urban, high-poverty schools where they are more likely to fall through the cracks” (Loveless, 2008). In the midst of consistent algebra failure at West High School in Sacramento, the author has been able to achieve different results with low income urban students in algebra. His students have consistently outperformed their peers throughout the entire Grand District and state of California. This study revolved around the issue of replicating the success the author has had with C.R.E.A.T.E. in other teachers’ classrooms. In this section, the author draws certain conclusions based on the results and the analysis of the impact of the C.R.E.A.T.E. model on teachers’ success with students. He also provides recommendations for the broader educational community and the implications these actions may have on urban students. Finally, the author provides recommendations for further research that may better reveal the potential impact of the C.R.E.A.T.E. model on teachers’ success with students.

Conclusions

*The C.R.E.A.T.E. model can be replicated in other teachers’ classrooms.* The data revealed that there was an overall increase in the percent of students who scored above the basic level on the semester final exam in both algebra and geometry
between 2008 and 2009. There was a 115% growth in the number of students who scored above basic in algebra. There was a 44% growth in the number of students who scored above basic in geometry. There was also 54% growth in the algebra G.P.A. Although certain teachers made more gains than others, there was overall progress that occurred for most teachers post-C.R.E.A.T.E. which proves that the model can be replicated.

Another significant conclusion is that certain aspects of C.R.E.A.T.E. may have a greater impact than other aspects on overall student performance in urban schools. At West High, the author based on his observations, reflections, and interviews with teachers found that there were two key tenets of the model that made a critical impact. The first most significant aspect was the focus on essential concepts instead of coverage of the whole textbook. The importance of emphasizing essential concepts instead of covering the entire textbook was not understood at the beginning of the year by all teachers. It became clearer by the end of the semester when teachers openly endorsed the idea of focusing on the essential concepts and how it had made their job easier and more meaningful since students were actually learning. Teachers frequently told the author that they felt students learned more because they were taught less with more depth. Furthermore, many teachers conveyed to the author that for the following year, they would like to focus the curriculum on even fewer essential concepts and teach those until students showed mastery.

The other major piece of C.R.E.A.T.E. that had the greatest impact was related to assessment and mastery. Many teachers who made progress embraced the idea of
“teach-back.” “Teach-back” means the teacher must explain a concept and then have different students teach that concept back to the class. However, the model also requires the teacher to pick on many different students and not wait for hands to go up. He or she must have the target population during every step of instruction show their understanding of the concepts by teaching the concepts to the class. Although most teachers did not call on enough students during lecture and maximize the potential of the “teach-back” concept, they still made a radical change compared to the previous year. Teachers clearly expressed that students were more engaged than before because they were put in the “hot seat” and made to convey their understanding of each concept back to the teacher and other students.

While “teach back” was a useful principle, the greatest tool of assessment was the “exit price.” This was the highlight of the C.R.E.A.T.E. model in terms of impact on student learning. It was a new concept for most teachers. They were used to teaching for most of the period and having students try a few problems on their own. But most of the independent practice was assigned for homework. The “exit price” forced the students to show mastery of the objective through an assignment in class, during class. The “exit price” made it difficult for students to leave the classroom without mastering the objective. While it took several months for the change to occur, many teachers began creating “exit price” assignments that students had to turn in by the end of class. They started to rely less on homework to measure student mastery of concepts. Furthermore, teachers bought into the idea of enforcing “exit price” accountability. They understood that they had to grade the “exit price” in class in order
for students to take it seriously. They also tried to enforce consequences if students failed the “exit price.” This “exit price” also put pressure on students to really pay attention during class because they knew they would have to demonstrate mastery on the “exit price” assignment in order to get credit for the day.

While the teachers’ focus on essential concepts and the implementation of the “exit price” had the greatest impact on student performance, there were certain aspects of the C.R.E.A.T.E. model that were difficult to adopt or needed to be more aggressively enforced. The tenet of the assessment part of C.R.E.A.T.E. revolving around objectives posed a challenge for teachers. The model says that teachers must choose an objective that is scaffolded. The teacher must break the concept into smaller components and begin where students are at. The teacher must build the students from where they are. Moreover, the objective for the class must be something that students can actually master based on their starting level. If it is too vague or too big, students can easily get lost. Then the students will get frustrated and fail the exit price if it tests the huge objective. Many times the author would observe that the teacher would try to cover too much in one class period. The objective would have three or four skills that would overwhelm the students and intimidate them. Instead the teacher should have focused on one or two skills that challenged the students without overwhelming them. The objective must be something they can master in one class period. But teachers would often resort to their old tendencies of teaching for the majority of the period and covering as many concepts as possible. They would leave only 10 minutes to give out the “exit price.” The exit price may have had too many concepts on it and the students
would feel overwhelmed and fail it. *The principle of C.R.E.A.T.E. emphasizing the mastery of a challenging but “masterable” objective was a definitely a challenge for many teachers to consistently follow.*

Another aspect of C.R.E.A.T.E. that teachers struggled with was the aggressive implementation of the “teach-back” principle. Some teachers clearly stated to the author that they changed their instruction because they would call on different students to do a certain problem. In the past, these teachers may have only called on two to three students the entire period to do a problem. These students were usually the students who raised their hand and knew how to do the problem. This year teachers confessed that they would call on five to ten students to do problems and therefore get more kids engaged. While this is true, all of the math teachers with the exception of Ms. P, needed to improve their execution of “teach-back.” The author observed most teachers still wait for hands to go up during lecture. *The tendency for the most part was still for teachers to call on the “cream of the crop” students who knew the answers.* They would call on 5 to 10 students, but that was not enough. They needed to call on 20 to 25 different students, especially those students who struggled and may not have known the answer. It was very common to see teachers resort to old tendencies and look over the struggling students and simply pick on the students who traditionally succeeded.

Also, *teachers struggled with the frequency and timing of calling on students to teach the concepts back of the class.* Often times, teachers would wait until an entire lecture was done before calling on different students. The model clearly states that
teachers must call on different students throughout the lecture during every step to make sure that students are not left behind. The lecture has to be extremely interactive, like a conversation where several people are having constant dialogue. In most teachers’ classrooms this dialogue was still one-way for too long. Hence, teachers were talking to themselves for too long. By the time, teachers began calling on different students, students may have already been lost or daydreaming. This constant interaction and engagement of students through interactive teach-back was a practice teachers clearly struggled to implement.

Another aspect of C.R.E.A.T.E. that many teachers struggled with was the “exit price” accountability. While many teachers gave an exit price, some teachers would not tenaciously push students to get it done during class. They would often tell the students to get it done but not convince students that it had to be done in class before leaving the room. Students would often test the conviction of the teacher by complaining about having to do the “exit price” in class. The model explicitly states that in urban settings the students must show mastery in class. This does not mean they have to finish every problem on the “exit price” in class. However, they must do enough problems with high accuracy to convince the teachers they have mastered the objective in class, during class. There must be a minimum number of problems the teacher must assign students to do in class before leaving and then grade students based on level of mastery. The extra problems beyond the minimum for mastery can be done at home. However, if students do not show mastery on the “exit price” in class, the teacher must enforce consequences such as making the students stay during
lunch or after school to complete the exit price with high accuracy. Unfortunately, once students complained about doing the exit price in class, most teachers would often resort to old practices and tell kids that they could do “it for homework.” As soon as students would hear this, their eyes would light up and a smile would erupt on their face. This meant they could get escape from the classroom without mastery. They could either copy off their friend, refuse to do it for homework, or do the homework and get many problems wrong but still get away with it. Most students knew that it was difficult for teachers to monitor homework and actually keep students accountable to getting the problem right. But teachers would loosen up when students showed resistance. Some students could sense that teachers would back off and allow them to do it for homework if they complained enough during class. The C.R.E.A.T.E. model clearly states that teachers in urban classrooms must be tenacious and not give in to students’ demands. They must demand that students show mastery in class and keep them accountable using grades or consequences. Mastery happens in class, during class and not at home.

Recommendations and Implications for Educational Community

The findings from the study reveal that the C.R.E.A.T.E. model is replicable in other teachers’ classrooms. Therefore, the author recommends that this model be implemented throughout the Grand District as a way to address the pressing crisis of urban failure in math. All middle and high schools should use the C.R.E.A.T.E. model to help teachers increase their students’ achievement in math.
The author also recommends that institutions of higher education and teacher credential programs use the C.R.E.A.T.E. instructional model as a part of their curriculum. Any class on education or social change in urban communities should include a discussion of the model. This model has proven to help teachers in a comprehensive urban school increase the achievement of their students. It is a breakthrough that can enable stakeholders to address urban failure in math. Teachers who are passionate about teaching in inner city settings must be exposed to the model before they set foot in a classroom. They must see that it works and that it can work them. They should feel hope and optimistic about their potential in helping their students a result of studying the strategies outlined by C.R.E.A.T.E. and the success that has resulted from the implementation of the model.

Implications

The implementation of the C.R.E.A.T.E. instructional model will have several implications for educational leaders in urban communities. Leaders, including administrators, will have to aggressively seek teachers who can successfully be trained and inspired to use the model in helping students. In recruiting teachers who are new to the profession, it is important that leaders look for individuals who take responsibility for student learning. They need to interview teachers and have them do mock lessons in front of them. During observation, leaders must search for evidence of teachers assuming personal responsibility for student learning. If teachers portray that they are willing to adapt instruction to students’ needs and make interventions if it appears that students are not learning, then that teacher has potential. In recruiting
experienced teachers, leaders should be aware that these teachers may already possess many skills that will help them to engage students and can perhaps enhance their instruction by adopting certain principles of C.R.E.A.T.E. Leaders should not ask their teachers to throw away their existing skills. Administrators should simply assess the teachers’ strengths and weaknesses and expect teachers to improve their instruction using the C.R.E.A.T.E. model. Again, it is crucial that teachers are willing to make changes in the spirit of improving student achievement. It is important that teachers put students first and that they are willing to adapt their instruction in any way necessary to get students to experience success. They should be open-minded to adding the C.R.E.A.T.E. teaching style to their arsenal because it will help their students reach new levels of success. It is the leaders’ duty to recruit such teachers who assume personal responsibility for student achievement and the will to adopt the principles of C.R.E.A.T.E. if it helps them to reach their goal of student success.

The implications of using the C.R.E.A.T.E. model throughout the district and in teacher credential programs will be significant. Teachers would be better prepared to help inner city students. The state would produce math teachers who are better prepared to help inner city students. Research has shown that the factor that has the greatest impact on student achievement is the effectiveness of the classroom teacher (Marzano et al., 2001). If teachers were trained to use the C.R.E.A.T.E. model and thus better equipped to teach math, students would perform better in math. Their scores on standardized exams would increase. The Grand District only had 39% of its students score above basic on the state exam for algebra I in 2009. The state average
was 51%. In geometry, only 33% of the students in the district scored basic or above, but the state average was 48%. Therefore, the district performed well below the state average in algebra and geometry. The C.R.E.A.T.E. can help the students in the district outperform the state average and experience the same success the author’s students have experienced.

The increase in students’ scores on the state exam for math would help schools improve their overall score in terms of meeting Adequate Yearly Progress (AYP) goals. Low math scores are often a major weakness in many schools that prevents them from reaching those AYP goals. These schools that do not meet the goals are labeled as Program Improvement (PI) schools. Also, students’ grades may improve if they are taught using the C.R.E.A.T.E. model. If more students pass their math class, then there would be a higher chance for students to graduate from high school.

According to the superintendent of Los Angeles Unified School District (LAUSD), the second largest district in the U.S., failure in algebra is the #1 trigger of dropouts in high school (Helfand, 2007). The California Dropout Research Project reveals that 70% of students who do not pass algebra by the 9th grade drop out of high school compared to 30% for those students who do pass it (California Dropout Research Project, 2008). Also, if more students can pass math during the school year, then there would be less of need for summer school. In order to implement summer school, the district would have to spend money on hiring teachers and administrators. Math failure is often a culprit that forces schools to have summer school. This may not be a major
issue if more students could show mastery in class as a result of being exposed to the model.

Furthermore, if students can succeed in foundational math courses such as algebra and geometry, they have a higher chance of taking higher math courses and going to college and succeeding. Research shows that African American and Hispanic students are about twice as likely as whites and three times as likely as Asians to cease their math career at the lower level of algebra (Adelman, 1999). Success in the three foundational math classes - algebra, geometry, and algebra 2 - is critical because, as many influential policy makers including California Governor Arnold Schwarzenegger have declared, math is the “gateway” to college and higher-paying careers (Tucker, 2008). Research by the U.S. Department of Education explains how of all the high school courses, the highest level of mathematics taken is the most important for college success (Adelman, 1999). The U.S. Department of Education also states that the odds that a student who enters college will complete a bachelor’s degree more than doubles if that student completed a mathematics course beyond Algebra II (e.g., trigonometry or pre-calculus) while in high school (Adelman, 1996). Students whose highest levels of mathematics in high school were trigonometry, pre-calculus, or calculus-level courses had bachelor’s degree completion rates above 60% (Tierney et al., 2003). For students who completed a calculus course in high school, the bachelor’s degree completion rate was 83% (NCES, 2003). Furthermore, students who take more-advanced math courses during high school tended to obtain markedly higher levels of education, and a decade after graduation, earn significantly more than
those who took only lower-level courses (Tierney et al., 2003). As a result, success in foundational math is the ticket to higher education. Therefore, the implementation of C.R.E.A.T.E. in urban classrooms can significantly help increase the number of urban students of color who succeed in college and have access to higher wage jobs and other opportunities.

Recommendations for Further Study

To better understand the potential impact of the C.R.E.A.T.E. model on student success, the author suggests several additional studies. He would dedicate time to studying the impact of the motivation of teachers on their implementation of the C.R.E.A.T.E. model in the classroom and its effect on students. The author believes that the math teachers, in particular the geometry staff, would have seen even more growth in their students’ results had they all taken responsibility for their students’ success. The proposed research would investigate what impact motivation can have on teachers implementing the C.R.E.A.T.E. model to improve student learning. There would be four different groups of teachers. There would a group of teachers with low levels of intrinsic motivation who teach based on traditional practices. The second group would consist of teachers who also lack motivation, but teach based on the C.R.E.A.T.E. model. They may not fully implement the model or aggressively follow the principles since their motivation is low. A third group of teachers would consist of motivated individuals who teach using traditional instructional approaches.

Finally, the last group would include teachers who are motivated and also use the C.R.E.A.T.E. model. The author would screen teachers based on interviews and
past results the teachers have had. After a rigorous screening process, the author would determine the level of motivation of each teacher and what group to place the teacher in. As far as the motivated group using the C.R.E.A.T.E. model, the author would only choose teachers who clearly demonstrated that they took responsibility for their students’ success. These teachers would need to convince the author that they were willing to make changes to their teaching style using the C.R.E.A.T.E. model if it could help them to improve student learning. The author would also look at recommendation letters from previous school administrators and see if there was a clear indication that the teacher was ready to assume responsibility for the outcomes in his class and driven to develop his or her arsenal of pedagogical practices using the C.R.E.A.T.E. model. Once the groups have been created, the author would conduct the same study involving test data, G.P.A. data and observation field notes. He would compare the student achievement data resulting from each group of teachers. The trends or findings may reveal the effect that the motivation of teachers has on their implementation of the C.R.E.A.T.E. model and its impact on their students. If there is a significant difference in results, this may indicate that motivation plays a major role in the implementation of C.R.E.A.T.E. and the student learning that results.

Another critical study would be revolving around the presence of the author among the geometry staff as a geometry teacher. The author would teach geometry for at least one semester at West High. He would teach a population of students that was similar to the students the other geometry teachers had to deal with. His results with students would be recorded. After his results have been recorded, he would then offer
the C.R.E.A.T.E. model as a resource for the other geometry teachers. It is assumed that the author would succeed in getting most students in his geometry classes to score above basic just as he has consistently done in his algebra classes. The new study would look at the results geometry teachers had after the author has had success teaching geometry using the model. It would be interesting to see if there is a difference in the results the geometry staff has with their students.

The psychological impact that the author’s success with students has on his fellow geometry teachers may have a significant impact on achievement results in geometry classes. A key reason that the algebra teachers were open to the author’s ideas was that he had proven that his method worked with students in algebra. They may have believed that it was not possible for inner city students at West High School, who were below grade level, to outperform their peers. But the success the author had consistently had debunked that notion. The algebra teachers could not refute the data and its relation to algebra. The geometry teachers used the rationale that the author never taught algebra to justify their lack of faith in the C.R.E.A.T.E. model and its application to geometry. If the author could teach geometry at an urban school like West High School and help a similar population of students to close the achievement gap and outperform their peers, they would have to accept that it is possible to uplift inner city students who are below grade level to success. They may be more receptive and inspired to use the C.R.E.A.T.E. model in the classroom because they believe that it can work in a geometry classroom.
Finally, time is a factor that may affect the implementation of any new model or program. The author would conduct a study that essentially follows the same group of algebra and geometry teachers for one more semester. He would discover the impact that the time teachers have in implementing the model has on its effect on student learning. The teachers this semester only had 5 months to experiment with the C.R.E.A.T.E. Similarly, the author had only 5 months to study the needs of the teachers and what their strengths and weaknesses were. Once the author gained a better understanding of their needs, he was able to figure out what aspects of the C.R.E.A.T.E. model were most applicable to the math teachers at West High and what elements were not so crucial. Over the course of this semester, the author recognized the importance of emphasizing certain aspects of the model more than other aspects. The author therefore learned about his model over the course of 5 months and was able to more communicate certain principles more effectively over time. Teachers also found that they needed to focus their attention on certain aspects of C.R.E.A.T.E. more than others. For example, focusing on essential concepts was a major breakthrough for the staff. The significance of emphasizing essential concepts instead of covering the entire textbook was not understood at the beginning of the year. It became more apparent by the end of the semester when teachers openly expressed their support of focusing on essential concepts and how it had made their job easier and more meaningful since students were actually learning.

Also, over time, teachers began appreciating the value of the “exit price” as a tool for measuring mastery. The author did not know before the year began that the
exit price would be of such value. He had to study the strengths and weaknesses of each teacher and their class and analyze what it would take for student learning to improve. He had to listen to teachers and hear their struggles in the classroom. After listening to teachers and observing classes, the author realized that teachers were not making sure students really mastered the objective taught. Many teachers simply lectured and gave homework. There was no way of knowing if students could perform the skill or objective with high accuracy. But after participating in several workshops conducted by the author on the exit price, teachers openly expressed that they were using the exit price in their classrooms and seeing student progress. Therefore, the exit price over a period of a few months proved to be an invaluable tool for assessment and improving student mastery of essential concepts.

If the author had 5 more months to study the impact of C.R.E.A.T.E. on student success, he would spend even more time learning about the needs of the teachers and how C.R.E.A.T.E. better applies to them and their students’ needs. He would conduct more professional development workshops on targeted areas for improvement and specific strategies discussed in the C.R.E.A.T.E. model. He would cater the model to the needs of the staff more and address specifically what they need to improve student learning. Therefore, the proposed study would follow the teachers and for another 5 months until the end of the spring semester 2010. The results in terms of students’ scores and average G.P.A. would be compared with the same data from the spring semester of 2009. If there is even greater growth in the scores in the new study of the spring semester compared to the study of the fall semester, this may
indicate that time has a significant effect on the implementation of the C.R.E.A.T.E. model and its impact on student success.

As a result of conducting this study and concluding that the C.R.E.A.T.E. model is replicable in other teachers’ classrooms, the author feels that the implementation of the model can significantly help educators throughout the state in their efforts to address the pressing crisis of urban failure in math. Incorporating the model in professional development and teacher credential programs can help Grand District and other districts throughout the state of California increase the number of its urban students of color who succeed in math and have access to college, higher wage jobs and other opportunities. Therefore, the author plans to find avenues through which he can share the model with other educators and stakeholders on a large scale. He intends on presenting the model more frequently at educational conferences, especially to administrators who are searching for solutions to the urban failure in math and the achievement gap. The author will share his experiences and the factors that may affect the implementation of the model at a school site. He will discuss the challenges involving the motivation of staff, the time needed to understand the existing strengths and weaknesses of the staff and the importance of catering the model to the needs of teachers. The author has also written a practical handbook for teachers that the Association of Supervision and Curriculum Development (ASCD) has agreed to publish. The book can become an important vehicle for spreading the model and instilling hope in urban institutions that are concerned with closing the achievement gap and uplifting inner city youth. Hopefully, stakeholders throughout
the state will perceive the C.R.E.A.T.E. model as a boon to education that can they use to unleash the potential within urban minds and empower them with access to higher education and a lifetime of opportunities.
APPENDICES
Appendix A

Observational Protocol
## C.R.E.A.T.E. Observation Notes

### Culturally Responsive

<table>
<thead>
<tr>
<th>Instructional Aspect</th>
<th>Positive</th>
<th>Questions/Suggestions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Centered Instruction</td>
<td>Positive</td>
<td>Questions/Suggestions</td>
</tr>
<tr>
<td>Did you make the Standards Based Content Easy/Relevant So Students Could Understand?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Build on what they already know, use students' vocabulary, their stories)</td>
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<td></td>
</tr>
<tr>
<td>Engaging Delivery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did you explain concept Step by Step</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personally interacting with kids</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(targeting struggling, under the radar kids)</td>
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<td></td>
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</tbody>
</table>

### Rigorous and Rewarding

<table>
<thead>
<tr>
<th>Instructional Aspect</th>
<th>Positive</th>
<th>Questions/Suggestions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Learning Environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are they listening to iPod, talking over teacher, distracting others etc., during your lecture? Is it possible for kids to focus and learn?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Making Sure Students Master Objective in Class, During Class</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did you make sure students showed mastery of objective (on exit price) in class, during class? Was there a clear incentive or consequence for students who showed or didn't show mastery on exit price?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reward Learning Frequently</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did you, Step by Step, Personally Reward Successful Kids (Are you getting Target Pop to &quot;Buy in&quot;)?</td>
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</tbody>
</table>

### Essentials

<table>
<thead>
<tr>
<th>Instructional Aspect</th>
<th>Positive</th>
<th>Questions/Suggestions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teach Essentials Until Mastery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did you emphasize essential skills in the objective? Did you Spiral Previous Essential Skills in the Exit Price?</td>
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<td></td>
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</tbody>
</table>
### ASSESS & MASTER IN CLASS

<table>
<thead>
<tr>
<th>Instructional Aspect</th>
<th>Positive</th>
<th>Questions/Suggestions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objective</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did You Provide a Measurable Objective That Could Be Mastered in 1 Period that Builds Students From Where They Are At?</td>
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<td></td>
</tr>
<tr>
<td><strong>Teach-Back</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Guided Mastery)</td>
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<td></td>
</tr>
<tr>
<td>Did you Explain Concept In A Way Students Understood? Did You Personally Make Target Pop &quot;Teach-Back&quot; Concept during the lesson? (Were they ready to do it alone?)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>I-Dependent</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mastery on Exit Price</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did you Make students prove they were able to do objective Alone by end of class? How many succeeded?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Exit Price Accountability</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did you tenaciously push / support them to complete Exit Price? Did you Keep Students Accountable to Finishing Exit Price in Class?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Spiral</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>/Re-teach Missed Concepts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did You Spiral/Re-Teach Any Missed Essential Concepts On Exit Price Based on Previous Assessment?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### TEST-TAKING MODELS/STRATEGIES

<table>
<thead>
<tr>
<th>Instructional Aspect</th>
<th>Positive</th>
<th>Questions/Suggestions</th>
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</thead>
<tbody>
<tr>
<td>Exposing Students to Test Models</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did you regularly include test model questions on the exit price and prepare them to succeed on test?</td>
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</tbody>
</table>

### EXTRA ONE-ON-ONE FOR STRUGGLING STUDENTS

<table>
<thead>
<tr>
<th>Instructional Aspect</th>
<th>Positive</th>
<th>Questions/Suggestions</th>
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</thead>
<tbody>
<tr>
<td>Did You Provide One on One Help for Struggling Kids Who Need it?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did You Use Superstar Students to Help Others?</td>
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</tbody>
</table>
C.R.E.A.T.E : An Interactive Instructional Approach for Mastery in Class

WHO

DATE:

QUESTIONS/CONCERNS:
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