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Investigating Efforts to Change Educator Attitudes and Teaching Strategies Through Professional Development Focused on the Use of Backward Design Curriculum and the Principles of Efficacy: Educator Beliefs and Attitudes

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by

Alice Marie Jordan Aldridge

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A dissertation submitted to the Education Faculty of Lindenwood University

in partial fulfillment of the requirements for the degree of

Doctor of Education

School of Education

Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work here at Lindenwood University and that I have not submitted it for any other college or university course or degree here or elsewhere.

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This Dissertation has been approved as partial fulfillment of the requirements for the degree of
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Abstract

School districts continually face problems associated with student achievement. The 2001–2002 federal mandate contained in the No Child Left Behind (NCLB) Act held schools accountable for success of all students in reading and mathematics. Standardized tests were employed to measure the success. The purpose of this study was to investigate efforts to change educator attitudes and teaching strategies through professional development focused on the use of backward design curriculum and the principles of efficacy. Participants completed a pre and post Likert survey. Three 45-minute professional development sessions were conducted incorporating discussions on the principles of efficacy and backward design curriculum. Educators redesigned lessons for 9 weeks using the backward design format, linking assessments with instructional practices in classrooms. Best teaching practices were examined and success measured to identify when students truly understood what was being taught. The hypothesis predicted that understanding the principles and strategies of efficacy and backward design curriculum will result in a positive change in educator attitudes and instructional strategies as measured by Likert scale results. The research question was, *How do efforts to change educator attitudes and teaching strategies through professional development focused on the use of backward design curriculum and the principles of efficacy affect educator beliefs and attitudes, as measured by open-ended questions?* Literature review focused on (a) achievement gap, (b) narrowing the achievement gap, (c) educator attitudes, (d) lesson design, (e) student understanding, (f) understanding by doing, and (g) effective teaching strategies. Each of three collaborative researchers focused on one of

three specific areas when compiling and analyzing data: (a) what educators should know and be able to do, (b) educator beliefs and attitudes, and (c) curriculum and instructional practices; all three areas are needed to narrow the achievement gap. Achievement gap is defined in this study as the discrepancy between the academic successes of student subgroups. Summation of quantitative and qualitative surveys did not definitively support the hypothesis of a change in the educator's paradigm related to their attitudes and instructional strategies. An elevation in the educator's level of awareness concerning principles of efficacy and understanding of backward design curriculum did occur.

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Key to Abbreviations

ESS	extended scale scores
ESY	extended school year
GLE	grade level expectations
MAP	Missouri Assessment Program
MSIP	Missouri School Improvement Program
MRZ	moderate risk zone
NAEP	National Assessment of Educational Progress
NCLB	No Child Left Behind
PLC	professional learning community
P/O blindness	possibility/opportunity blindness
POD	process of development
UBD	understanding by backward design
ZOD	zone of development

Chapter One – Introduction

Background of the Study

Many times students memorize something only to find that as soon as they leave the classroom, the information stays behind. The United States has decided that students should be assessed by means of standardized tests to determine how smart they are. One problem may be that varied forms of learning assessment are not considered. Some believe that standardized testing should be accompanied by adjustments in classroom teaching. Haycock (2006) stated, "Although NCLB isn't perfect, the George W. Bush administration and Congress did something important in passing it. They called on educators to embrace a new challenge, not just *access* for all, but *achievement* for all" (p. 38). With educators being held to higher standards of accountability, it is imperative that they determine what a child must be able to do as a result of each lesson. It is not enough for educators to simply teach the lesson and move on; they must determine if each student has truly mastered the concept. This concern and many more can be answered by designing lessons backward, using continuous assessment tasks to ensure student learning through corrective teaching contained in a process termed understanding by design (Wiggins & McTighe, 2005). Most educators do this anyway, but few design lessons in a meaningful way. It is important that educators bring the necessary skills and attitudes to the learning environment.

Wiggins and McTighe (2005) stated that too many educators designed their lessons on the teaching and not on the learning by remaining focused on textbooks, lessons, and time-honored activities, which do not produce desired results. The focus

should be geared towards what the learner needs in order to accomplish the learning goal rather than the preparation educators need to design a lesson. Marzano, Pickering, and McTighe (1993) stated that educators should recognize the need to identify standards for both traditional discipline knowledge and outcomes that relate to lifelong learning. Marzano et al. noted that standardized tests require students to recall or recognize isolated bits of information, which does not require students to exhibit proficiencies in higher level thinking skills.

Covey (2008) stated:

> Research indicates that we best remember that which we hear first and that which we hear last, and so I raise and reraise these phrases both at the start and at the end because I so strongly believe that each is worthy of remembrance. It is my way of ending with the beginning in mind. (p. 191)

Covey 2008 noted it was important to understand that knowledge and skills do not automatically lead to understanding. Simply put, in order to assess understanding accurately, evidence gained from traditional testing alone was insufficient. By learning to design with the end result first, educators determine what desired outcomes should be achieved.

The history of the Midwest suburban school district studied holds a priceless heritage, as did the first appearance of the public school systems in Missouri in 1821. This district evolved from a one-room public school in 1867 to its present size of 17 elementary schools, three middle schools, three high schools, and one alternative educational setting. At the time of this writing, the district's enrollment was approximately 11,900 students in k–12. Additionally, the district had an extensive

preschool program and an alternative school to meet the needs of students who evidenced difficulty with the regular academic program. The mission of the school district was for all students to have "the knowledge, skills, abilities and attitudes to become productive citizens and lifelong learners in a changing global society" (Ferguson-Florissant School District, 2009, p. i).

The reorganization and consolidation of the district on October 25, 1951, brought about not only an increased growth in the student population, but the construction of 17 schools between the years 1952 to 1968. The U.S. District Court ordered the merger of three school districts on June 7, 1975, as a means of desegregating the three communities and bringing about a stronger financial and academic stability to the reorganized district. This court decision expanded the merged district to 34 schools. During this period of expansion, Elementary School A, one of the four lowest performing elementary schools, was established in the year 1957. Since then, the school district has continued serving students from four surrounding communities, and this has posed an academic challenge because of the extreme student mobility rate, diverse student body, and high poverty.

The collaborative research study involving three investigators examined the literature writing from different perspectives for the purpose of answering seven research questions. As principal of Elementary School A, Alice Aldridge explored what educators should know and be able to do to narrow the academic gap among groups of children in school. Alice will research educator beliefs and attitudes among educators that identify the best research-based instructional strategies with a high correlation for enhancing achievement for all students. As the researcher of Elementary School A, Alice Aldridge utilized formal and informal educator observations and professional dialogues that

assisted in the identification of educators' beliefs about student learning and how lessons are designed for student success.

During the 1997–1998 school year, test data identified Elementary School A along with three other schools as low performing within the district. In addition to this state testing data, the average elementary student was testing at least 2 to 3 years below grade level for reading comprehension. Believing that every student taught in the district was of value and deserving of a quality education, all stakeholders agreed upon a new learning strategy for the schools needing academic improvement. In 1998–1999 the district began to provide what was termed by the principals and educators as the *gift of time* to four of the elementary schools. Officials in the district viewed this educational action as a way to improve achievement. The extended school year proposal did not only look at student achievement and time, but quality and accountability of all that would be involved. An outside agency conducted focus groups to gather baseline data on staff attitudes and suggestions. In 1999–2000 building improvement plans were developed in April by each extended year school staff to present strategies for the second year.

The goal of the district was to focus on the implementation and development of a major school improvement by launching an extended school year calendar for the schools needing academic reform. Elementary School A's traditional school calendar of 180 days soon turned into an extended calendar of 200 days for students and 220 days for educators. The focus of the extended school year program was time. While Elementary School A utilized the same curriculum as other district schools, the structure of the day, the number of days, and the time spent on areas of difficulty were reorganized to improve student achievement.

Throughout the course of this gift of time initiative, Elementary School A made consistent academic growth and improved reading for all students reading below grade level. In the past 5 years, Elementary School A made adequate yearly progress status and maintained an attendance rate of 95%, which has been constant and showed little to no change over the years.

As a result of this momentum, the extended school year was swiftly becoming a reality to all stakeholders. The district used the report of the National Education Commission on Time and Learning (1994) as a guideline to focus on how time should be spent during the school day. Authors of the article *Prisoners of Time* (National Education Commission, 1994) stated, "The six-hour, 180 day school year should be relegated to museums, an exhibit from our education past. Both learners and teachers need more time—not to do more of the same, but to use all time in new, different, and better ways. The key to liberating learning lies in unlocking time" (p. 10). Data for the four extended-year schools during the startup year of 1997 evidenced results significantly below the district and state average. The district began restructuring of these schools through a multi-step process that was carefully blueprinted. This new concept of working in an extended school year allowed staff members at all four schools an opportunity to reapply for the various positions. The district utilized a variety of research-based instructional methodologies, and attempted to provide consistency in instructional strategies in the core academic areas.

Student achievement through an extended school year showed greater rates of improvement for the extended school year (ESY) schools in comparison to non-ESY schools for the 1998–2001 school years. The MAP and Gates McGinitie reading test

clearly showed there was greater or equal progress made between the ESY and non-ESY schools. As evidenced on the MAP, students were doing better. This may be attributed to the extensive change in the instructional focus and delivery professional development and the consistent attendance rate of most students attending ESY schools for an additional 25 days. Recent years are showing improvement at the elementary levels that in turn could have an impact on high school MAP performance.

As principal of High School B, Gwen Grooms explored how educators will know they are experiencing success in their efforts to narrow the racial achievement gap through the use of best teaching strategies, student feedback and ongoing assessments. This suburban school was established in 1937, the only high school in a district consisting of a middle school and a few elementary schools. High School B had athletic fields and a track. A cafeteria enabled students to get a hot lunch, and the library offered an opportunity to study both before and after school.

The first class of nine seniors graduated in 1940. All students were involved in extracurricular activities and sports. Each year the student body and staff grew. In 1975 for desegregation purposes, the area federal court ordered that three contiguous districts containing Elementary School A, High School A, and High School B be merged into one district. During the 1970s, High School B housed about 1,200 students. By the 1980s, enrollment had dropped to approximately 700 students. The decline in enrollment was due to the change in school boundaries set in 1975 as a result of the court-ordered merger as well as the expansion of the international airport and construction of an inner-belt highway both within the district boundaries. In the 1990s discussions between the airport commission and the school district were based on the anticipated expansion of the airport.

The end result was the purchase of the property containing High School B by the airport and a decision to build a new replacement high school in the eastern part of the school district.

In January 2004 High School B, with board and community agreement on a modified name, moved into the new building. While the school name was modified slightly, school colors of royal blue and white and the mascot, the "Bulldogs," remained constant. Total building student capacity was 800, with current enrollment at approximately 790 students. The building houses a state-of-the-art high school offering a wide variety of educational and athletic opportunities for the student body.

Feeder schools to the high school included a middle school and four elementary schools. All elementary feeder schools were extended school year (ESY), originally based on low Missouri Assessment Program (MAP) performance. Both the middle school and high school struggled overall with student achievement measured by MAP, ACT, and Gates McGinitie data while the ESY schools adopted a modified calendar attempting to set the foundation and framework to increase reading levels aimed at a systemic change within the district.

As assistant principal of High School A, Anissa Harris explored what educators should know and be able to do to narrow the academic gap among groups of children in school. Anissa will research best teaching practices and behaviors that will increase student achievement for all students. In 1971 High School A, the second high school, was opened. However, during the 1971–1972 school year, it was decided that only sophomore students would attend High School A. In 1971 the preliminary enrollment showed 1,060 sophomore students with other grades to follow. During that time the freshmen were

housed at the junior high school. In order to provide sufficient enrollment to prevent the original high school from going on double sessions a second year, pupils living North of Interstate 270 were assigned to High School A. High School A was designed to provide adaptable and flexible space for a variety of instructional activities that included large-group presentations, small-group work and independent study. The three-level structure contained 257,325 square feet with 75 classrooms. High School A received recognition as an exemplary school under the U.S. Department of Education's Schools of Excellence Program. High School A was also a recipient of Missouri's 1999 Gold Star School Award.

Shaughnessy (as cited in Protheroe, 2008) stated that student success is the result of educators with a high sense of efficacy setting high goals, remaining persistent, and possessing the ability to try another strategy when one fails. Students are more eager to learn when educators demonstrate that learning has a purpose. Tomlinson (2002) noted students need to believe that:

- What I learn here is useful to me now
- I make choices that contribute to my success
- I know what quality looks like and how to create quality work here
- Dependable support for my journey exists in this classroom. (p. 9)

Students' collective classroom experience has a greater impact on student achievement than what educators actually say to students. "Excellent teachers may speak the invitations to learn, but students respond because the actions of those excellent educators consistently convey invitation" (p. 10).

Educators face the challenge of reaching all students including those considered at risk of completing school. The Elementary and Secondary Education Act signed into law in January 2002 mandated academic proficiency for young people from all groups, including the poorest and the most disadvantaged. The need for educators to redesign lessons with the end in mind was important to close the achievement gap. Howard (2008) noted that all adults play a vital role in the success of children. Howard (2008) stated that "When we surround kids with beliefs and high expectations, coming from all the adults in their lives, we greatly increase the probability that they will bring these beliefs/expectations to their own peer culture" (p. 2).

Howard (2008) outlined three strategies to involve the school and community in building a partnership:

- A common set of educational objectives. They must be clear (easy to communicate to children and their parents), compelling (obviously related to the quality of the lives children will lead), and measurable (so that we can easily see where we are now, and how far we have to go.
- Shared positive beliefs about our children's capabilities, and common language to communicate it to everyone involved. 'Smart is not something you are. Smart is something you can GET – if you apply your effort to learning.'
- Shared approaches to instruction. Effective instruction shared with colleagues. (p. 2)

Background of the Problem

In the 21st century, school districts are faced with the dilemma of finding ways to address the problem of students not demonstrating levels of academic mastery along the path of literacy. In the pursuit of this problem, student achievement is measured by school districts under the federal mandates of the No Child Left Behind Act (NCLB) and the scope of the Missouri Department of Elementary and Secondary Education (DESE). The legislative mandate, signed in January 2002 by President Bush, has caused school districts to be perplexed about how to effectively serve the underserved student population since educator attitudes and belief systems do not appear to positively impact student success. Boeck, (2002) noted evidence of the achievement gap through data provided by the National Assessment of Educational Progress (NAEP). He found that "the test scores for the nation's highest performing students have risen by three scale points since 1992, while the test scores of the nation's lowest performing students have declined by seven scale points, causing the achievement gap to widen" (p. 8).

The goal of meeting adequate yearly progress for all children to become proficient by the year of 2014 has complicated the instructional direction of how educators academically assist students. R. N. Caine and Caine (2006) stated that "Although students differ from one another in personality, learning styles, gender, ethnic and cultural backgrounds, language proficiency and more, they are all identical in one crucial respect" (p. 50). Therefore, educators are considering many innovative strategies and programs to meet the challenges of educating a diverse and growing student population.

In 2007 the district was faced with the problem of raising student achievement for all subgroups and implementing research-based classroom instructional practices. The

district, like most large suburban districts, was beginning to closely look at school reform through the lens of curriculum design, educator attitudes, teaching strategies, and educator-student interactions, all of which might influence effective achievement growth. During the district's many adjustments designed to impact student achievement, the superintendent saw a need to initiate the concept of a high achievement for all student task force. The superintendent stated, "student achievement is at the heart of everything we do" (High achievement, 2007, p. 2). In his research, Flaxman (2003) stated that schools should capitalize on the specific skills and knowledge deficits that may cause the disparity in student success. In addition, educators should respond to the needs through focused and intentional routines, while providing a variety of learning experiences and educational resources.

Weiner (2000), in her research entitled "Implications for Urban Teacher Preparation," claimed that when urban schools have to contend with a school culture of bureaucracy and impersonal relationships, this will impact and reduce many of the teaching behaviors and attitudes that are used to draw on the strengths of the students. Weiner (2006) further stated, "this bureaucratic culture fosters the pervasive assumption that when students misbehave or achieve poorly, they must be 'fixed' because the problem inheres in the students or their families, not in the social ecology of the school, grade, or classroom" (p. 42). When educators fail to foster cognitive or intellectual maturity for students, the consequences may have extensive profound effects on students, and an even faster and sweeping demise of a literate world.

When looking at this concern about school reform, it is clear that the staff in this study will need to examine assessment results to focus on the problems, seek an enduring

understanding for all children, and plan accordingly for adequate instructional strategies along with educator support. School leadership should possess the attitude of being supportive, resourceful, and motivating to educators through this paradigm shift. With this focus in mind, students are empowered to become risk takers in their academic growth.

The educational literature is filled with articles related to the pros and cons which surround narrowing the achievement gap and educator–student interactions. It is clear from the research that classroom instruction should offer students more opportunities for academic success rather than academic paralysis. A study by Marzano and Kendall in 1996,, Erickson in 1998, and Wiggins and McTighe in 1998 (as cited in Burns, & Purcell, 2001) noted that classroom educators played a pivotal part in selecting and emphasizing the type of student learning goals that would allow the students to maintain an enduring understanding of the content being taught. The study further indicated that educators who needed assistance in the development of designing standards-based lessons through the lens of learning goals would need to be supported through professional development opportunities. The relationship between school reform efforts and effective professional development that is tightly woven into the fabric of the classroom may provide significant growth for all stakeholders involved (Darling-Hammond & Sykes, 1999).

Stipek (2006) stated “the key to raising achievement is connecting students with teachers who support them not just as learners, but also as people” (p. 46). According to Stipek, educators with students that are most difficult to teach should particularly demonstrate and foster good relationships with students. With this thought in mind, researchers encouraged educators to elaborate and provide students with feedback that is

specific and concise in addressing the development of learning goals that will significantly contribute to higher student expectations and educator satisfaction.

This discussion comes at a time when school districts are struggling with the mandates of the No Child Left Behind Act (NCLB) for all children and the ability to identify educators that are highly qualified. Helping students reach their academic potential has caused a great debate in the district.

Statement of the Problem

The problem was that in the 21st century, building effective educator-student relationships with children has been found to be crucial in the instructional process. Identifying the students' learning needs will hopefully assist in dispelling the array of negative educator attitudes and teaching strategies about how students' best learn. Pianta (1999) indicated that young children, when engaging in a close relationship with their educators, will exhibit higher levels of student achievement. Promoting an inviting learning environment is critical in the foundation of student success. Educator attitudes and beliefs about how students emerge into literacy, how to culturally respond and modify instructional objectives, how to utilize best approaches in teaching for meaning and understanding, and the ability to use assessment data to systematically drive instructional decisions requires a major shift in an educator's paradigm (Pianta, 1999).

In late 2001 there was a reauthorization of the Elementary and Secondary Education Act, also known as the NCLB. The legislative goal during this time was the focus on improved student achievement. Exploring the problem from an educator's perspective, examining educator beliefs and attitudes about student achievement could have an enormous effect on developing a firm literacy foundation. Positive or negative

interactions along with ineffective instructional practices and feedback in a child's early education may either awaken or dampen their love of learning. To restate, the problem was that in the 21st century, building effective educator-student relationships with children has been found to be crucial. This relationship with conscientious educators could possibly create a change in the student's attitude towards learning.

Ciaccio (2004) noted that an educator should understand the degree of acceptance toward the student, which varies according to the ego strength of the student. He stated, "instead of developing learning inhibitions, such as debilitating fears and ego-eroding labels, these students have embarked on a journey to success in spite of their academic vulnerability" (p. 71). In consideration of the NCLB educators believe that instructing and assessing for understanding are in opposition with federal, state, district mandates and tests (McTighe, Seif, & Wiggins, 2004). These authors noted that there are two misconceptions that interfere with the promise of teaching for meaning: (a) "we have to teach to the test" (p. 27), and (b) "we have too much content to cover" (p. 29).

Bransford, Brown, and Cocking (as cited in McTighe, Seif & Wiggins, 2004) summarized a 30-year research study that noted that "learning for meaning leads to greater retention and use of information and ideas" (p. 28). Educational encounters with educators and other professionals lay the foundation of academic success at the onset of entering a formal educational institution. In the formative stages of a student's schooling, it is crucial to provide possibilities and opportunities for academic development. Creating scenarios for students in classrooms helps in the development of becoming a risk-taker, building of one's self-confidence or self-efficacy, and empowering students to shed the feeling of helplessness to becoming constructivists of their own learning. Otherwise, a

student would become disengaged and unmotivated earlier and thus lose basic academic skills that would be needed in later life to achieve. Students are like sponges and tend to absorb the events of their environment in a pronounced way. Therefore, educator beliefs and attitudes, along with sound instructional delivery, should be marked with enthusiasm and focused on students' potential academic growth. This view concurs with that of Berry (2005), who stated that educational reform requires new forms of schooling. He also concluded that it would be important for educators and educational institutions to have skills and support to ensure that all students will achieve at high levels of expectancy (Berry, 2005).

Educator attitudes and teaching strategies may have a direct impact on student achievement. Efficacy is directly concerned with influencing the attitudes and perceptions of educators and students towards their ability to achieve success based on their own efforts. Henson stated that "a teacher's belief in his or her ability to positively impact student learning is critical to actual success or failure in a teacher's behavior" (as cited in Protheroe, 2008, p. 42). This would impact the need for educators to establish relationships and a deeper understanding of their students' cultural beliefs that would affect individual achievement within the classroom. Howard stated that "Once you convey to children—whether consciously or not—that they are too "dumb" to learn, they will almost always prove you right" (as cited in Feinberg, 2004, p. 2). Woolfolk (as cited in Protheroe, 2008), a longtime researcher, revealed that while educators may have the desire to reach all students, their lack of confidence in their professional craft affects their ability to perform at optimal levels. Hoy, Sweetland, and Smith noted that it is easier to

change the collective efficacy of a school than it is to influence the socio-economic status of the school (as cited in Protheroe, 2008).

Purpose of the Study

The purpose of the study was to investigate efforts to change educator attitudes and teaching strategies through professional development focused on the use of backward design Curriculum and the principles of efficacy. The effects of efficacy were examined to determine changes in the direction of educator interaction with children. The principal of Elementary School A, Alice Aldridge, investigated beliefs and attitudes among educators that identify the best research-based instructional strategies with a high correlation for enhancing achievement for all students. Research findings from this study will determine and distinguish if educators' attitudes have or have not improved as a result of being in-serviced on the concepts of the principles of efficacy and backward design curriculum based on increasing academic student success. For the last 9 years Elementary School A continues to be involved in providing students with an extended school calendar, an additional 25 academic days, focusing on a gift of time. During these years various adjustments were made in attempting to ensure a comprehensive focus on effective reading strategies in support of instructional programs. Emphasis was placed on educators' effective response to interventions and an alignment with student behaviors, implementing a school-wide positive behavior intervention support system that engaged students academically and socially in the learning process. While the extended school calendar may assist in reaching the academic goals at Elementary School A, additional support was provided twice weekly for students reading one or more grade levels below their current grade.

The assistant principal of High School A, collaborator Anissa Harris investigated best teaching practices and behaviors that will increase student achievement for all students. The principal of High School B, collaborator Gwen Grooms, investigated how educators will know when they are experiencing success in their efforts to narrow the racial achievement gap through the use of best teaching strategies, feedback, and ongoing assessments. Educators will utilize best teaching strategies and know what students truly understand. All researchers equally contributed to answering the questions in the literature review, methodology and results with a greater emphasis on their specific areas in the summary and discussion.

Rationale

Professional development within the district has not been building based. It has lacked support, focus, follow-through, and buy-in by district educators. The Comprehensive School Improvement Plan, "a plan developed by local schools to incorporate all major concerns identified by their Missouri School Improvement Plan (MSIP) review and confirmed by the Department's School Improvement Committee" (MODESE, 2008a, p.5), should be a catalyst for determining the building needs for professional growth. MSIP "reviews and accredits the school districts in the state within a five-year review cycle" (MODESE, 2008a, p. 17). Oftentimes when these factors are not considered, educators feel ill-equipped to effectively utilize information provided in a brief professional development session. Professional development has been lacking in educating educators in the Midwestern school district involved in the study. Researchers in this study plan to examine ongoing staff development for educators focusing on the principles of efficacy and backward design curriculum.

Reflective educators need to know the most effective research-based strategies to use in the classroom. The underserved student population may be better serviced if placed in classrooms where educators are well- prepared and knowledgeable in the development of effective learning units and lessons. These educators seek a better understanding of teaching through scholarly study and professional reading. The U.S. Department of Education (2004) reported that studies showed educators are the single most effective factor in student achievement.

Through reflective practice, effective educators monitor their teaching because they want to improve and impact their students' lives. Stronge (2002) stated that "when teachers are confident, they communicate the belief of their own efficacy to students" (p. 21). Educators should be aware of best teaching practices based on research to assist students in learning outcomes. Educators' attitudes and beliefs about how children learn are linked to student achievement.

This research targeted the major problem facing many schools, low academic achievement. The quest to influence educators to increasingly use research-based teaching strategies, resulting in improved academic achievement, is the ultimate goal. For years educators have taught using the traditional approach whereby the lesson is taught and the assessment follows, not knowing whether students have mastered the objectives. Through the backward design method, educators take a different approach by beginning with the end in mind and designing everything towards the end. Knowing that end result, educators are better able to ask essential questions of students to improve understanding during the learning process. During the learning process educators must focus in order on

three basic elements: the desired results, assessment evidence, and the learning activities (Wiggins & McTighe, 2005).

Backward design curriculum is a win-win situation for the educator by organizing instruction and for the student by providing ways to manage large quantities of knowledge with assurance of student understanding. While it is not an easy task to discuss the pros and cons about educators' attitudes and beliefs about how children learn, hopefully the correlation made between effective instructional teaching strategies and high academic student success will serve a productive role toward literacy learning for all students.

Independent Variable

The independent variable was three 45-minute professional development sessions on the principles of efficacy and backward design curriculum. The study involved three suburban schools (Elementary School A, High School A, and High School B). The duration of the study was fall 2008 to spring 2009.

Adult educators from three suburban schools were used in this research study. Consent letters to inform adult participants about the study were distributed to the entire faculty (fall 2008) in order to solicit potential educators. See Appendix E, F, and G for a copy of the district permission letter, board of institution review letter, and informed consent for participation in research study. Educators volunteering had an opportunity to participate in the research on a "first come, first served" basis. Each researcher's role was to secure a group of 15 adults in their school to become part of the study. Once educators were secured, a survey with a Likert scale and an open-ended question component was distributed and explained to the participants (fall 2008). The survey was completed and

tabulated for baseline educator knowledge based on open- and closed-ended questions about the hypothesis prior to treatment. Each researcher worked with 15 educators in their respective buildings to teach the principles of efficacy and backward design curriculum. Each educator was assessed by the researchers on their understanding through development of a curriculum unit using the taught principles.

Teaching practices emanating from the principles of efficacy and backward design curriculum were explored to measure success and identify how educators knew students truly understand what was being taught. The setting of the study was individual classrooms of all educators. The duration of the study with student groups was based upon the length of each unit developed by each teacher participant. Findings will provide insights into how educators' attitudes may shift as a result of each instructional lesson presented, training given by each researcher at their respective locations, anecdotal notes recorded during face-to-face interactions with educators, oral discourse with adult educators and classroom visitations. Elementary School A's training was conducted during grade-level meetings, educator s' planning time and staff meetings. Training for High School A and High School B was conducted during professional learning community sessions, department meetings and staff meetings. Upon completion of the study (spring 2009) each adult educator was given the same survey as a post-treatment assessment to examine the extent of change in educators' attitudes and teaching strategies.

Results for each researcher were individually tabulated at each site involved in this study. The summations of qualitative and quantitative data were equally distributed among the researchers for overall findings of the study.

Dependent Variable

The dependent variable was the lessons redesigned using the principles of efficacy and backward design curriculum to evidence a change in educator attitudes and instructional strategies.

Hypothesis and Research Question

The hypothesis was, An understanding of the principles and strategies of efficacy and backward design curriculum will result in a positive change in educator attitudes and instructional strategies as measured by a Likert scale survey results.

The research question was, How do efforts to change educator attitudes and teaching strategies through professional development focused on the use of backward design curriculum and the principles of efficacy affect educator beliefs and attitudes, as measured by written open-ended questions?

Definitions of Terms

Achievement gap – For the purpose of this study, this term refers to the differences in academic achievement between various subgroups of students. The achievement gap is further defined in terms of performance as measured by standardized tests (Singleton & Linton, 2006).

Adequate yearly progress – Refers to the progress which a district must accomplish by 2014 under the federal mandate of the No Child Left Behind Act, so all students are performing at or above the proficient level on standardized tests (Singleton & Linton, 2006).

Attribution theory – A theory based on the source(s) on which a person bases his or her successes and failures. This theory states that a person attributes what happens to

him or her to outside persons, places, or events in his or her life or attributes success and/or failure to his or her own efforts (Weiner, 1974).

Authentic assessment – A term used to refer to assessment tasks that evoke demonstrations of knowledge and skills in ways that they are applied in the "real world." Ideally, authentic assessment tasks also engage students and reflect the best instructional activities. They are tasks directly related to the goal(s) of the instructional sequence (Reeves, 2007; Schmoker, 2009; Wiggins, 1993).

Backward design curriculum – A way of thinking and a process based upon first determining what learners should understand and be able to do, then determining how success at achieving this will be measured, and finally planning the activities that will get the student to the identified goal(s) which were first determined (Wiggins & McTighe, 2005).

Big idea – A concept, theme, or issue that gives meaning and connection to discrete facts and skills (Wiggins & McTighe, 2005, p. 5).

Comprehensive school improvement plan – A plan developed by local schools to incorporate all major concerns identified by their MSIP review and confirmed by the department's school improvement committee (MODESE, 2008a).

Corrective feedback– Provides student with an explanation as to what is accurate and what is inaccurate in terms of student responses. Students are asked to keep working on a task until they succeed. (Ainsworth & Veigut, 2006).

Efficacy – A process based on a theory of self-attribution which states that the effect on a person is actually caused by the person. Efficacy states that the locus of

control is internal (within the learner) and that he or she has the power and ability to affect success based on effort (Dweck, 1999; Howard, 1980).

Entity theory – A theory that is directly linked to the goals associated with student performance. A judgment of performance is evaluative and therefore final. An example of the entity theory and student performance is seen in all standardized testing (Dweck, 1999; Howard, 1980).

Essential questions – Questions that require answers that stimulate the students' ability to ask thought-provoking questions that deepens their understanding (Wiggins & McTighe, 2005).

Formative assessment – An ongoing, diagnostic assessment used in providing information (feedback) to guide instruction and improve student performance. This assessment *for* learning means that educators are asking how they can use the assessment process to verify and improve teaching strategies, which provides continuous feedback causing students to learn more and increase achievement in the future (Ainsworth & Veigut, 2006; Reeves, 2007).

Incremental theory – A theory that provides goals which are learning benchmarks on the road to student performance. These learning goals are marked by feedback designed to improve the student's performance prior to a test of performance (Dweck, 1999; Howard, 1980).

Learned helplessness – Occurs when an individual believes that any response of theirs to a stimulus is inaccurate and thus failure becomes a pattern of induced behavior. The individual develops an expectation of failure (Dweck, 1999; Howard, 1980).

Missouri School Improvement Program (MSIP) – The Missouri School Improvement Program reviews and accredits the school districts in the state within a 5-year review cycle. School district reviews cover the areas of resources, process, and performance. The process of accrediting school districts is mandated by state law (MODESE, 2008a).

Moderate risk zone (MRZ) – A learning zone that students enter to increase their understanding, educators are attempting to motivate students. It denotes a place where students, through the efforts of their teachers, have gained confidence and comfort since they are progressively and incrementally learning through learning goals which provide feedback toward student performance (Dweck, 1999; Howard, 1980).

No Child Left Behind (NCLB) – An educational reform passed by Congress on January 8, 2002. The reauthorizing of the Elementary and Secondary Education Act affected school districts from kindergarten to high school (U.S. Department of Education, 2004). The No Child Left Behind Act is designed to improve student achievement and change the culture of America's schools.

Performance-based assessment – Learning activities that require students to construct a response, create a product, or perform a demonstration. Since performance-based assessments generally do not yield a single correct answer or require a particular solution method, evaluations of student products or performance are based on judgment guided by criteria (Pollock, 2007; Tomlinson & McTighe, 2006).

Possibility/opportunity (P/O) blindness – The three components of learned helplessness lead to P/O blindness, where an individual feels as if "Nothing I can do will be of any help." Individuals develop low expectations of themselves and do not try to do

anything to possibly improve. They develop an inability to see any possibilities for academic success. Learned helplessness obscures the possibility of student opportunities for success (Dweck, 1999; Howard, 1980).

Power standards – Subsets of the entire list of grade- or course-specific learning outcomes described in the content standards for a given content area. These high-impact standards represent what students must know and be able to do by the end of a particular grade level or course. They represent not all that an educator would teach but those *prioritized* learning outcomes that are absolutely essential for academic growth (Reeves, 1997, 2006, 2007).

Principles of efficacy – A concept that involves a change in one's paradigm based upon the theory of "incremental" learning. This operational model is a way of thinking rather than a process. A student's increased efforts toward the learning activities will enhance their progress towards academic development. The efficacy paradigm can be used by educators to foster high expectations for students and educators as well as correlate with positive educator -student relationships and academic growth from the learner. This operational model shifts students from a focus of "helplessness" to a focus of mastery. Through the principles of efficacy educators are influenced to examine and/or modify instructional practices, mobilize effective efforts through engagement, feedback, and research based best teaching strategies with an outcome of student mastery and academic development. Feedback related to student achievement is an important attribute of incremental learning goals throughout the process. By doing this the importance of lesson design will provide ongoing assessment feedback for academic growth (Dweck, 1999; Howard, 1980).

Process of development (POD) – This process denotes the educators' success in moving students into attributing success to their own efforts. It is a process that mirrors the student's entry into the MRZ, because the student has become efficacious thus believing that he or she can succeed based on their own efforts (Dweck, 1999; Howard, 1980).

Research-based teaching strategies – A term used to describe instructional practices that have been widely researched, analyzed and adopted widely to improve academic achievement. For the purpose of this hypothesis the nine categories of instructional strategies with strong effects on student achievement will be taken from McRel's research (Marzano, Pickering, & Pollock, 2001). Research-based teaching strategies should include "effective lesson design." Madeline Hunter identified six effective steps for excellent educators to employ throughout their lesson design and instructional practices. These steps and strategies also form the basis for backward design in which educators must identify curricular goals precursor subskills and bodies of enabling knowledge (Fisher & Frey, 2007; Jacobs, 2004).

Summative assessment – A culminating assessment for a unit, grade level, or course of study providing a status report on mastery or degree of proficiency according to identified learning outcomes (Reeves, 2007).

Win-win/J-curve – A theory based on the proposition that designing curriculum to ensure that all students understand based on performance tasks with ongoing assessment throughout the learning sequence will produce a curve that measures steady student improvement in academic achievement, as opposed to a bell curve, which shows an equal distribution of grades. The J-curve concentrates on learning and incremental goals and is

a product of the principles of efficacy and backward design curriculum, whereby the educator ensures student success (Reeves, 2007).

Zone of development (ZOD) – A student is making steady progress in learning and understanding due to attributing their success to their own efforts. The educator maintains the student in the ZOD through design of curriculum which provides activities with ongoing assessment that enables the student to continue progressing academically (Dweck, 1999; Howard, 1980).

Limitations of Study

Maturation – Over the course of this project maturation threatened the internal validity produced by physical changes in subjects, passing of time, and using pre and post data.

Attitude of subjects – The study was limited to the number of subjects involved in the pre and post surveys, which will account for the different attitudes and teaching strategies. The attitude of participants toward the study can pose a threat to internal validity.

Loss of subjects (mortality) – A threat to the internal validity produced by differences in the results of the data collection. Subjects may be absent during the collection of data or fail to complete lessons or questionnaires, or other instruments.

Location – The particular locations in which data are collected, or in which an intervention is carried out, may create alternative explanations for results. The location in which the mini-workshops, discussions, and surveys are administered may affect responses.

Instrument decay – The way in which the study's survey and the training documents associated with principles of efficacy and backward design curriculum are used by the researchers may create problems due to different interpretations of the results based on when the instruments are administered.

Data collector bias – Data collectors and/or scorers may unconsciously distort the data in such a way as to make certain outcomes more likely. Results were tabulated manually, thereby possible investigators fatigue and biases could have an impact on the results.

Summary

The purpose of this study was to heighten the awareness level of educators regarding the impact of educator attitudes and teaching strategies on student achievement. Since the No Child Left Behind Act has mandated districts to address and be held accountable for the academic success of all students, it becomes imperative to closely examine the effectiveness of educator–student interactions in educational settings. School reform must be revisited for its effectiveness on academic services. As a nation, it is definitely a wise move to embrace all subgroups academically. The better one's understanding is about curriculum design, ways to support student growth incrementally and focus on learning outcomes rather than performance outcomes will only enhance the nation's literacy rate. Children who are left out of the mainstream of society or who have been allowed to fall between the cracks academically will be faced with a chance of living less than an adequate life. Weissglass (2001) noted that if one is allowed to speak honestly and authentically about issues that address the underserved, it is then that one can change attitudes and beliefs.

As a nation, it is imperative that students are equipped with the right knowledge to be life-long learners. President Obama is committed to holding educators accountable for student learning and offering federal money to support state initiatives. On March 10, 2009, President Obama discussed education issues at the U.S. Hispanic Chamber of Commerce, saying "By 2016, four out of every ten new jobs will require at least some advanced education or training" (Lee, 2009, para. 4). School reform must be addressed in order to adequately prepare students to compete in a global society. Educators who gain a better understanding of ways to increase student achievement will only enhance and prepare students to excel in school.

Chapter Two – Review of Literature

An overview of literature on investigating efforts to change educator attitudes and teaching strategies through professional development focused on the use of backward design curriculum and the principles of efficacy. This chapter is divided into seven major components: achievement gap, narrowing the achievement gap, educator attitudes, lesson design, student understanding, understanding by doing, and effective teaching strategies. Three critical subtitles supported two of the major components that further analyzed the literature in examining both the achievement gap and narrowing the achievement gap. Each component and subtitle will provide key insights about the research question.

Achievement Gap

Researchers have studied the achievement gap between black and white students for years but have not found concrete solutions. The achievement gap refers to the differences in academic achievement between black and white subgroups of students. The achievement gap is further defined in terms of performance as measured by standardized tests. Marzano, Waters, and McNulty (2005) found that educators are plagued with myths associated with the achievement gap. These myths must be confronted to solve the problem. Some of the myths associated with this problem are that educators believe that low-achieving students are affected by factors external to the school such as poverty, lack of motivation, socioeconomic background, absence of parental involvement, and lack of cultural expectations favorable to education rather than factors internal to the school such as changing the curriculum and instructional strategies employed. Educators must ask questions that would stimulate the student's ability to think critically and deepen their understanding, hence dispelling the myths facing academic achievement (Wiggins &

McTighe, 2005). This form of questioning will help educators to know and be able to narrow the achievement gap between the white and black subgroups.

Williams (2003) noted, "The gap is especially problematic because of its role in continued social and economic inequality in the United States" (p. 25). They added that during the 21st century the achievement gap broadened to include other ethnic groups such as Native Americans, Hispanics, Asian Americans and black and white students. Gordon (as cited in Williams, 2003) determined that few efforts have been made in the direction to closing the achievement gap. According to the National Governors Association Center for Best Practices (n.d.), since the mid 1980s school reform has been a top priority for school districts and other state policy makers. The achievement gap has been highlighted through the No Child Left Behind Act (NCLB) that mandates schools to examine all student subgroup performance. Schools still struggle with meeting the highest level of educational attainment for various subgroups (National Governors Association Center for Best Practices, n.d). D'Amico, Lee, and the National Center for Education Statistics, and Olson determined that educational reform reflects few to no changes in the number of students affected by the achievement gap who have become educationally successful (as cited in Williams, 2003). The gap is found to be in every school district and socioeconomic group and covers a wide spectrum of educational indicators such as standardized test scores, academic grades, dropout rates and many others.

Williams stated that the achievement gap has been flat and, sometimes, wider between black and white students since the 1970s. Schools had attempted, often unsuccessfully, to deal with the factors external to the school, which were often beyond

their control; so, many schools had been adjusting their focus to internal factors to close the achievement gap (Williams, 1996). Wang and Reynolds (1995) proposed ideas relative to closing the achievement gap. They stated that public schools should be inclusive and integrated, and not separated by race, gender, language background, ability, or any other characteristic which would minimize and require a compelling rationale (as cited in Williams, 1996). Rabiner, Murray, Schmid and Malone (2004) conducted a study on the relationship between ethnicity, attention problems, and academic achievement. This study examined the relationship between inattention and achievement among white, black and Hispanic first graders. The study emphasized the gap was greater between white and black students with black students having a higher rate of attention difficulties. The findings highlighted that educators should develop methods for identifying and boosting academic achievement (Rabiner et al., 2004).

Haycock (2001) reported that the gap could be described by figures related to the gap: "Only 1 in 100 African Americans age 17 could read and gain valuable information from specialized text such as the science section in a newspaper" (p. 6). This compared to 1 in 12 white students age 17. D'Amico (2001) found a 1988 assessment showing a 31 point difference between black and white students age 17 in reading. Haycock and Gerald (2002) reported later that by the end of high school, black and Hispanic students performed about the same as white eighth graders. In recent years, less than half of all black students achieved a combined score of 700 on the Scholastic Aptitude Test (Hammond & Howard, 1985). During the 1970s and early 1980s, the National Assessment of Educational Progress (NAEP) showed substantial improvement of black and Hispanic students and a significant narrowing of black–white and Hispanic–white

achievement gaps. Since then, this progress has slowed and even shown signs of program regression (as cited in Boeck, 2000).

Holzman (2008) found that from 1978 to 1986 greater academic improvements of lower-level students across racial and ethnic groups occurred. He discovered that low-performing students gained more than high-performing students when minimum competency was emphasized during the 1970s and early 1980s. However, the opposite was true as these students moved into the period of higher national and state learning standards during the 1990s (Holzman). According to the Schott Foundation (2008) report on black males, more than 50% of them did not receive diplomas with their cohorts in the 2005–2006 school year.

Many different strategies have been proposed to encourage student achievement and academic success in the classroom. Steinberg (2006) stated, "Whether we are talking about students whose cultural background differs from the mainstream or about students whose cognitive strengths diverge from the model commonly emphasized in schools, the same principle applies: Teaching to strengths works" (p. 35). McTighe, Sief, and Wiggins (2004) found that through exploring essential questions and connecting new information with prior knowledge students develop meaning and gain understanding of new content. Williams (2003) found that a broader understanding of the cultural value system in which students grow up plays a major role in their development and school practices. All students' interpersonal engagements through interactions with families and communities are culturally diverse upon entering the educational environment. Cultural diversity throughout the United States favored the dominant European American culture as the mainstream of educational reform as a means of closing the achievement gap.

Consequently, districts should revisit the demographic makeup of students in order to consider additional cultural influences that students bring to the classroom for academic reform.

D'Amico (2001) stated that changes in the school curriculum and use of instructional strategies focused on higher-order thinking skills might benefit student performance. However, white students benefited more from the higher-order skills than did black or Hispanic students. D'Amico also found that black students did better in earlier stages of their education but fell below the academic achievement of white students as both advanced through the grades. D'Amico noted that poorly developed and aligned curriculum and instruction appeared often in schools with high minority populations. Fisch-Rothstein and Trumbull (2008) stated, "In an effort to boost students' state test scores, some districts have turned to packaged curriculum and reform programs" (p. 169). Fisch-Rothstein and Trumbull (2008) found that "informed teachers promoting good classroom practices could have a great impact on a child's educational experiences" (p. 170). Additional research demonstrated that minority children were not being challenged academically. Reasons found included a belief that minority students could not handle the work due to the lack of quality educators in predominantly minority classrooms. D'Amico concluded his findings with the identified need to create curriculum that developed and maintained the interest of all students, had high standards, and which also included culturally sensitive material. In contrast, Hedges' overall recommendation was that "educators needed to look at more than one study on a given topic and analyze the findings" (as cited in Marzano, Pickering, & Pollock, 2001, p. 4).

There should be a high correlation between educator attitudes, educator perceptions, and high expectations in order for students to experience academic success. Williams (2001) studied the relationship between curriculum, high standards, and the achievement gap. Her findings demonstrated that minority students could not be expected to close the achievement gap if the curriculum was not challenging and meaningful. Haycock's research agreed by stating that in addition to curriculum, having high expectations was extremely important and those children could achieve at higher levels if they were taught at higher levels (Haycock & Jerald, 2002). Krueger and Whitmore concluded that class size reductions would have the greatest positive effects toward reducing the black-white achievement gap for schools with many minority students (as cited in Bracey, 2001). To summarize, the achievement gap began to close during the 1970s and early 1980s. But in the 21st century efforts made by educators, districts, and policymakers continue to be a challenge toward meeting NCLB. Through good classroom instruction, and awareness of students' strengths, educators will be able to develop academic performance among all subgroups with an outcome of enhanced critical thinking skills. Educators who foster a student's ability to reason at a heightened level will assist students to achieve an increased sense of efficacy.

Principles of efficacy. Researchers at the Efficacy Institute (1987) found that everyone from educator to principal and student to parent must begin to focus on change if they want to see improvement in their schools. There is no magic remedy or quick-fix pill, but the solution will only come with trial and error. Therefore, educators must focus on improving student achievement in order to reduce the gap through an educational reform that improves student understanding and allows them to get a deep and enduring

understanding. He stated that by using principles of efficacy, students will grow to their fullest potential by taking ownership of their successes and failures. Schools, communities, and families should be committed to the achievement of all children. The commitment should be long-term in order to increase educational achievement. Meanwhile, when students are experiencing low self-efficacy or self-confidence they then give up academically and the commitment to decrease the academic achievement gap between subgroups diminishes.

Wiggins and McTighe (2005) stated that taking time to assess where students are now and where the educators want them to be will help accelerate student development. By using a concept of backward design educators will have a better understanding of student outcomes and be able to assess their learning for growth. They defined backward design, as

> An approach to designing a curriculum or unit that begins with the end in mind and designs towards that end. Although such an approach seems logical, it is viewed as backward because many teachers begin their unit design with the means – textbooks, favored lessons, and time-honored activities – rather than deriving those from the end – the targeted results, such as content standards or understandings. We advocate the reverse of habit: starting with the end (the desired results) and then identifying the evidence necessary to determine that the results have been achieved (assessments). With the results and assessments clearly specified, the designer determines the necessary (enabling) knowledge and skill, and only then, the teaching needed to equip students to perform. (p. 338)

Backward design curriculum clearly specified the results desired first, the criteria for assessment second, and planning learning activities last. D'Amico (2001) cautioned against looking only at standardized test scores because too many students are not beginning on an equal plane. If an educator's knowledge, skill, and teaching methods are limited, then that individual's-self-efficacy as an educator is constricted and students are not provided effective learning experiences.

In the Association for Supervision and Curriculum Development's video program titled *Learning about Learning,* the presenters emphasized that students' understanding is directly dependent on their prior knowledge, which will assist them in making sense of what they are supposed to learn by building upon what they already know. The big idea "is a concept, theme, or issue that gives meaning and connection to discrete facts and skills" (Wiggins & McTighe, 2005, p. 58). Learning occurs through social interaction that allows the child to verbally rehearse particular situations that prepare the child to be a lifelong learner. Learning provides student experiences that extend outside the school and assist students in becoming competent in the context of performance. Successful learning results when students use universal learning strategies spontaneously involving problem solving and decision making (Association for Supervision, 1990). Therefore, when students are able to utilize their rich cultural experiences within the learning environment, then they will readily be able to transfer problem-solving strategies in making sense of their everyday surroundings.

As educators set high goals and find additional techniques to assist students, the students' self-efficacy improves. Shaughnessy reviewed the data surrounding educator efficacy and student achievement. He found that judging students based on performance

and educators' unwillingness to set high expectations could result in many students becoming debilitated and giving up (as cited in Protheroe, 2008). The child becomes unmotivated and needs educators to affirm the connection between the child's efforts and achievements (Bedford, 2008). According to Shaughnessy, educators who set high goals, who persist, who try something different when one approach is found lacking are more likely to have students who learn (as cited in Protheroe, 2008).

Researchers at The Efficacy Institute (1987) found that the principles of efficacy involved a change in one's paradigm based upon the theory of "incremental" learning. This operational model is a way of thinking rather than a process. Students' increased efforts toward the goals of individual learning activities will enhance their outcome towards academic development. The efficacy paradigm can be used by educators to focus high expectations for students and educators as well as correlate with positive educator - student relationships and academic growth for the learner. This operational model shifts students from a focus of helplessness to a focus of mastery. Through the principles of efficacy, educators are influenced to (a) examine and/or modify instructional practices, and (b) mobilize effective efforts through engagement, feedback, and research-based best teaching strategies with an outcome of student mastery and academic development. Feedback related to student achievement is an important attribute of incremental learning goals throughout the process.

Efficacy is a process based on a theory of self-attribution which states that the success of a person is actually caused by the person's efforts. The concepts of efficacy imply that the locus of control is internal (within the learner) and that he or she has the power and ability to effect success based on effort. Jensen (1998) stated that "Contrary to

a temporary unmotivating state, learned helplessness is a chronic and devastating condition" (p. 57). Learned helplessness occurs when an individual believes that his or her efforts will elicit a negative response and this becomes a pattern of induced behavior. The individual develops an expectation to fail. According to Jensen (1998) there are three components to learned helplessness: motivational, cognitive, and emotional.

Motivational. A helpless individual seems to lose all motivation to act—he or she "just lies there" (Jensen, 1998). Students that experience this helplessness are often bullied, come from an abusive home, are embarrassed or humiliated by the educator in front of classmates, and/or experience traumatic events. The impact of motivational helplessness could surface in the form of verbal, physical, or psychological events.

Cognitive. A helpless individual actively learns that responses will not yield positive outcomes. The intelligence of the individual is not brought to bear on solvable problems and there is no relationship between the response and outcome, which creates in the student no motivation to continue. Students are immobilized by embarrassment that takes place in the classroom, which causes them to develop defense mechanisms to fight back, such as getting an adult involved, walking away, and making poor behavior choices.

Emotional. Helplessness is thought of as a prime cause of anxiety and depression. These students have given up because of repeated criticism by the educator and constant exposure to threats and high stress internally and externally.

The three components of learned helplessness lead to (P/O) blindness (Howard, 1980), where individuals feel their efforts will not be academically beneficial. Individuals that develop low expectations stop trying new initiatives. P/O blindness can also be

socially induced where individuals will expend energy in trying to get others to allow them to do something to make things happen. Instead, these individuals miss available opportunities to free themselves of negative or oppressive influences and remain helpless (Dweck, 1999; Howard, 1980). Helplessness is enhanced by the complicity model (Howard, 1980) which is a means of keeping students in their place as educators fail to provide appropriate feedback, goal setting, and instructional strategies. Consequences of an educator's failure to respond to students' academic needs can result in false entitlement, backbiting, dependency, and inability to organize (Howard). It should be noted that when educators fail to give corrective and timely feedback, students' inability to make decisions and take directive actions breeds more helplessness.

According to The Efficacy Institute (1987), educators should know and be able to build supportive interpersonal environments with positive expectations for student learning and development. The POD denotes educators' success in moving students into attributing success to their own efforts. The MRZ is an area in the learning zone where educators are attempting to motivate students to enter so as to increase their understanding. It denotes a place where students, through the efforts of their educators, have gained comfort since they are progressively and incrementally learning through learning goals which provide feedback, formal or informal interactions, toward student performance. This process mirrors the student's entry into the MRZ because the student has become efficacious thus believing that he or she can succeed based on his or her own efforts. Students should ultimately take responsibility over their own thought processes and the POD through their efforts or ineffective efforts to learn successfully. The educator should be able to communicate the expectation that everyone can learn to get

better and stronger. They should also show real-world connections as content is being introduced. Students' active engagement in goal setting or skills is important to making meaning of their own learning. Students cooperatively work together in identifying skills learned at each incremental step utilizing failure as feedback (The Efficacy Institute, 1987).

Educators offer encouragement and rewards for each incremental step, resulting in both educator and student making steady process in learning and understanding though the ZOD. The ZOD is a process whereby the student is making steady progress in learning and understanding due to attributing success to their own efforts. The educator maintains the student in the ZOD through design of curriculum which provides activities with ongoing assessment that enables the student to continue progressing academically. Feedback is the assessing device of the MRZ. Openness to feedback and the capacity to use it effectively allows students to move across the MRZ to get better at what they do. The greater the consciousness of the skills required for effective teaching, the more the educator can use his or her influence to speed and fine-tune the POD. Managing the development of students fosters a win-win environment by stressing common objectives, rewarding cooperative behavior, and reducing fear and distrust. Educators should be cautious of the risks involved and be willing to share in any failures in a balanced way; otherwise students would not be willing to shoulder the entire burden (The Efficacy Institute, 1987). All stakeholders must buy into educational reform. Once students are able to access the curriculum through connections, and prior knowledge, the comprehension will increase. When students are able to benefit from rich and explicit feedback then they will be contributors to their own self-attribution. Hence, helplessness

will not be an option of choice. And so, the research about the achievement gap in the next section will reveal how educators continue to address the achievement gap.

Opposition to achievement gap. Haycock researched a question dealing with what would happen if white scores were not that impressive but black scores matched. The gap is closed but the scores are equally bleak. Haycock determined that high-test scores are not the only numbers that should be looked at to determine achievement (Haycock & Jerald, 2002). These researchers found that the focus of the school should be on success and not just test scores. Test scores are published in the community as outside accountability for schools. This then becomes an image of failing for the school and there is nothing within the school to combat outside accountability (Haycock & Jerald).

Reeves (2008) stated that school systems need to create new models of accountability that are more meaningful and constructive than those in place. These new models include more than test scores and measure a wide variety of other factors such as teaching strategies, parent involvement, and extracurricular activities. Schools should be allowed to measure improvement of students from beginning levels, thus practicing value-added analysis which bases student success on each student's individual progress.

D'Amico (2001) discovered that school communities that reflect a focus on high academic achievement are succeeding. Schools are succeeding with black, brown or poor kids by providing an education allowing students to build on past experiences, build confidence, mobilize engagement, build trust and create high academic expectations (Haycock and Jerald, 2002). Schwartz (2001) reported that most of the strategies on closing the achievement gap focus on changing the capability of the entire group. Educators need to assess strengths and weaknesses of individual students, and individual

attention should help ensure that each student successfully takes advantage of available educational opportunities.

Protheroe (2008) stated that when, because of lack of confidence, educators do not accept the challenges of student learning, they shift the accountability to external factors outside of the classroom.

> Teachers in a school characterized by a can-do, together we can make a difference attitude are typically more likely to accept challenging goals and be less likely to give up easily. In contrast, teachers in a school characterized by a low level of collective efficacy are less likely to accept responsibility for students' low performance and more likely to point to student risk factors, such as poverty and limited knowledge of English, as causes. (p. 44)

Williams' (2001) research evidenced the credibility of teacher attention remaining constant on individual attention, integrating strategies on how people learn rather than what they learn, and building learning around children's interests. D'Amico's (2001) research emphasized encouragement of children to attend school every day as important. Williams (2001) stated that programs designed to close the achievement gap between black and white students must be focused and concentrated to have maximum influence on the improvement of student success. The emphasis on improved academic achievement called for all stakeholders to become open, honest, and authentic as schools found ways to modify curriculum and provide opportunities for reshaping students' lives for a global society.

Jennings and Rentner (2006) found that the student performance gap might be influenced by multiple factors related to academic success in classrooms. On a daily basis

academically deficient students were not being afforded as much of an opportunity to obtain a quality education as were their counterparts due to gap disparities. Many students are not provided the chance to develop their academic potential of finding long-term educational success, as well as to capture the notion of the "American dream." They stated that many school districts' find standardized test to be limited in determining a student's academic growth. However, they noted that "No Child Left Behind (NCLB) act has directed greater attention to low-achieving students and intensified efforts to improve persistently low-performing schools" (p. 110).

According to Fuhrman and Elmore (2004) and Linn and Baker (2002) the overall premise behind NCLB was to achieve equity for all students and to ensure that regardless of external circumstances a child would be instructed with the same rigor and be held accountable for the same type academic excellence. Hillard (2003) supported this account, stating, "If tests and assessments are truly valid, then equity is assured. By calling for validity, we keep the matter of scientific adequacy evaluation before us" (p. 2). He concludes in the American Educational Association that unfair placement of students not performing academically will be related to how educators view assessment and instruction (Hillard, 2003).

Research from Ferguson, the National Center for Educational Statistics, Perie, Grigg, and Dion, and Perie, Grigg, and Donohue found that schools were able to reduce the disparity in the achievement gap (as cited in Walser, 2006). They noted that between the years of 1970 and 1990 there was a narrowing of the achievement gap. Further, black and white student dropout rates from high school decreased by 50%. Ferguson indicated that the gap between reading scores of 17-year-old black and white students disappeared

and math scores narrowed by one third for 62% of the black and white students. Yet Perie, Grigg, and Dion (2006) and Perie, Grigg, and Donohue (2006) found that since the 1980s the closing of the gap had stalled, resulting in only marginal gains. They further noted during the period of 1996 and 1998 the gap between blacks, whites, and Hispanic students on the National Assessment of Educational Progress (NAEP) declined by 6–8 points (Teachers 21, 2003.).

Educators' perceptions of students' abilities in the classroom are crucial to academic success (The Efficacy Institute, 1987). Studies conducted by the U.S. Department of Education (2004) noted that educator quality was the single most effective factor in student achievement. The NCLB (2001) concurred by indicating that qualified educators with an array of effective teaching strategies had an enormous impact on student achievement. NCLB called for school districts to become active in developing approaches to educating all children. It verified the achievement disparity between white and black students and stated that this must be addressed since children who were not adequately educated would become a liability rather than an asset to the economic and social well being of the United States. Howard (as cited in The Efficacy Institute, 1987) and Wiggins and McTighe (2005) concluded that schools that understood the achievement gap and deepened their conversations about the principles of efficacy and backward design would gain meaningful insights on how to contribute to the academic performance of all students and thus close the achievement gap between black and white students.

Research conducted by Goddard, Hoy, and Hoy showed the importance of good teaching in closing the achievement gap (Goddard et al., 2000). The impact of good

teaching was the most important component in this process (Singham, 2003). Joyce and Showers (1992) concluded that continuous professional development of educators, especially those new to the profession, would head the list of all education reforms. A sustained program would use the best knowledge of what made students want to learn and would provide new educators with the kinds of mentoring, training, and feedback that could assist them in becoming skilled practitioners who could have a transforming effect on students. According to expert recommendations, "top down training seminars are often outweighed by flexible but purposeful menu of teacher networks, study groups, partnerships with universities, peer reviews, online-learning activities, and curriculum-development projects" (Education Week, 2004, p. 2).

A second component of effective teaching was found by Wiggins and McTighe, (2005) as active learning by students. Active learning involves hands-on and inquiry-based instruction, knowing what it takes to create conditions for enhancing intrinsic as opposed to extrinsic motivation in students, and the ability to prepare challenging material and provide support for student success. Bonwell and Eison (1991) reported that the use of these techniques in the classroom was vital because of their powerful impact on students' learning. They further concluded that a "thoughtful and scholarly approach to skillful teaching required that faculty become knowledgeable about the many ways strategies that promoted active learning had been successfully used across the disciplines" (Bonwell & Eison, 1991, p. 1).

The final component was the need for the educator to have pedagogical content knowledge in the specific subjects being taught. Singham (2003) believed that "no student is ever a blank slate, they all came with preconceived notions and a teacher

needed to learn what the specific preconceptions were for a particular topic and, instead of ignoring them, using these preconceptions to teach students more effectively" (p. 589). Awareness that the achievement gap is a symptom of more widespread educational problems becomes relevant to educators, thus allowing them to treat the achievement gap as an educational problem rather than a racial problem. To restate, research implies that a students' achievement level should be viewed from many variables of ongoing assessments. Students experiencing difficulties in an instructional setting should be exposed to a classroom atmosphere that is caring, maintains high expectations and provides opportunities for students to function in a global society and become life-long learners. To this end, the achievement gap is an initiative that all stakeholders must be accountable for setting a firm instructional foundation for all subgroups.

Narrowing the Achievement Gap

Rothstein (2004) stated, "While it is true that low income and skin color themselves don't influence academic achievement; the collection of characteristics that define social class differences inevitably influenced that achievement" (p.106). Asres (2008) found that in order for the achievement gap to be closed, educators would need to examine objectively both the purpose and the history of our educational system. Asres continued, saying that preparing the youth for good citizenship and for living a productive life is a responsibility of both private and public schools. While many educators work tirelessly every day as advocates for struggling students, numerous other educators within low-income schools do not believe students can meet high academic expectations. School leaders must accept the responsibility for addressing the long-standing educational inequities. School leaders must commit themselves to engaging in

deep inquiry about the nature of the problem and its root causes (Asres, 2008). Research into the causes of gaps in student achievement between low-income, minority students and middle-income white students began almost a decade ago, and during that time showed that there are both school-related and home- or community-related factors which impacted the academic achievement of students (Goodlad & Keating, 1994; Williams, 1996; Jencks & Phillips, 1998; Lee, 1998; Haycock, 2001; Shannon & Bylsma, 2002). And so, the essential question will investigate efforts to narrow the racial achievement gap and how educators will know when they are experiencing success.

Haycock and Jerald (2002), executive director of Education Trust, urged school leaders to be proactive and not let factors that are internal and/or external distort their perceptions and attitudes of what students are able to accomplish in the classroom.

> Accept the challenge and join the ranks of more than 4,500 high-poverty and high minority schools that are performing in the top third of their states in at least one subject/grade combination… [rather than] dragging our heels and blaming the underachievement problem on the kids or their families, as some of our colleagues do. (p. 20)

Studies revealed a high pattern of correlation between a child's socioeconomic status and his or her school performance. Gardner (2007) concurs with Haycock and Jerald (2002) that growing up in poverty affects the human development of the brain due to a lack of nourishment. Yet recent research reveals that academic resources and curriculum of a student is an even more important predictor of school achievement than is socioeconomic status. Haycock and Jerald (2002) focused on what schools do that greatly

impact closing the racial achievement gap. Below are four key actions that Haycock and Jerald recommended:

- Have uniform standards. “Clear and public standards for what children should learn at benchmark grade levels.”
- Make the curriculum challenging. High school students who took college-preparatory courses performed much better on standardized tests than students who took “vocational” classes, even if those students were not high performers to begin with. She added that in 1992, just under 26% of black and 23% of Latino 10th graders were on a “college prep” track, compared with 34% of whites. Haycock and Jerald wrote, “The single most important determinant of who succeeds in college is based on rigorous coursework.”
- Help students catch up. Higher standards would only frustrate students who lacked a good foundation in reading and mathematics. Haycock said, “We need to double or even triple the amount (and quality) of instruction that they get.”
- Provide good teachers. Poor minority students are more likely to be taught by under qualified teachers (no matter how qualification is measured). Research showed that good teaching is “the thing that unquestionably matters most” to student learning. (2002, pp. 9–12)

However, learning involves more than cognition. Students bring a tremendous range of skills and background experiences when stepping into a formal school environment. Garner (2007) concluded that learning is essential when considering the

intangible factors of how struggling students see themselves, the world and their educators. According to researcher Williams (2001), publisher of one of the first texts on the achievement gap, rather than instituting single program quick fixes, school leaders should concentrate on implementing a coherent and broad range of strategies designed to improve "teaching and learning" over time (p. 21). According to Garner (2007), educators will need to "meet students where they are and help them move forward" (p. xvi). Garner believes that "helping students develop cognitive structures would help develop metability and thus students would get it when it was taught" (p. xvi).

Lambert et al. (1995) stated that the patterns of learning at the heart of this work lay in constructivism, which relates to theories of how children, adults, and even organizations could learn. They determined that individuals brought past experiences and beliefs, as well as cultural histories and world views, into the process of learning. When combined, all of these "factors influenced how learners interacted with and encountered new ideas and events" (Lambert et al., p. xi).

The influence of Jean Piaget has impacted the proponents of constructivism over his 50-year career span. His work centered on cognitive development and the formation of knowledge. He concluded that individuals construct knowledge as a learner based on life experiences. Piaget's work centered on constructivism. An individual's cognitive structures help the learner make sense of what the human mind was perceiving (J. G. Brooks & Brooks, 1999, pp. 25–26). Lambert et al. stated that "Constructivism does possess a richness of thought, a different world view that offers a sense of possibility rather than limitation to human growth and development" (1995, p. 27).

According to Wadsworth (1996), Piaget encompassed four basic cognitive concepts to better understand the process of intellectual organization.

- Schema – The cognitive or mental structures by which individuals intellectually adapt to and organize the environment (p. 14).
- Assimilation – The cognitive process by which a person integrates new perceptual, motor, or conceptual matter into existing schemata or patterns of behavior (p. 17).
- Accommodation – The cognitive process by which a child tries to assimilate into existing schemata when confronted by new stimulus. Thus, accommodation is the creation of new schemata or the modification of old schemata, which results in change in, or development of, cognitive structures (pp. 17–18).
- Equilibration – A state of balance between assimilation and accommodation. This cognitive approach ensures the development of a child's efficient interaction with the environment (p. 19).

The constructivist theory influenced much of pedagogy that suggests learning is accomplished best using a hands-on approach, experimentation, and not being told what will happen. Thus, learners were left to make their own inferences, discoveries and conclusions. Learning is not an all or nothing process; instead students learned the new information that was presented to them by building upon knowledge that they already possessed (Constructivism, n.d.).

Even though research suggests that guided practice is effective in assisting students in constructive knowledge through active engagement, Kirchner, Sweller and

Clark (2006) stated these approaches are not effective unless the learner has prior knowledge in the learning process. In contrast, Mayer (2004) concluded that in order for a student to be a constructivist learner, the methods of instruction should be guided by the educator rather than unstructured exploration. All learners have the cognitive ability to problem solve and create mental images of new information when instructed adequately. Doing so supports the learner's ability to see the big idea (Wiggins & McTighe, 2005) and supports their enduring understanding of the concept being taught.

Rothstein (2004) suggested that educators pursue three tracks to narrow the achievement gap:

> The first track is school improvement efforts to raise the quality of instruction in elementary and secondary schools. The second track is expanding the definition of schooling to include crucial out-of-school hours in which families and communities now are sole influences. This means implementing comprehensive early childhood, after school, and summer programs. And the third track is social and economic policies that will enable children to attend school more equally and ready to learn. (p. 109)

School leaders must model a consistent sense of urgency towards the problem.

According to Haycock and Jerald (2002), "How principals talk about the issue will determine largely how school employees and community members respond to the issue" (p. 22). Haycock and Jerald's research reflects the belief that if there is hope of narrowing or eliminating the achievement gap, educators cannot continue to write off students. Educators must be encouraged to shift attitudes and beliefs so that the responsibility for educating all children becomes a norm.

Professional learning community (PLC). A PLC will provide opportunities for educators to collaborate and develop best practices to help meet the needs of students. Districts use PLCs to effectively assist educators in meeting the challenges of educational reform. The effectiveness of PLCs is dependent upon educators maintaining an intensive focus on student learning, aligning with state standards, and developing and implementing academic goals that will serve as a catalyst in measuring student outcomes. Williams (2003) concluded that "methods of instruction that appeared to work most successfully with poor ethnic and language minority students are those teaching strategies that focused on making meaning out of the content" (p. 104). Moll (1988) stated this is the opposite of decontextualized skills that are most often taught to these students. Knapp and Shields (1990) "challenged the notion that teacher-directed instruction of a skills-based and sequentially ordered curriculum developed students' analytic and conceptual skills and their ability to express themselves in writing" (as cited in Williams, 2003, p. 104). The failure to provide students with a larger meaning or purpose for learning affects urban school children. Strategies developed and used by educators in the implementation of PLCs should build upon the student's environment and rich cultural background to construct meaning of the instructional process.

Singham (2003) suggested that the teaching quality of effective educators could have a great impact towards students' academic success. He discovered that educator expectations are three times as important for educators in working with minority students. He outlines three components that effective educators will understand in their quest to narrow the achievement gap:

- Professional development. Educators should be continuously involved in ongoing professional development, rather than single-sessions or scattershot workshop style programs.
- Wait time. Teachers should learn to increase "wait time" in ways that would enable students to reflect more thoughtfully on questions.
- Active learning. Teachers should have a firm understanding of the content and the ability to create an environment that would support intrinsic motivation for students rather than extrinsic factors. (pp. 589 - 589)

Singham (2003) stated that the problem of solving the achievement gap will affect how educators interact in working with low achieving students. He believed that one's ability to distinguish the difference between reality and a myth will have an impact on solving the problem. He noted that such biases range from "standardized tests, tests that do not match the learning styles of low achieving students, less money spent in areas of low poverty and teacher biases carried into the classroom" (p. 586). Singham concluded that "we need to create awareness that the achievement gap is a symptom of more widespread educational problems" (p. 591). When educators utilize effective teaching strategies and interactions with all students, then those who are currently falling behind should benefit from such initiatives. The idea of PLCs further supports accountability, data collection, and working collaboratively to act upon the school's current realities. This will provide explicit feedback to educators on what students know and are able to do as a result of being involved in the professional learning community development.

Feedback can be very powerful if done well (Brookhart, 2008). Good feedback provides students information they need so they will understand where they are in their learning and what to do next. Brookhart found that good feedback contains information that a student could use, which means that a student is able to hear and understand it. Students cannot hear something that is beyond their comprehension; nor can they hear something if they are not listening or are feeling like it would be useless to listen. Because students' feelings of control and self-efficacy are involved, even well-intentioned feedback can be very destructive. Good feedback should be a part of a classroom assessment environment in which students see constructive criticism as a good thing and understand that learning does not occur without practice. Brookhart concluded that those educational theorists no longer explain learning with behaviorist theories about stimulus-response connections. By crafting powerful feedback through the use of PLCs, educators will be able to achieve higher levels of reflective dialogue that will impact a larger change in the educational setting.

Howard (as cited in Feinberg, 2004) determined that students in an urban setting will excel if the right perceptions are demonstrated by educators:

> Once you convey to children – whether consciously or not – that they are too "dumb" to learn, they will almost always prove you right. If students saw themselves improving through hard work – defying the sentence of "inferiority"– they would be more inclined to commit to their studies. (p. 2)

This understanding of collective efficacy through PLCs helps educators share perceptions or teaching strategies that will drastically enhance the organization (Marzano et al., 2005). Howard (2008) stated "We can dramatically increase the probability of success if

we understand that we're in this together, and learn to organize strong and lasting school/community partnerships for educating our children" (as cited in Howard, 2008, p. 2). The Efficacy Institute established a model to teach children how to develop themselves, and a framework to teach educators and other adults how to create and maintain environments to support the development of children. The tools are designed to build skills and enable each child and adult to be accountable for his or her potential growth.

- Make the necessary commitment to their own intellectual development and to the development of their peers and/or colleague;
- Learn the process of development and moderate risk-taking,
- Understand the obstacles to development, both internal and external, and to learn to manage them effectively. (The Efficacy Institute, n.d.)

Feinberg (2004) concurred with Ferguson (as cited in Feinberg, 2004) that natural difficulties with educators and students will be viewed in the learning process as feedback not failure. He (2004) confirmed that the most successful strategies to address students' individual needs will involve educators collaborating through lesson plans, problem-solving approaches, and class work. This requires educators to dialogue regularly in order to analyze results and determine new strategies for attaining proficiency. When educators as learners are involved in the analysis of data within school-based PLCs, there is a need to remain receptive to the use of ongoing assessments in a timely, authentic, and consistent manner. High-stakes testing narrows the educator's ability to transport their own knowledge and judgment as they prioritize the core standards for improved instruction, as they actively engage in the PLC process. Haycock,

Howard and Ackerman (as cited in Feinberg, 2004), support Ferguson (1998) who said that educators experiencing success in narrowing the racial achievement gap use myriad approaches. Educators and students discuss and plan academic goals using a common language, and analyze data that drives educational practices. The Efficacy Institute (2005) emphasized the psychology of learning as "the science of how people think and use their minds-plays a critical part in how we learn, and how much we learn" (p. 8). Research conducted revealed that "efficacy concepts and tools empower young and mature people to overcome the psychological obstacles to high achievement, and maximize learning opportunities throughout their lifetime" (The Efficacy Institute 2005, p. 8).

Blankstein (2004) contended that educators will know when they are experiencing success, which will be when they believe in the school's ability to intervene positively in a student's life and act on this information in a sustained, concerted, systematic manner. He recommended three major aspects that ensure success for all students through comprehensive systems and interactions. The first aspect requires looking at the school community's belief system regarding low-performing students. Blankstein established that leaders model alternative behaviors, demonstrate success, and forcefully challenge assumptions from educators that not all students learn. The second aspect involves an overachieving philosophy that unifies staff behavior. This aspect involves building a sense of self-efficacy among staff members by challenging them to do things they can do, while making change uncomfortable. Blankstein concluded that a motto be created which involves the community as mentors. The third aspect involves a comprehensive system

for assured success. He recommended a different approach to discipline by looking at the root cause for misbehavior and refocusing that behavior to create student success (2004).

Like Howard, in 1999 Dweck (as cited in McMillian, 2003, p. 31) proposed that "how much the students believe that intellectual ability is a fixed trait, relates to how much they believe that negative evaluations represent their ability" . Highly qualified educators will need to be skilled in the delivery of their craft in order for students to transfer academic knowledge. Highly qualified educators participating in PLCs are asked to establish norms or protocols to ensure positive conversations that will reveal current realities and perceptions. Dweck and her colleagues (as cited in Abd-El-Fattah, 2006) argued that the endorsement of specific theories of intelligence affects how information is processed. Researchers Chiu, Dweck, Tong, Fu, Erdley, Cain, Loomis, Dumas-Hines, and Dweck (as cited in Abd-El-Fattah, 2006), reported that entity theorists, persons who directly link goals associated with student performance in an evaluative and final form, are less likely to attend to new or contradictory information. Furthermore, entity theorists, use ineffective problem solving strategies compared to incremental theorists, persons who link learning benchmarks to student performance marked by feedback, when faced with difficult tasks. However, a large body of research by Dweck, Reppucci, Elliott, Dweck, Henderson, and Dweck (as cited in Abd-El-Fattah) inferred that incremental theorists believe that it is possible to improve intellectual abilities with the appropriate effort and support. Information processing for incremental theorists is therefore directed towards revealing aspects in their learning and ability. In addition, incremental theorists are more likely to choose challenging tasks, even when there is a possibility of failure. Dweck and Elliott (as cited in Abd-El-Fattah, 2006, p. 3), stated that "this was also valid

for persons with a low level of confidence in their intelligence." And so, struggling students need highly qualified educators who are life-long learners, involved in PLCs and remain optimistic about the intellectual ability of students.

Howard's (The Efficacy Institute, 1987) Operational Model for Managing Development and Dweck's (1999), Incremental and Entity Theory concurred on the theories of intelligence that structure children's goal orientation and their responses to academic difficulty. The entity theory is directly linked to performance goals. It is based on measuring, testing the student on his or her performance. The judgment is final and makes performance high-stakes testing. An example of this is standardized testing in its many formats. Intelligence is a fixed entity which a student either has or does not have. Consequently, each achievement situation represents a test of the child's ability. If the student does well, it proves he or she is smart; if the student does poorly, it proves that he or she is not smart. Students with performance goals are concerned with proving themselves. The student feels heavy pressure to perform well so that his or her intelligence will be confirmed. Since the goal for these students is to perform well to confirm their abilities, failure represents a proof of one's deficiencies or lack of ability, due to the student's low efficacy. The incremental theory provides goals which are learning benchmarks on the road to student performance. These learning goals are marked by feedback designed to improve the student's performance prior to a test of performance. Educators' engagement in PLCs shapes their dialogue about their thinking that all students can learn, which offsets their perceptions and attitudes that students cannot learn based upon a fixed learning capacity. Educators examine student

performance goals with a critical eye, looking for disconnects between the students level of performance and the educators instructional delivery.

Educators who demonstrate the incremental theory of intelligence believe that intelligence is built up incrementally through effort, and dynamic, not fixed, learning goals in academic situations. Academic situations are not designed to prove anything, but are viewed as learning situations, opportunities to increase one's intelligence. The incremental theory corresponds precisely with the adage think you can: work hard, get smart. When faced with difficulty, learning goals facilitate and performance goals debilitate (The Efficacy Institute, 1987).

Studies will provide evidence for different conclusions for discussion that might demonstrate how effective schools will make a substantial difference in the achievement of students (Marzano, 2007). Marzano (2007) stated that in the last decade of the 20th century the picture of effective schools became much clearer. The single most influential component of an effective school is the individual educators within the school, who rank higher than a well-articulated curriculum and a safe and orderly environment. Students' academic progress flourishes because of having educators who are well prepared in their craft. To restate, PLCs provide opportunities for educators to collaborate on best teaching strategies and provide additional time and support to help all learners.

Educator Attitudes

When educators examine their own attitudes, they are challenged by their self-perceptions as people and are compelled to change (Mai & Holmes, 2006). Barth (as cited in Blankstein, 2004) found that "the relationship among adults in the schoolhouse has more impact on the quality and the character of the schoolhouse—and on the

accomplishments of youngsters—than any other factor," p. 58). Howard (2003) determined that the goals for students are to develop their talents to the fullest. Doing so, requires all students to work to the limits of their capabilities. Schools must have educators that will (a) set high standards rather than minimal ones, and (b) parents to support and encourage children to make the most of their talents and abilities (as cited in Howard, 2003). Singleton and Linton (2006) affirmed that "closing the teaching and learning gap requires that teachers think about their craft differently" (p. xvii). According to Howard (2003), educators' attitudes should demand the best effort and performance from all students, whether they are gifted or less able, affluent or disadvantaged, whether destined for college, the farm, or industry.

Howard (2003) found that

> most educators, along with other Americans, have been socialized to believe that intelligence is innate, fixed at birth and unequally distributed: "Some have it and some don't." Most compassionate educators believe that all children can learn up to the level of their abilities. (pp. 83–84)

This disbelief in students' capacities absolved educators (and parents) from the responsibility and accountability for educating them to higher standards, thus creating a sense of helplessness and futility among adults that easily transfers to students. Moore (2008) conducted a study on attitudes and beliefs on classroom control, which determined that a relationship between educators' beliefs and attitudes about their teaching abilities and their actual teaching practices was nominal. The study revealed that educators with the best classroom-management practices have higher student achievement scores than

educators with weaker classroom-management practices, and they possess an attitude of and belief in academic accomplishment.

Educators' attitudes toward culture-related identities and their manifestations in the classroom are especially relevant to academic achievement (Mathews, 2000). Underserved students are excluded from full participation in our society primarily based on race and color, which includes African Americans, Asian, Hispanic, American Indian, and multiracial (Inver Hills Community College, 2008). The basis of underserved students' chances of school achievement increases when they experience education with educators who understand them. When the standards and expectations for all students are at a high rate, the students achieve. The problem lies with educators' misunderstandings of and reactions to students' culturally conditional behaviors, which ultimately leads to failure. D'Amico (2001) believed that self-confidence comes from success. Therefore, it makes perfect sense that telling a group of people repeatedly that they are not as smart or have not achieved as well as another race, is detrimental to the group's ability to achieve academic success.

The most important component of an educational support system in the classroom is the educator and the attitude he or she brings to the learning environment (D'Amico, 2001). Singham (2003) believed that if the educator is not competent or does not have high expectations, students will have a hard time improving. Not only do educators need to have a dedication to high expectations, they must have a dedication to their own development. Reeves (2004) found the difference between effective educators and less effective educators is the way they search for new and better ways of interacting with the curriculum and examining best teaching practices. Through this process of adjustment,

effective educators recalibrate their attitudes and change their instructional practices to meet the needs of all learners.

Blink (2007) reported that "teachers should be analyzing the student learning data they have and determining from that what types of professional learning they need to improve instruction in their classroom, which will eventually improve student achievement levels" (p. 5). She continued that educators need to understand the data, making it their own, and doing something with it in order to see the value of using data to mold and drive instruction. When this occurs, educators understand the purpose behind initiatives that achieve those *aha* moments when everything makes sense. Blink determined that viewing assessments in a different light may be difficult for some educators. All assessments fall into one of two general categories: assessments for learning and assessments of learning (Rebecca DuFour, DuFour, & Eaker, 2008). Stiggins (2007) identified assessment of learning based on results of state and local standardized assessments and college entrance examinations. Assessments for learning occur while learning is taking place. In short, assessments of learning measure many things infrequently, whereas assessments for learning measure a few things frequently.

Educational reform depends not only on having highly qualified educators with positive attitudes, but effective administrative support in using best practices and being accountable for mobilizing all stakeholders. Haberman (2004) stated that "the pursuit of learning is not a piece of content that can be taught. It is a value that teachers model. Only teachers who are avid, internally motivated learners can truly teach their students the joy of learning" (p. 52). Educators who model positive behavior and are lifelong learners exhibit qualities that are transferred to their students. Roberts and Pruitt (2003)

determined that "if students, teachers, and other members of a school community are to fully profit from their learning activities, promoting understanding must become a shared endeavor in their workday lives" (p.42).

Haberman (2004) defined a "star educator" as an educator who is effective in adverse conditions of working in a failing school or school district and is not prevented from being a successful educator despite the circumstances. Haberman described the following attributes of a learning community: modeling, continual sharing of ideas, collaboration, egalitarianism, high productivity, community, and practical application.

Modeling – Guiding student learning and development, educators applying the same principles that guided their own learning and development.

Continual sharing of ideas – Educators share ideas daily regarding vital issues of equity, instruction, curriculum, testing, school organization, and the value of specific kinds of knowledge.

Collaboration – Educators become involved in team teaching and other collaborative efforts in program development, writing, and research.

Egalitarianism – Educators dispense with formalities. Anyone who takes an interest can vote in a department meeting, especially students. The quality of ideas is more important than their source.

High productivity – Educators continually increase their workloads. No matter how high the output, they continually pressure themselves to create new programs, develop new courses, publish books and articles, and produce more research.

Community – Faculty members value community more than promotion. Finding a more stimulating learning community becomes the criterion that guides the movement of faculty to various institutions.

Practical applications – Educators ask themselves, "How does what we are doing help students, teachers, and schools? What did we do this week to help?" (pp. 52–53).

Reeves (2004) outlined four educator leadership accountabilities:

- *Observation*. Accountable teachers know the extent to which their intended practice matches their actual performance.
- *Reflection*. An inherently collaborative activity which requires the active participation of students and colleagues as co-conspirators in the relentless effort to improve teaching and learning.
- *Synthesis.* A hallmark of educational and holistic accountability. It is the formulation of many theories, predictions, and hypotheses that can be subjected to additional rigorous inquiry.
- *Replication*. The effective practice that educators use through rigorous observation and analytical synthesis. (pp. 50–55)

Haberman (2004) and Reeves (2004) agreed that educator attitudes and accountability have a direct connection to the difference between an effective and ineffective educator. Haberman referred to educator accountability as it relates to PLCs, whereas Reeves defined successful teaching behaviors in the learning process.

When all educators in all schools are working at their best performance level, displaying a learner's attitude and utilizing effective instructional strategies, then all subgroups are able to achieve academically. MacIver and Balfanz found that achievement

gaps occur for numerous and complex reasons. Factors outside and within the school's control are strongly correlated with the academic success of student achievement (as cited in Goodwin, 2000). In an interview Haycock stated, "But, in the end, the most central ingredient is teachers who really know their stuff and have a wide range of strategies to reach all kinds of learners" (Holland, 2007, p. 57). Goodwin (2000) cited six main areas of concerns for educators to close the achievement gap:

- *Weak or inappropriate curricula* – Students experiencing academic difficulties are not expected to achieve at high academic levels of expectancy and they do not. Elementary and secondary levels tend to provide students with less rigorous curricula and often down play the importance of obtaining a college education to minority students. A self-fulfilling prophecy of helplessness is perpetuated in the school curricula/environment for marginalized students.
- *Ineffective instruction* – Marginalized students are more likely to miss rich academic opportunities because of being placed in classrooms with less experienced or less motivated teachers. Teachers have more incentives and seem to work effectively academically to advance students in the areas of both content and language when given high performing schools and students.
- *Disengaging classroom discourse* – Teachers have a profound impact on the way classroom management affects student achievement. Marginalized students tend to be less engaged in the classroom discussions due to the teacher's unawareness about their student's

culture, teacher biases and assumptions concerning the student's interests or academic ability. Teachers need to allow more time for students to process and formulate content information.

- *Poor student self-concept* – Students' self-confidence is linked with academic achievement. Students that have been unable to connect their academic success and efforts display a sense of learned helplessness. This vicious cycle creates low achievers who believe that failure is attributed to a lack of ability and external factors. Students stop trying due to disconnect and internalization of low expectancy, and more failures occur.
- *Unsuccessful adjustment to school culture* – Many low-achieving students seem to fail academically because of a culture shock when entering the school environment. A student's culture and background experiences may prohibit the student from effectively making academic connections regarding their critical thinking skills, analyzing, and expressing opposing points of view. Students at risk may also under perform because of the lack of parental understanding and appreciation for academic opportunities such as college entrance examinations, extracurricular learning opportunities, and advance placement courses.
- *Prejudice* – Stereotype threats, forms of prejudice, and racism may hamper the success of low-achieving students. The fear of teachers viewing a student's academic ability through the lens of stereotypes creates situations in a classroom and school environment of deprived

> learning opportunities. Students who may adopt this disposition of protective apathy may finally disengage from learning opportunities that perpetuate the circumstances of prejudice in the school environment. (pp. 2–3)

By incorporating learning communities (Haberman, 2004) and educator leadership accountability (Reeves, 2004) in the learning environment, educators are more likely to narrow the achievement gap (Goodwin, 2000).

According to Gay (n.d.), educators need to be sufficiently schooled in their students' cultures and perspectives (as cited in Goodwin, 2000). Goodwin also recommended that educators need to help students believe they have the ability to succeed and can maximize their ability through effort. Marzano (as cited in Goodwin, 2000) examined 10 studies for the effects of educators instilling a belief that "if they try, they can succeed." Marzano found that using such confidence-building techniques boosted student performance by as much as 29 percentile points (p. 3). Nelson-Barber stated, "But even effective, seasoned teachers need to be aware that the techniques that work well with non-minority students may not work as well with students of color" (as cited in Goodwin, 2000, p. 2). As Gay (n.d.) pointed out, there are no single solutions that will work for all educators and all students. Gay recommended that all schools and educators will develop their own solutions and methods for addressing cultural diversity in their classrooms (as cited in Goodwin, 2000). August and Pease-Alvarez acknowledged that when teaching diverse student populations a common feature emerged when educators worked together to identify and adapt their own strategies for improving achievement (as cited in Goodwin, 2000). On the other hand, Talley stated that research-

based reform models recognized that educators need classroom-based assistance from experienced trainers before they will embrace and adopt new strategies (as cited in Goodwin, 2000).

The existence of the achievement gap is an urgent problem in need of a solution. Snell (2003) found that getting educators to collectively take responsibility for addressing the problem or at least attempting to lessen the achievement gap is difficult. Snell argued that there are three key steps for educators to acknowledge and accept before addressing educational inequities:

- School educators should first commit themselves to engaging in deep inquiry about the nature of the problem and its root causes. (p. 2)
- Next, school educators should accept responsibility for closing the achievement gap by crafting a set of deliberate action-strategies that focus on the dismantling of inequitable schooling practices and school-wide improvement of instruction. (p. 3)
- Finally, school educators should accept responsibility for closing the achievement gap through modeling a consistent sense of urgency and agency towards the problem. (p. 4)

Snell (2003) believed that creating a school environment where good teaching is fostered and made available to all students can assist in beginning to narrow or close the achievement gap. Snell stated that school leaders will have a pivotal role to play in creating a school environment where good teaching is fostered and the necessary resources are provided for teachers to achieve this goal. She also determined that educators cannot continue to write off a percentage of our students. She stated that there

will be a "shift in our attitudes and beliefs so that we would become willing to accept responsibility for educating every child on our roster in our schools" (p. 4). Snell concluded by saying educators that work with poor and minority children will work diligently to improve the learning environment. School transformation cannot be controlled outside of the school day due to the condition of children's lives outside of school. Snell stated that "it is an adherence to this belief system, engendered by the inquiry, strategic-action, and modeling of school leaders, that I deem the best hope for our underachieving students lives" (p. 5). Briefly in summation, a change in educators' attitudes about closing the achievement can be accomplished through challenging one's perceptions about how support systems will maintain high accountability for all subgroups.

Lesson Design

The No Child Left Behind Act outlined many reforms for elementary and secondary education, which put particular emphasis on alignment of instructional materials and academic assessments with state academic standards (Hendrickson, 2006). Hendrickson contended that in inquiry-based learning, students acquire knowledge by either seeing answers to their own questions or questions posed by the educator through student-directed investigations. Marzano determined that a student's chances of academic success depend on the effectiveness of a school's operation. Marzano found that "students in effective schools as opposed to ineffective schools had a 44 percent difference in their expected passing rate on a test that had a typical passing rate of 50 percent" (as cited in Marzano, Waters & McNulty, 2005, p. 3). Hence, given this

information, the way educators design a lesson for student success is explored throughout the literature review.

Darling-Hammond (2006) wrote of the importance of educators working with students, remaining on the cutting edge of their profession, and possessing an array of instructional strategies that will assist in meeting the needs of all subgroups:

> Studies have consistently found that with little knowledge of learning or child development to guide them, teachers who lack preparation rely more on rote methods of learning; are more autocratic in the ways they manage their classrooms; are less skilled at managing complex forms of instruction aimed at deeper understanding; are less capable of identifying children's learning styles and needs; and are less likely to see it as their job to do so, blaming students when their teaching is not successful. (pp. 16–17)

Zemelman, Daniels, and Hyde (2005) noted that models of education are interrelated into three principles of best teaching practices for student success:

> *Student-centered* – Building on natural curiosity students brought to school.
>
> *Cognitive* – Students developed understanding of concepts through higher order thinking skills linked with methods of inquiry and self-monitoring of one's thinking.
>
> *Social* – Educators created classroom interactions that scaffold learning.
>
> (pp. 10–12)

School leaders need to create job requirements that make learning about learning mandatory, rather than focusing exclusively on PLCs as described by Richard DuFour (2006). Wiggins and McTighe (2005) and Richard DeFour (2006) claimed that for

educators to hold themselves accountable for the learning principles, they should own them at a deep level for significant reform to occur and for schools to truly become learning organizations. Without explicit learning principles, there will be endless debates about the need to assess teaching practices for student learning.

Tomlinson and McTighe (2006) discussed the following two approaches to curriculum and teaching:

> Understanding by Design and Differentiated Instruction are currently the subjects of many educational conversations across the world. Part of the reason for the high level of interest in the two approaches to curriculum and teaching is in their logical and practical appeal. (p. 1)

Tomlinson and McTighe stated "Effective classroom teachers attend to at least four elements to gain student success: whom they teach (students), where they teach (learning environment), what they teach (content), and how they teach (instruction)" (p. 2). Understanding by design is predominately a curriculum design model that focuses on the "what" and "how." Differentiated instruction is predominately an instructional design model that focuses on processes and procedures that ensure effective learning (Tomlinson & McTighe).

McTighe and Thomas (2003) wrote that "for backward design to work, educators need to identify desired results, analyze multiple sources of data, and determine appropriate action plans" (p. 52). In teaching students for understanding, educators must grasp three key stages:

- *Stage 1*: Identify desired results. Educators will consider their goals, examine established content standards (national, state, district), and

review curriculum expectations. In addition to goals, designers should specify essential questions which highlight the big ideas that are central to the design of the lesson. McTighe and Thomas (2003) noted that by asking for essential questions the designer is called upon to commit to genuine inquiry—the discussion, reflection, problem solving, research, and debate that are the keys to developing a deep understanding of essential ideas.

- *Stage 2*: Determine acceptable evidence. Encourage educators and curriculum planners to think like an assessor. Educators will assess a student's understanding of important ideas and ask students to apply their learning to a new situation and explain their responses rather than just making a selection from a list of given alternatives. Educators will consider the assessment evidence implied by the outcomes sought, rather than thinking about the assessment primarily as a means for generating grades.
- *Stage 3*: Plan for learning experiences and instruction. Students need to know enabling knowledge (facts, concepts, principles) and skills (processes, procedures, strategies) in order to perform effectively and achieve desired results (Wiggins & McTighe, 2005). "The goal was to make teaching engaging and effective for learners, while always keeping the end in mind" (Tomlinson & McTighe, 2006, p. 28). Wiggins and McTighe stated that "building feedback and opportunity to use it was a good learning plan" (p. 192).

Wiggins and McTighe (2005) found that too many educators focus on the teaching and not on learning. Consequently, educators focus on what they need to do next as opposed to considering what the learner would need in order to accomplish the learning goal. Rebecca DuFour, DuFour, Eaker, and Karhanek (2004) discovered that "if a school was truly committed to ensuring that every child mastered the intended outcomes of the core curriculum, it would be vigilant in its effort to assess each student's learning on a timely, ongoing basis" (p. 23). Student success, as described by Marzano (2003), is defined by three different levels of curriculum. "The first is the intended curriculum – what we intend for each student to learn. The second is the implemented curriculum – what is actually taught. The third is the attained curriculum – what students actually learn" (Rebecca DuFour et al., 2004, p. 24).

In order for educators to accomplish the learning goals, unit planning should entail three phases: "(a) strategies for setting goals; (b) strategies for monitoring student progress, introduction of new knowledge, and time for practicing, reviewing and applying knowledge; and (c) strategies for helping students achieve desired goals of the unit" (Marzano, Pickering, & Pollock, 2001, p. 146). Marzano (2007) stated, "Viewing teaching as part art and part science is not a new concept" (p. 5). Marzano (2007) outlined three ways to approach content in a given lesson: critical input lessons, knowledge practice and deepening lessons, and hypothesis generation and testing lessons.

- Critical input lessons
    - New content learning is presented in an exciting way that involved students active participation during instruction using a variety of mediums (for example, lecture, demonstration, video)

  - Teacher engaged students in activities that previewed the new content
  - New content should require students to infer and elaborate on the content by defending their answers when academically challenged
- Knowledge practice and deepening lessons
  - Teacher engaged students in a brief review of the content connecting prior learning to current learning
  - Students reviewed and revised notes taken on new content
  - Students deepened their understanding through homework practice which assisted in movement toward academic fluency
- Hypothesis generation and testing lessons
  - Students worked individually or in cooperative-type groups testing their hypotheses generated and revisiting solutions
  - Teacher assumed the role of resource provider and facilitator. (p. 190)

Educators are equipped to teach the curriculum and help children from fostering a concept of learned helplessness. Students will feel a sense of efficacy rather than having a feeling of opportunity blindness. Tomlinson and Jarvis (2006) found that building effective relationships with students will improve the learning process:

> Good teaching is inevitably the fine art of connecting content and kids—of doing what it takes to adapt how we teach so that what we teach takes hold in the lives and minds of students. The principles that follow reflect the power of teaching to

> student strengths; Teachers who see the strengths in students teach positively; Teaching to student strengths helps students see themselves positively; Teaching to student strengths helps students see strengths in one another; Teaching to student strengths helps students see learning positively; and Teaching to student strengths helps students overcome weaknesses. (pp. 16–21)

Rebecca DuFour et al. (2004) determined that educators will need to reflect upon current educational practices for students to master skills necessary for learning:

> Test scores would take care of themselves if educators were committed to ensuring that each student mastered essential skills and concepts in every unit of instruction, aligned their practices and resources toward that purpose, and discontinued many traditional practices that do not serve that purpose. (p. 27)

To this end, lesson design is pivotal to the trajectory of a student's academic success. Through educators' understanding of how to design effective lessons, with the end in mind, student outcomes will change.

Student Understanding

Jean Piaget maintained a child's interactions with his or her environment creates learning, which is slightly different from other researchers of his time who thought learning was intrinsic (coming from the child) or extrinsic (imposed by the environment, or taught by adults). Piaget claimed that children constructed knowledge by providing meaning to people, places, and things in their world. He pointed out that lack of explanation from adults may impede children's opportunity to learn best when actually engaging in the learning process. Dewey concurred with Piaget that in order for a child to learn, his or her curiosity will be fully satisfied. Furthermore, Mooney (2000) found that

"using Piaget's theory about children's learning requires changing the image of *teacher* into someone who nurtures inquiry and supports the child's own search for answers" (p. 62). And so, this section will elaborate on the essential question of how educators know students truly understand what is being taught.

John Dewey's (1903) total approach to education was in terms of processes rather than static states, which involve the promotion of reflective behavior, growth, and health. His approach views education as a means to an end. According to Dewey, in *Ethical Principles Underlying Education: John Dewey on Education: Selected Writings (*1903), "Education must provide for the development of the individual and for his participation in society" (p. xxi). He views education as being liberating and in need of freedom and discipline. He determined that an adult can help students create new rules and become reasonably self-sufficient. Therefore, the desire of the student to change will be nurtured, modified, and directed. He identified four conscious, meaningful, and informed activities that are essential components to his educational theory: (a) the activity, (b) the educator or responsible party, (c) the pupil, and (d) curriculum and method of achievement. He saw the educator as being the primary guide in helping a student to achieve his or her purpose. Dewey stated "The teacher should be a catalytic agent who, by providing materials, clues, information, suggestions, and clarifications – could create a setting that would be conducive to learning. Instruction should be centered on the live, meaningful, and important problem to be grappled with and solved" (p. xxiv-xxv). Educators' relationships with their students will be reciprocal. He stated that there will be reciprocity between the pupil and the educator in his or her development of effective relationships that will allow them to learn from each other. The educator will stimulate, guide, and

serve as a catalyst in helping the student make connections using his or her own ideas (Dewey, 1903).

Dewey believed that children's lives and learning are enriched through intercultural contact with others. The breakdown of such barriers was viewed through Dewey's eyes as opportunities for growth through physical barriers that isolated nations, races, and ethnic groups (Tanner, 1997). Dewey's philosophy still echoes in educational reform today. He stated that old and traditional education will go beyond the fixed and rigid environment of just subject matter and activities. In other words, educators will heighten their attention regarding subject matter and move towards more effective instructional techniques (Dewey, 1964a). In *John Dewey on Education* (1964b), he discussed methods of cultivating attitudes that will promote inquiry and the measurement of the learners' knowledge. Dewey addressed the following three attitudes:

(a) *Open-mindedness.* This attitude involves an active desire to listen to an array of dispositions and pay attention to alternative possibilities and the willingness to consider new problems and entertain new ideas, all without prejudice and partisanship.

(b) *Whole-heartedness*. As a result of whole-heartedness the child will be absorbed in the learning process. This process fosters the learner to generate questions spontaneously, further his or her inquiries, make suggestions, and arouse an enthusiasm about the social and intellectual development of learning.

(c) *Responsibility.* The final attitude represents a moral (personal) characteristic that needs to be cultivated. The learners' experiences will

> need to align with their understanding of what is learned in the reality of life. When the subject-matter and activities are disconnected from their moral experiences, children are unable to activate their curiosity or prior knowledge in order to make meaning of what they have learned (Dewey, 1964b).

As a progressive educator, Dewey shared in common with Vygotsky and Piaget the belief that education is active and interactive, will be child centered, and involves the child's culture and community. According to Mooney (2000), "Dewey thought it was important for teachers to observe children and to determine from these observations what kinds of experiences the children are interested in and ready for" (p. 6). It was concluded that thoughtful educators will determine the curriculum based on the knowledge of the students and their abilities. Dewey stated that educators will invest in planning, organized learning activities, guidance coming from a thoughtful educator, and develop curriculum based on a child's ability.

Dewey's (1964a) philosophy of education outlined in the P*rinciples of Pedagogy* served as a springboard for his most provocative ideas. "True education comes through the stimulation of the child's powers by the demands of the social situations in which he finds himself" (p. 427). Students who emerge from their narrowness of actions and feelings adapt to an environment that forces conformity. "The child's own instinct and powers furnish the material and give the starting point for all education" (p. 428). Dewey believed that educators will consider each child's psychological and social needs in designing a lesson. Without these considerations the educational process will therefore be haphazard and arbitrary. "Education, therefore, is a process of living and not preparation

for future living" (p. 430). Dewey assumed that education does not occur through forms of life. He believed that a student's existence in a complex world cannot maintain a power of an array of activities. Dewey believed the school and home life is closely interconnected and supports socialization to life.

> The school life should grow gradually out of the home life order without the guidance of the teacher providing structure for working through and that it should take up and continue the activities with which the child is already familiar in the home. (p. 431)

Dewey claimed that the social life of a student is nurtured and connected to the home. He stated that the school is responsible for extending and deepening the values of the student's home life. "The teacher is engaged, not simply in the training of individuals, but in the formation of a proper social life" (Dewey, p. 439). Dewey concluded that a student's social progress and reform in society happens from becoming educated. A child's social consciousness and adjustments of individual activities is regulated by the educational environment. (Dewey, 1964).

According to Mooney (2000), Lev Vygotsky has changed the way educators think about students' interactions with educators and peers in advancing their knowledge. Vygotsky's work showed that social (Dewey) and cognitive development (Piaget) worked together and built upon each other. Although Vygotsky concurred with the theorists, he inferred that personal and social experiences cannot be separated. Vygotsky (1926) stated that a change in one's actions is preceded by some inducing cause, which results in an internal or external desire to react to a particular action (Vygotsky, 1926). This led educators and schools to create an environment where students are able to

achieve complexity, adversity, and have the flexibility to function in a social environment without reducing everyone to the same level of expectations. From this point of view, Vygotsky determined that one's relationship with children must bear the character of purposefulness of activity that is guided and not simple dependence.

Vygotsky's theory on the zone of proximal development helps educators support students to accomplish difficult tasks through efforts of scaffolding. The ZOD is a process whereby the student is making steady progress in learning and understanding due to attributing his or her success to his or her own efforts. The educator maintains the student in the ZOD through design of curriculum which provides activities with ongoing assessment that enables the student to continue progressing academically. Vygotsky "believed that a child on the edge of learning a new concept can benefit from the interaction with a teacher or a classmate" (as cited in Mooney, 2000, p. 83).

Vygotsky agreed with Dewey and Piaget that personal and social experiences cannot be separated but are stimulated by all interactions in a child's life:

> In order to scaffold well for children, teachers need to be keen observers. He believed that teachers need to use those observations to determine where children are in a learning process and where they are capable of going; given their individual needs and the social context that surrounds them. (Mooney, p. 84)

Vygotsky advocated that educators supporting students' learning will have a greater knowledge of the world so they are able to assist students in making sense of their environment (as cited in Mooney, 2000). "Teachers who want to apply Vygotsky's ideas can observe children and plan curriculum that encourages children's emerging abilities and pair up children who can learn from each other" (p. 84).

Vygotsky (1926) supported the rich experiences that students own and interact with in their environment. From these experiences students are able to make connections for problem-solving in complex situations:

> The child's social environment and all of the child's behavior must be so organized that every day brings with it ever [*sic*] newer connections and unforeseen examples of behavior for which there would not be any pre-set habits or ready answers in the child's store of experience with which he could respond, but which would instead forever require on his part ever [*sic*] newer connections between thoughts. (pp. 174–175)

In contrast, Piaget's research indicated students' cognitive development passes through four stages. These stages are (1) sensorimotor (birth to 18 months) where children learn through their senses; (2) preoperational (18 months to 6 years) in which children develop ideas based upon their experiences; (3) concrete operational (6 years to 12 years) where children learn to reason based upon their ability to link know information to unknown information; (4) formal operational stage (12 years and older) in which children are able to think conceptually and hypothetically (Mooney, 2000, p. 64).

Tomlinson and McTighe (2006) stated that when an educator is clear about the enduring understanding of a lesson or unit, the educator will be more at ease in offering students options to discover and transfer learning. According to Wiggins and McTighe (2005), understanding is making sense of many pieces of knowledge and abstractions made by the human mind. This entails developing a mental construct of meaningful information using both internal and external knowledge of one's environment. Therefore, students know how to apply and transfer concepts. They found that student understanding

will involve explaining *why* a particular skill, approach, or body of knowledge is or is not appropriate in a particular learning setting. Students will be able to draw upon their repertoire of skills and knowledge to solve problems (2005). Dewey (1903) elaborated on the distinction between knowledge versus understanding. His distinctions help educators assist students in meeting the challenges of cognitive thinking. Students use an array of strategies to draw upon a repertoire of skills and knowledge that enhance meaningful outcomes. The basis of Dewey's theory relies on a students ability to move from simply knowing information to understanding that information. According to Wiggins and McTighe (2005), a student's ability to effectively transfer information is essential to making relevant connections to other scenarios:

> Understanding is about transfer, in other words. To be truly able requires the ability to transfer what we have learned to new and sometimes confusing settings. The ability to transfer our knowledge and skill effectively involves the capacity to take what we know and use it creatively, flexibly, fluently, in different settings or problems, on our own. Transferability is not mere plugging in of previously learned knowledge and skill. (p. 40)

When educators teach the curriculum and check for student understanding, as opposed to memorization, transfer of knowledge is more likely to occur. Students begin to test the when, where, why and how to use new knowledge in creative and flexible ways (Wiggins & McTighe, 2005). Davies (2001) defined successful communication as follows:

- Students take a lead role. Students present evidence of their learning by asking for and receiving feedback from an audience.

- Work samples or demonstrations show proof of learning. When students learn, self-assess, and later when ready show their learning and receive descriptive feedback, they develop skills and habits of self-directed, independent, lifelong learners.
- Students invite an audience to participate in the process. Students present completed projects and portfolios for others to critique and show evidence of their strengths, learning needs, and goals.
- Audiences take active roles and give specific feedback to learners. Students gain feedback from someone who is interested in their learning and whose opinion the student values. The possible audience could include parents, other family members, neighbors, students in another class, or other teachers, community members, future employers or experts in a field. (pp. 48–50)

Schools committed to the concept of learning will no longer subject struggling students to an educational lottery program. Educators will ensure students' mastery of essential skills and concepts, curriculum alignment of resources, and discontinue traditional practices that serve no purpose (Rebecca DuFour et al., 2004). Richard DuFour and Eaker (1998) summarized the research provided by the Northwest Regional Educational Laboratory that offered a summary of six classroom characteristics and practices associated with improvements in student performance. Students' ability to actively engage in the curriculum depends on an array of variables. These six classroom characteristics depend on students having an effective educator who will help promote student understanding and utilize tools to assist students in their learning. It is important

that educators not only possess the resources at their fingertips, but are able to know how and when to use them in order to meet student needs.

1. Instruction is guided by a preplanned curriculum. Learning goals and objectives are developed, prioritized, and timelines set based upon learning objectives aligned to district and state goals. Instructional planning, resources and activities are matched to the developmental level of the students. Adaptations and modifications are reviewed when necessary that will foster effective student achievement.
2. Students are carefully oriented to lessons. Teachers' help students prepare for the learning environment. Lesson objectives are posted and thoroughly explained in simple language for student success and direction. Prior learning is bridged with current learning that affords or challenges the students to extend and understand key concepts.
3. Instruction is clear and focused. Lesson activities are previewed and developed based upon the end results in mind. Instructional delivery (such as, presentations, lectures or demonstrations) should challenge and engage student involvement. Opportunities for effective feedback should bring about positive communication and drive the educators' instruction.
4. Learning progress is monitored closely and re-taught for understanding. Educators' instructional activity should be monitored formally and informally. Ongoing classroom assessment of student performance should be valid and relevant to learning outcomes. Immediate and effective teacher feedback is essential to student academic understanding and

mastery of concepts. Descriptive feedback will allow the teacher to focus on the concepts and skills that need to be re-taught and strengthen student retention.

5. Class time is used for learning that allows for smooth, efficient classroom routines. Pertinent learning activities are designed to maintain and achieve learner outcomes rather than non-learning activities. Students are able to maximize time on task due to careful pacing of the instructional process by the educator. Organized classroom routines are consistent and match instructional plans and student needs.
6. Standards for classroom behavior are explicit. Teachers establish high standards for behavior in the classroom by communicating parameters and procedures for appropriate student behavior. Educators teach strategies and techniques for students to act responsibly in the learning environment, thereby correcting disruptive behavior in a constructive, consistent, and timely manner. (pp. 222–225)

Marzano (2007) stated that "throughout a well-structured unit teachers are continually providing input to students regarding new content" (p. 29). He further indicated that in order to increase a student's understanding of the content, educators will help students actively process the new knowledge. Students' understanding as indicated by Marzano's action steps will help to improve the teaching-learning process (Marzano, 2007*).* Educators provide students with content that is well structured and critical to student learning. Critical input experiences require adequate time to ensure students truly understand what is being taught and are able to process and comprehend the content.

Educators preview information that will be addressed in order to assist students in activating prior knowledge. Content will be previewed prior to the critical input experience that should allow the child to make connections to new concepts. Educators will organize student groups for the sake of facilitating understanding of new concepts. Students will actively process and practice information through the use of examples provided by the educator.

Marzano (2007) found that educators will identify chunks within the critical input experience and include strategic stopping points during the demonstration. Educators will facilitate discussions that enable the student to make predictions to check for understanding. The educator will require students to elaborate on the information and to organize it into elaborative interrogations, in which students have the opportunity to discuss the why in their thinking and general inferential questions, which requires students to use their background knowledge to enhance understanding of the new concept or new knowledge. Finally, educators will provide opportunities for students to connect with new knowledge in linguistic and nonlinguistic modalities.

According to Good and Brophy (2003), it is important that educators help students focus on the big ideas consistently in their efforts to problem solve:

> The notion of teaching for understanding implies helping students construct connected networks of knowledge by relating new content to existing knowledge in ways that allow them to appreciate the connections and to access the knowledge for use in appropriate application situations. Teachers who teach for understanding and higher-order applications of subject-matter content both (1) limit what they try to teach by focusing on what they see as most important and

> omitting or skimming over the rest, and (2) structure what they do teach around important ideas and elaborate it considerably beyond what is in the text. (pp. 420-421)

They found that educators must provide structure and scaffolding in the learning environment that will assist the students in developing their academic expertise. Good and Brophy concur with Vygotsky that educators should provide an effective classroom structure that will scaffold the student in order to foster conceptual understandings of knowledge and become self-regulated in learning. To restate, it is important that educators be well versed about a student's social and cognitive development in order to scaffold, support, and have the ability to transfer learning for understanding.

Understanding by Doing

According to Wiggins and McTighe (2005), "Teaching is a means to an end. Having a clear goal helps to focus our planning and guide purposeful action toward the intended results" (p. 19). backward design calls for educators to make goals or standards specific and concrete in terms of assessment evidence, as educators begin to plan each lesson, unit, or course. Fisher and Frey (2007) concurred with Wiggins and McTighe (2005) that checking for student understanding in the classroom influences the educator's ability to select appropriate materials and opportunities for teaching and learning outcomes, such as tossing a coin. Fisher and Frey concluded that "when teachers regularly check for understanding, students become increasingly aware of how to monitor their own understanding" (p. 3). Bloom and Broder (1950) found that "successful students use numerous avenues to expand and transfer their knowledge, and understand materials" (as cited in Fisher & Frey, 2007, p. 3). Because of this, it is necessary to

examine how educators will determine what a child must be able to do as a result of each lesson in this essential question.

Wiggins and McTighe (1998) offered an additional tool for thinking about how educators check for understanding. Their framework establishes a curricular priority that focuses on prioritizing curriculum for teaching essential knowledge. This tool teaches educators to enhance their students' academic environment by utilizing prior knowledge. Thus, students' background knowledge allows them to benefit from learning opportunities that the educator shared and provided through well-designed lessons. They found that "checking for understanding is an important step in the teaching process" (p. 2). This type of understanding allows the educator to check regularly for understanding, promote good study skills, and increase students' ability to monitor their own learning.

Content learning versus enduring understanding provides an opportunity for educators to evoke transferability from students. Wiggins and McTighe (2005) indicated that students have the flexibility to assess when, where, why, and how to extract information needed to solve new problems. Educators learn that in order to use data from each lesson educators must begin with the end in mind and plan accordingly. Wiggins and McTighe (2005) offered four initiatives to be considered when predicting the next instruction path for a student. They include (a) outcomes, (b) goals and objectives, (c) a plan of instruction, and (d) curriculum development that will narrow the gap between what students already know and what they need to know.

Educators use a variety of assessment practices to determine if concepts need to be re-taught with a different instructional approach. Assessment of student learning is not limited to but includes; student conferences about task or activities, antidotal notes about

difficulties educators observe, educator-made tests, standardized tests, and projects or writing assignments. These approaches can apply to a group or individual students. Educators should align assessments not only with curriculum, but with what is actually taught (Stronge, 2002). According to Brookhart (2008), formative feedback addresses cognitive and motivational factors simultaneously. She found that in order for students to use the information, they must be able to hear and understand it. Stronge (2002) and Brookhart (2008) concurred that when providing feedback, students' feelings of control and self-efficacy are crucial. Therefore, merely providing right or wrong answers has a negative impact on student learning. They found that educators are able to provide constructive criticism as a tool to enhance classroom learning through practice. Stronge concluded that educators during instruction monitor for signs of misconceptions that may occur during the learning process.

Marzano, Pickering, and McTighe (1993) designed five dimensions of learning to assist educators in designing curriculum and instruction based on how students learn:

Dimension 1: Positive attitudes and perceptions about learning. A student feeling comfortable in the classroom is important to learning. If a student does not feel safe, then learning could be minimized. Establishing positive attitudes about learning should foster successful learning outcomes.

Dimension 2: Acquiring and integrating knowledge. Educators' instructional planning focuses on the student's ability to bridge new knowledge to old knowledge that allows students to construct meaning of new content and acquire an enduring understanding.

Dimension 3: Extending and refining knowledge. Educators determine what important information, strategies, and activities will be used to extend and refine the student's knowledge. Students are expected to analyze their learning in a more in-depth and rigorous manner. Integration fits naturally with the curriculum content and cognitive skills.

Dimension 4: Using knowledge meaningfully. Educators plan opportunities for students to utilize a deeper and richer level of knowledge to perform meaningful tasks. Content determines which of the five dimensions of learning an educator explores for significant issues or problems that naturally stand out.

Dimension 5: Productive habits of mind. When educators guide students in formulating habits of the mind, the students become critical, creative, and self-regulated thinkers. Creating mental habits enables students to become constructivists of their own learning at any point in their lives, which is probably the most important goal of education. Educators plan lessons to include activities and strategies to consciously enable students to develop productive habits of mind (Marzano, Pickering & McTighe, 1993).

Marzano et al. (1993) outlined dimensions of learning model that illustrates how the five dimensions of learning work together in relationship to learning. Effective learning will happen when students interact with the five distinct learning models. Educators will integrate and change the nature and delivery of the curriculum. They will strongly incorporate or link learning to curriculum and assessment if change was to occur within the school or district.

The relationships between assessment, teaching, and learning are closely and intimately tied to assessment reform. The importance of changing assessment practices is to eliminate students in American schools from mimicking what they know they will be tested on by the school district or state. Given the new understanding of learning, learning occurs in a holistic fashion, not just in bits of information. Shepard (as cited in Marzano et al., 1993) noted that learning is active, engaging, and integrated in sound instructional methods:

> The notion that learning comes about by the accretion of little bits is outmoded learning theory. Current models of learning based on cognitive psychology contend that learners gain understanding when they construct their own knowledge and develop their own cognitive maps of the interconnections among facts and concepts. Real learning cannot be spoon-fed one skill at a time. (p. 11)

Wiggins and McTighe (2005) stated that assessments require students to develop understanding. Authentic assessments designed by educators will replicate important real-world challenges. The heart of assessment is where students are required to utilize knowledge in the real-world with genuine purposes and specific audiences. Newmann, Lee, and Smith (as cited in Zemelman, Daniels, & Hyde, 2005 stated that educators determine what a student must be able to do as a result of each authentic lesson as it impacts student achievement. Authentic lessons allow students to construct knowledge, draw conclusions, and connect a topic to their own lives. Schmoker (1999) stated that "school success depends upon how effectively we select, define, and measure progress and how well we adjust effort toward goals" (p. 25).

McTighe and Ferrara (1994) stated that classroom assessments promote learning over time. Assessments are aligned to the curriculum and provide information to educators, students, and parents. Unlike standardized tests, classroom assessments promote learning over time, include a variety of methods, focus on quality of instruction, and provide an individualized picture of student achievement, and timely and precise feedback.

Educators view assessments as an integral part of instruction and change their approach to how they interpret results, such as a rubric or scoring guide (Guskey, 2007). Educators refrain from relying heavily on textbooks or instructional materials offered by the publisher. Textbooks are used solely as a guide for educators to deliver the primary concepts of the materials, never to replace or diminish opportunities to focus on students' individual needs. Educators who treat assessment as an evaluative tool to assign grades for the primary purpose of gathering information are using assessments in a haphazard way. Well-aligned assessments that coincide with educators' instructional activities should not leave the student guessing or surprised about learning outcomes (Guskey). Classroom assessments provide educators with meaningful sources of information, specific guidance for improvement of their teaching, and identification of their strengths and weaknesses. Consequently, if more than half of the class are experiencing low efficacy then the educator will improve his or her method of instruction.

Corrective work is done continuously, in the classroom, and under the guidance of the educator during instructional time (Guskey, 2007). High quality corrective instruction is designed to teach certain concepts or skills that have not been learned. Educators' instructional alternatives are engaging, appropriate, and provide new learning

experiences. Educators consider the students' learning styles and intelligence rather than simply restating objectives in the original manner. Additional time devoted to initial instruction should minimize minor student errors, better prepare students for learning tasks, and reduce corrective work. Educators enable students to become lifelong learners, learn from mistakes, and develop learning-to-learn skills. Wiggins (as cited in Guskey, 2007) stated, "Some assessment experts argue, in fact, that students learn nothing from a successful performance. Instead, they learn when their performance is less than successful, for then they can gain direction about how to improve" (p. 24). Guskey concluded that using assessments is vital in a district's effort to reform and improve education. However, grades will not be used as a punitive method of evaluating students on the initial assessment. If grades are used as a punitive method, educators are able to defend their purpose to students, parents, school officials, and others. Ultimately, grades provide an accurate description of a students' learning outcomes, rather than the process in which they acquired the information.

Ainsworth (2007) stated that educators are saturated with finding assessments that yield quality results as defined by NCLB legislation. This mandate forced educators to systematically process assessment data and make inferences about student progress in efforts to modify instruction over time. Ainsworth described three powerful instruction and assessment practices that improve student achievement:

- Power standards. Educators use subsets of the complete list of standards, indicators, professional judgment and wisdom to select and prioritize learning outcomes that outline what students know and will be able to do at the end of the course. Educators formally and systematically assess

student mastery of high-priority content standards, thus becoming the primary purpose for creating common formative assessments. This standard is considered the foundation that allows educators to dig deeper and ensure students have enough skills or knowledge to be successful.

- "Unwrapping" the standards. Educators use a four-step process to analyze the wording of the standards in order to identify the key concepts and skills that students need to know and are able to do. First, educators should "unwrap" the standards and pinpoint the particular concepts and skills contained within them. Then, students organize the concepts and skills on a graphic organizer, which serves as a learning vehicle for students to acquire understanding of targeted unwrapped standards. Next, educators determine the big ideas that help students gain a deeper understanding in response to essential questions in their own words. Finally, educators understand the value of unwrapping power standards when writing common formative assessments items, such as selected and constructed-response formats.
- Data teams. These teams look at the data to analyze the strengths and weaknesses in the instructional process to improve student performance between the pre and post assessments. The action plans are written to guide the implementation of the data driven decisions. Monitoring and adjusting the instruction is essential to the student's academic progress. (pp. 86–88)

Popham (2008) stated that "*teachers adjust* their ongoing instructional activities or *students adjust* the procedures they're currently using to try to learn whatever they're trying to learn" (p. 6). Jensen (1998) acclaimed that educators do not dwell on singular approaches and "right" answers as a way of thinking. He further stated that the brain is highly effective and adaptive allowing students to construct responses for academic success. Finally, a quality education promotes the exploration of alternative thinking in applying knowledge and understanding.

In a video produced by the Association for Supervision and Curriculum Development (1990), ten new performance assessments were outlined that educators want students to be able to do as they create a product and demonstrate higher order thinking skills as they learn. The list of performance assessments below supports fostering higher order thinking skills in students.

- *Outcomes* – The outcomes consist of knowledge (declarative knowledge), skills and processes (procedural knowledge) and habits of learning that will help students to integrate and acquire knowledge more effectively. Educators through backward design should plan lessons based on the outcomes, thereby eliminating the mystery of learning and guide students to become lifelong learners.
- *Indicators* – Specificity, educators are able to observe and measure student understanding through self-monitoring of student progress. Ultimately, students should be constructivists of their own knowledge in their quest for understanding.

- *Assessment tasks* – Educators use various learning vehicles such as performance tasks, projects, and portfolios to support good teaching and instruction as students understand the real world in which they live.
- *Characteristics* – The characteristics of performance assessment in the classroom provide students an opportunity to demonstrate critical thinking, reasoning, and problem-solving skills enabling students to demonstrate mastery of skills. Authentic assessments are meaningful and linked to the student's experiences.
- *Developing tasks* – Educators work collaboratively to create themes or big ideas essential to the content that are acquired as a result of each lesson.
- *Criteria* – As a result of each lesson, students have prior knowledge of the instructional objectives that need to be accomplished. Students are provided with examples of acceptable and unacceptable performance tasks with rubrics or scoring guides containing the criteria to be achieved.
- *Valid and reliable* – Educators ensure that classroom assessments provide valid and reliable measures of desired outcomes. Task dependability is consistent over time, free from educator's biases and correlates with the learning activity.
- Standards – Educators establish performance standards for learning outcomes and assessments by identifying the level and standard of performance required. If students are told the expectation rather than

being placed in a "gotcha" situation, they are more inclined to be challenged and empowered.

- *Communicating* – Educators communicate results in ways that lead to understanding of and improvements in student performance through feedback and sharing results of assessments with students. Examples of assessments as feedback, performance activities and tasks are provided to parents and students in an explicit, timely, and meaningful way.
- *Supporting* – Educators support students in achieving desired instructional levels through performance instruction and assessments, using nonlinguistic representation for collected data that provides assessments to become a natural form of instruction.

Stronge (2002) defined effective teaching as "the result of a combination of many factors, including aspects of the teacher's background and ways of interacting with others, as well as specific teaching practices" (p. 61). Jackson (2009) stated that a teacher's mindset "is a way of thinking about instruction, about students, about learning, and about teaching in general that makes teaching fluid, efficient, and effective" (p. 2). She determined that good educators focus on knowing what questions to ask rather than having all of the answers. As a result of each lesson, educators formulate questions that are relevant and sufficient. Finally, assessment information is appropriately utilized to achieve desired results.

Effective Teaching Strategies

Schmoker (2009) stated that "when schools formally measure and publicize their weaknesses, addressing problem areas acquires new urgency" (p. 70). He noted that

authentic 21st-century education must aim to help students from all backgrounds. Data-driven instruction must be different from rigid accountability formulas in transforming schooling. Barton and Coley (2008) stated that educators reflect on measures that yield a deeper understanding of student achievement. An effective instructional resource is the result of educators' enhanced accountability in ensuring a comprehensive picture of student achievement. Barton and Coley addressed the debate in the United States as it pertained to the passage of NCLB mandate. Emphasis on the provisions of NCLB forces educators to use the results at the end of the year, instead of analyzing the gains in knowledge of students during the year. Barton (in Barton & Coley, 2008) determined that the correlation between the end-of-the-year comparison versus gains throughout the year resulted in a lower correlation between results.

Educators understand that assessment of and for learning are vital tools in determining student achievement. According to Butler and McMunn (2006), classroom assessments *for* learning (formative) require that the assessments occur regularly and that they identify strengths and weaknesses of the student performance so that corrective teaching can take place. The information gained from the assessment *for* learning will assist the educator in molding the teaching and learning process. Assessments that occur at the end of the learning process for the purpose of grading students or comparison of their academic outcomes are considered assessment *of* learning (summative). Butler and McMunn stated that "in order to change and make improvements in the classroom, teachers need a clear understanding of classroom assessment, examples and models to emulate, feedback on their efforts, and support along the way" (p. xxv).

Stiggins (2007) linked assessment *of* and *for* learning as it relates to the educator and student roles. He views the educator's role *of* learning as administering accurate assessments and the use of sound grading practices. The role of the educator changes in the assessment *for* learning over time by diagnosing student needs, supporting student practices, and helping students improve academically. The student role in assessment *of* learning is to work hard and strive for top scores and grades demonstrating competence. But in assessment *for* learning, the student identifies and understands success and uses each assessment as a learning block.

O'Connor (2007) stated that as public high schools in the United States increased in the late 1800s, educators began reporting student performance through percentages and other grades to rate student achievement. Methods used in that era commonly reported student progress by calculating grades on a curve or using a pass-or-fail system, which was often counterproductive to the objective of learning. Grading of this magnitude created a cult-like status which promotes a culture of accumulating points and competitiveness, rather than collaboration with the end result of summative assessments (assessment *of* learning). O'Connor (2007) noted that grades will most likely not disappear from schools, but educators will alter their attitudes about grades from a traditional culture to a culture based on standards. O'Connor found three guiding beliefs that educators consider when focusing on learning for all and when engaged in professional practice and dialogue. The first transformation requires the educator to understand that grades are not essential in order for students to learn. Regular and specific student feedback on what they learned well, or what problems they will encounter must be meaningful and supportive of learning. Grading is complicated and not

just about crunching numbers, but requires a large quantity of collaboration and professional dialogue. Grading of student learning is phenomenally subjective due to the criteria and choices that the assessor uses for students to meet the standards. Educators' objectivity ensures that the methods of grading are not faulty and biased, which may result in damaging students and educators.

Wiliam (2007) stated "Measured in terms of impact on student achievement, the single most important thing to change in teachers' practice is the minute-to-minute and day-by-day use of assessment to adjust instruction" (p. 188). Wiliam determined two main reasons why this is uncommon in every American classroom. The first reason is that research identifies many effective practices that challenge established traditions. The second reason is that the changes are hard to implement because it requires deep changes in the way educators teach rather than having the appearance of being superficial.

Reeves (2007) stated that the role of educators in the use of effective assessments has continued to be an area of debate, speculation and uncertainty. The conclusion that emerged from this debate indicates that feedback is accurate, timely and specific; but feedback will be counterproductive when inaccurate and untimely; and inconsistent practices exist within and among schools. Reeves noted that students are not able to remain engaged if the feedback is inaccurate or differs based on gender or socioeconomic status. Effective feedback provides educators with information on how students perform and improve for the next time they are engaged in a task. This type of feedback is measured in seconds, not weeks or months. When students are unable to respond to the academic environment, it is not due to their intellectual ability, but to the lack of receiving consistent, timely, and specific feedback from the educator.

Guskey, Bailey, and Marzano (as cited in Reeves, 2007) noted a correlation between ineffective feedback as it relates to student achievement as being counterproductive. Without emphasis on immediate feedback, educators continue to administer final exams, which are irrelevant and futile. According to Reeves, inconsistent grading practices within and among schools vary widely from classroom to classroom. Therefore, educators provide a clear framework and consistent guidance in order to prevent students from becoming discouraged and wanting to give up. When students give up, ambiguity and inconsistency from the educator pervades the classroom. There are two reasons educators fail to emphasize consistency in the classroom. The first reason for this indifference is the results of misplaced priorities and the lack of buy-in to grading policies. The second reason involves educators making inappropriate decisions about assessments, which are based on having the wrong information. Educators misuse the term *assessment* and many related concepts such as *validity*. Without an improvement in assessment knowledge the well-intended efforts made by the educator only yield frustration and bad decisions.

Educators and students are partners in developing common assessment data in order for PLCs to work. Academic self-efficacy and eagerness to learn are the driving force for academic success rather than fear, helplessness, and vulnerability. Stiggins (2007) noted that productive and sufficient assessments ensure more than just accuracy. For educators to create and measure best practices, they must start with a clear sense of why they are assessing. As instruction unfolds in the classroom, both student and educator will have a clear purpose and be aware of the continuous evidence along the learning journey towards each standard. He stated, “Students must not be wondering *if*

they will succeed—only *when* they will succeed" (p. 62). This requires the educator to know where the learner is compared to the ultimate learning success and how to close the gap between the two areas of day-to-day classroom assessment and summative assessment. Stiggins noted that classroom and program levels of decision making are important, but different. Educators utilize classroom assessment decision making continuously as they make immediate instructional decisions. Program-level decision making informs the educator about programs that are working or need adjustments when achievement standards are not mastered by the student.

Stiggins (2007) noted that educators will have a clear, complete, and appropriate articulation of the achievement target(s) to be mastered. In order for educators to design this appropriately, standards are broken down through a process of scaffolding that supports the student along their journey to success. Formative assessments are derived from the day-to-day unfolding of classroom targets in order to guide learning. He further noted that educators measure teaching strategies through assessment methods based on student understanding. Decision making by the educator is supported through appropriate sampling of the student's knowledge that leads to a confident conclusion. Educators gather enough evidence to support learning and minimize biases such as culture, language, or social experiences. In order for communication to be effective in the context of formative assessment, feedback is descriptive rather than judgmental. "It must provide sufficient detail to inform without overwhelming, and it must arrive in time to help the learner" (p. 68). Davies (2007) and Stiggins (2007) concur that reducing evaluative feedback and increasing specific corrective feedback causes students to become motivated and engaged, and to learn more. Davies (2007) noted that, through deep

student involvement, educators will increase the quantity and quality of formative assessments and feedback in the classroom to promote learning. She determined that when students are involved in assessments, more learning takes place. Involving students as partners in co-constructing criteria changes the teaching and learning environment.

Almeida (2007) stated that the process of language acquisition is crucial in monitoring language instruction. Educators struggle with effectively meeting the assessment and learning needs of the English language population. She believed that educators are able to influence student outcomes and destination and impact their quality of education:

> Teachers must engage students at the correct level of discourse—the student's "zone of proximal development." When engaged at their current level of language ability, students can—with support from the teacher—demonstrate what they are expected to know and be able to do. (p. 150)

Almeida noted that educators will not adopt a one-size-fits-all approach with standardized time lines for English-language learners. Educators will consider individual students' cultural, linguistic, pedagogical and cognitive needs and how they most effectively learn content and demonstrate understanding. The effective assessment system for English language learners that educators will use includes cooperative learning opportunities, performance assessments, and the use of nonlinguistic representation, as well as educator observations in conjunction with rubrics. Authentic assessments allow students to use their innate understanding of concepts and skills when performing higher levels of thinking. Almeida noted that student-centered accountability focuses on the improvement of teaching and learning instead of traditional accountability which centers

on interpreting evaluations and publishing reports. Successful educators will use practical teaching strategies before, during, and after the learning journey. English-language learners need a well-defined assessment system for the continuous monitoring of student progress. She concluded that the country's ever-increasing population of English-language learners is dependent on educators creating and administering effective assessments that impact the quality of education for those students and help ensure our economic and social welfare.

Gay (2000) stated that culture is at the heart of all educators, whether it is curriculum, instruction, administration, performance, or formative assessments. She noted that underserved students acquire the knowledge and skills to be successful in life. Therefore, it is important that all students strive to meet high academic standards regardless of cultural or ethnic backgrounds. Wormeli (2006) noted that assessment is a coaching and learning tool that guides instructional decisions based not only on what educators know about curriculum, but on what educators know about the instructional decisions. Assessments in a well-designed differentiated classroom advance the students' learning; such assessments do not just inform, but assess learning in good instructional decisions. Essential and enduring understanding and skills are aligned with the goals and objectives being taught. A good assessment provides enough information to the educator about what students know and do in designing a lesson for student success.

Summary

Chapter 2 included a review of literature on (a) the achievement gap, (b) narrowing the achievement gap, (c) educators' attitudes, (d) lesson design, (e) student understanding, (f) understanding by doing, and (g) effective teaching strategies. The

achievement gap is a widespread educational concern. However, it is treated as an educational issue, not a racial problem. Studies suggest that the educator is the single most important individual in narrowing the achievement gap. Further, if there is hope of narrowing or reducing the achievement gap, educators must interact with all students, by designing instruction to improve teaching and learning over time, thus avoiding writing off underserved students. The byproduct of this type of interaction allows the students to become constructivists of their own learning and develop their level of efficacy along with the support of educators.

Review of the literature on educators' beliefs and the achievement gap suggests that educators be reflective in their teaching in order to develop students' academic talents to reach their fullest potential. The research literature suggests that student helplessness occurs when educators lack high expectations from their students, which may result in students' lack of academic development and higher levels of cognitive performance. While educators have no control over external factors involving the home and community, it is important for educators to have a passion for teaching all subgroups of students. When educators are able to design lessons for student success and enduring understanding through effective teaching strategies, then true educational reform is most likely to occur within the classroom. Supporting factors to ensure student understanding, active engagement, and the transfer of knowledge internally and externally in one's environment are critical components in succeeding academically. Some of these strategies will include (a) timely feedback, (b) appropriate wait time for student responses, (c) well-articulated goals and objectives, (d) ongoing meaningful assessments

that match the learning standards, (e) recognizing student efforts and celebrations, and (f) corrective or pre-teaching of concepts when needed.

Chapter 3 will discuss methodology design, chapter 4 will report the results, and chapter 5 will provide discussion, interpretations, conclusions, and recommendations.

Chapter Three – Methodology

Overview

The purpose of this study was to investigate efforts to change educator attitudes and teaching strategies through professional development focused on the use of backward design curriculum and the principles of efficacy. The effects of adopting and using the principles of efficacy were determined to change the direction of educator interactions with children to increase student achievement. Wiggins and McTighe (2005) viewed understanding by backward design as a way of redesigning lessons to enhance student understanding for the purpose of achieving learning outcomes. This chapter on methodology is divided into four sections: type of research; setting; participants and procedures; and measures and instrumentation. This research investigated the principles of efficacy communicated in the work of Howard (1980). The operational model for managing development promotes a way of thinking and a process for assisting students to achieve more through their belief in the benefits associated with working to learn. The operational model for managing development is contained in Appendix A, Table A1. It provides a path for educators to pursue with children in order to promote incremental success and student belief in the ability to take charge of their own academic progress.

The efficacy paradigm, a belief system that can be used by educators to foster higher levels of self-confidence, not self-esteem, in students (see Appendix A, Table A2). This shift in thinking ensures that high expectations for students are maintained, and educators develop positive educator-student relationships for improved academic growth for the learner. This operational model shifts students from a focus on helplessness to a focus on mastery. Through the principles of efficacy educator are influenced to examine

and/or modify instructional practices, mobilize effective efforts through engagement, feedback, research-based best teaching strategies with an outcome of student mastery and academic development. Efficacy results from engaging in cause-and-effect thinking, spending energy on realistic tasks, setting challenging goals, persevering in the face of barriers and occasional failure, and forecasting future performances accurately. Efficacy is linked to a belief that one's work will make a difference and is related to being optimistic, confident, and knowledgeable. Efficacy is also linked to the learner having an internal locus of control and power rather than being controlled by external forces (Costa & Garmston, 2002). According to Reeves (2008), one approach in expecting excellence is to "emphasize holding all students to the same high academic standards, delivering research-based instruction and rigorous assessment with accurate feedback, and giving students multiple opportunities to meet standards" (p. 85).

Backward design curriculum describes a process which educators use to determine what the student needs to learn and to be able to do as the desired outcome of each lesson. Designing these lessons involves incorporating learning goals, standards, and assessment measurements used to assess desired learning. Educators are then able to determine the necessary knowledge, skills, and teaching methods needed to increase student learning. A research-based teaching strategy describes instructional practices that have been researched, analyzed, and adopted widely to improve student achievement. For the purpose of this study the nine categories of instructional strategies with strong effects on student achievement were taken from McRel's research.

From the works of Marzano et al. (2001), nine categories of instructional strategies proven to improve student achievement were based on a survey of thousands of

comparisons between experimental and control groups, using a wide variety of instructional strategies in all classrooms and disciplines. Table 1 displays 30 years of accumulated research and how researchers began to look at the effects of instruction on student learning. The types of instructional strategies that work best to improve student achievement have been synthesized and described in Table 1. Generalizations drawn from the research justify the impact that highly effective educators have on improving student achievement. Educators could maximize the possibility of improving student achievement through the use of these strategies. The numbers in the table indicate that those exposed to the experimental group showed an average effect size in student achievement ranging from .59 to 1.61. The percentile gain ranged from 22 to 45 when translated from the effect sizes provided. The number of studies used in this table varies from a range of 31 to 1,251. These studies were used to compute the average effect size and the standard deviation which indicated the difference in the studies. The authors noted that instructional strategies are tools only and no instructional strategy works equally as well in all situations. Table 1 lists these nine categories of instructional strategies that affect student achievement, the average effect size, and percentile gains.

Table 1

Nine Categories of Instructional Strategies that Affect Student Achievement

Category	Avg. Effect Size	Percentile Gain	Number of Studies
Identifying Similarities & Differences	1.61	45	31
Summarizing & Note Taking	1.00	34	179
Reinforcing Effort & Providing Recognition	.80	29	21
Homework & Practice	.77	28	134
Nonlinguistic Representation	.75	27	246
Cooperative Learning	.73	27	122
Setting Objectives & Providing Feedback	.61	23	408
Generating & Testing Hypotheses	.61	23	63
Cues, Questions, & Advance Organizers	.59	22	1251

Note. Classroom Instruction That Works: Research-Based Strategies for Increasing Student Achievement, by Marzano, Pickering, & Pollock, 2001, p. 7. Alexandria, VA: Association for Supervision and Curriculum Development.

Each of the three investigators worked with members of their teaching staff to determine educator attitudes and teaching strategies regarding student learning.

- From the perspective of the principal at Elementary School A, Alice Aldridge, this study allowed the exploration of what educators should know and be able to do to narrow the achievement gap between the subgroups. Observations and interactions with educators allowed

identification of educators' beliefs and how lessons are designed for student success.

- From the perspective of the assistant principal of High School A, Anissa Harris, this study addressed curriculum and instruction practices for increasing student achievement. Findings provided insight into what educators must be able to do as a result of each lesson as well as acknowledging educator beliefs as an integral part of achievement.
- From the perspective of the principal of High School B, Gwen Grooms, this study determined when educators know they are experiencing success in their efforts to narrow the racial achievement gap. This study explored best teaching practices used to measure strategies and identified how educators know students truly understand what is being taught.

Type of Research

As a qualitative study, the research reported here embodied both quantitative and qualitative perspectives as it related to efforts to change educator attitudes. A qualitative research, by definition, is a "study that investigates the quality of relationships, activities, situations, or materials" (Fraenkel & Wallen, 2003, p. 430). A quantitative research, by definition, is "reported in terms of scores" (p. 200). Each potential adult educator was given a letter of consent to enlist his or her voluntary participation in this project. Each investigator solicited and selected participants from the three buildings represented in this research (Elementary School A, High School A, and High School B). Sample sizes assigned were no less than 15 adult participants per investigator. All educators were given a pre-treatment survey to establish their understanding of the principles of efficacy

and backward design curriculum (see Appendix E). Researchers were trained to implement both concepts through classes taken at Lindenwood University. Participants were involved with in-service training in the principles of efficacy and backward design curriculum by the researchers in each of their schools over a period of 9 weeks. Adult participants were assigned to develop lessons based on principles of efficacy and backward design curriculum. Upon completion of the study, each adult participant of the study was given the same survey as a post-treatment assessment to examine the extent of change in educators' attitudes and teaching strategies.

The hypothesis was, An understanding of the principles and strategies of efficacy and backward design curriculum will result in a positive change in educator attitudes and instructional strategies as measured by Likert scale survey results.

The research question was, How do efforts to change educator attitudes and teaching strategies through professional development focused on the use of backward design curriculum and the principles of efficacy affect educator beliefs and attitudes, as measured by written open-ended questions?

Setting

The settings of this study were three schools in a suburban St. Louis County school district. One of the schools is an elementary school; the other two are high schools. The school district serves children from five contiguous communities. There were approximately 83,829 people residing in the boundaries of the school district. The school district enrolled 12,722 students in fall 2008. The demographic data for the 2007–2008 school year consisted of 12,186 students. The district's school population consists of 77.2% (9,407) African American; 20.6% (2,516) Caucasian; 1.2% (148) Hispanic;

0.8% (102) Asian; and 0.1% (13) Indian. The demographic data for the 2007–2008 school year for total enrollment in the state consisted of 894,609 students. The state's total enrollment consisted of 18.0% (160,785) African American; 76.2% (681,622) Caucasian; 3.6% (32,489) Hispanic; 1.8% (15,787) Asian; and 0.4% (3,915) Indian. These data are included in the information in Table 2.

Table 2

The District & State 2008 Ethnicity Accountability Report

	Number of Students		Percentage of Students	
	DISTRICT	STATE	DISTRICT	STATE
Black	9,407	160,785	77.2%	18.0%
White	2,516	681,622	20.6%	76.2%
Hispanic	148	32,489	1.2%	3.6%
Asian	102	15,787	0.8%	1.8%
Indian	13	3,915	0.1%	0.4%
Totals	12,186	894,598	100.0%	100.0%

Note. From Missouri Department of Elementary and Secondary Education, 2008.

In Appendix B, Figure B1, additional secondary data viewed from the district's archives, such as Gates Spring Average Extended Scale Scores (ESS) for the district's cohort focused from 2003 to 2008, is included. Extended scale scores is an equal-scale extending from the lowest achievement in kindergarten to the highest in grade 12. It was developed so that progress in reading can be followed over a period of years. The

possible total ESS ranged from a low of 162 for grade 1 to a high of 697 for grade 12. The district data focused on a cohort group from 3rd grade through 11th grade. Findings for the district spring average ESS ranged from 467 in grade three to 520 by grade six. This correlates with the district grade equivalent gains ranging from 0.9 months to 1.4 months gain for third through sixth grade. Scaffolding of instruction and building interpersonal relationships with students may have minimized the high quality of academic performance for students. Educators' inability to design lessons for student success and to determine what a student must be able to do as a result of each lesson did not promote student success nor narrow the academic achievement gap.

Students in the district are divided by grades into 24 schools—17 elementary schools (K-6), 3 middle schools (7–8), 3 high schools (9–12), and 1 alternative school. Some basic information about the three schools involved in this study is provided in Table 3. It is important to note that High School A had a higher Caucasian population in comparison to Elementary School A and High School B. It is worth noting that the achievement gap extends beyond academics in many different areas, not just test scores (Targeted School District, 2008).

Table 3

Target School Demographic Information 2007–2008

	Elementary A	High School A	High School B
Total enrollment	309	1,937	742
Minority enrollment %	95.8%	65.2%	97%
White enrollment	3.2%	32.9%	2.6%
Free/Reduced Lunch	84.9%	41.0%	75.6%
Total Number of Incidents	16	171	108
Office referrals (Minority)	201	8,927	3,315
Office referrals (White)	2	1,262	51
Attendance	94.8%	91.5%	87.7%

Note. From Missouri Department of Elementary and Secondary Education, 2008. Target Site School District, 2008.

The level of families in poverty in the district has grown significantly over the years. According to the Missouri Department of Elementary and Secondary Education (2008b, 2008c, & 2008d), at the time of this writing, 62.70% (7,371.60) of the targeted students received free and reduced lunch as compared to 54.30% (6,531.00) in 2004, which showed a gain of 8.40%. This number does not include those families who choose not to take part in the free and reduced lunch program. Table 4 provides some basic information about the three targeted schools in this study, free and reduced lunch percentages and demographic information for the state and district.

Table 4

Free & Reduced Lunch Accountability Report: Percentage for State, District, and Targeted Schools

	State	District	High School A	High School B	Elementary School A
2008	42.1%	62.7%	41.0%	75.6%	84.9%
2007	41.8%	60.3%	35.9%	75.6%	82.7%
2006	40.8%	58.5%	32.4%	71.0%	86.9%
2005	41.7%	57.0%	28.4%	71.3%	84.8%
2004	40.5%	54.3%	24.9%	73.3%	83.7%

Note. From Missouri Department of Elementary and Secondary Education, 2008. District's Testing and Evaluation Department.

Tables 4 covers a 5-year span (2004–2008) outlining the trends of free and reduced lunch accountability report for the state, district, and three targeted schools (Elementary School A, High School A, and High School B). There are several factors to note from the graphs:

- Based on the data, the percentage of students receiving free and reduced lunch increased across the district and state.
    - The district increased 8.4%
    - The state increased 1.6%
    - High School A increased 16.1%
    - High School B increased 2.3%
    - Elementary School A increased 1.2%
- According to the Department of Elementary and Secondary Education, High School A's African American population has increased by 19.8%

over a 5-year period. There was also an increase in the number of students receiving free and reduced lunch for the district.

- The remaining two schools represented a marginal increase in free and reduced lunch not exceeding 2.3% over a 5-year period for High School B and 1.2% for Elementary School A. Both schools showed a gradual increase in the African American population.

As shown from Table 5, these targeted schools had extremely high minority enrollment, extremely high poverty, and an increase in students who qualify for free and reduced lunch. According to Garcia, Jenson, and Scribner (2009), "The more risk factors a student is subject to, the lower the probability the subject will do well in the standard school environment" (p. 12).

According to the Missouri Census Data Center, from 1990–2000 the districts demographic profile determined that 73,650 of families were living below the poverty status. The district data, as reported by Missouri Census Data Center, showed the median household income in 1999 as $42,202, as compared to $40,266 in 2000, showing a decline of 4.6%. School district records indicate that students from low-income families face greater challenges, perform less well academically, and require additional academic support to be as successful as their peers from middle and higher income families. The Missouri Census Data Center (2000) reported that the district population was 73,650. The age range for the district ranged from ages 5–9 representing 7.8% (5,739) to over the age of 65 representing 15.4% (11,375) people. The household income in 1999 ranged from 6.6% at less than $10,000 to 0.8% at $200,000 or more. The average income for the district was reported, according to Missouri Census Data Center, to be 19.5%

representing an income range from $35,000 to $49,999. Table 5 shows some basic information about the district's demographic profile.

Table 5

Missouri Census Data Center Demographic Profile 3 Trend Report, 1990–2000 for Target District

Population Basics		
	Subject Number	Percentages
Universe: Total Population		
Total Population (Sample Est.)	73,650	
Age		
Universe: Total Population (Range)		
Under 5	4,962	6.7%
Age 5 to 9	5739	7.8%
Under 18	20,245	27.5%
Over 18	53,405	72.5%
Over 65	11,375	15.4%
Household Income in 1999	Number	Income
Universe: Households (range)		
Total Households	28,857	
Less than $10,000	1,908	6.6%
$35,000 to $49,999	5,629	19.5%
$200,000 or more	237	0.8%
Median Household Income		$40,266
Average Household Income		$48,309
Households with Income < $200,000		$28,620

Note. From Missouri Census Data Center, 2000.

As part of this methodology, the attendance summary was examined for the three targeted schools and the district. Table 6 outlines across the three targeted schools, the average yearly attendance percentage for Elementary School A ranged from 94.2% during the 2004–2005 school year to 95.4% during the 2008–2009 school year; High School A ranged from 92.6% during the 2004–2005 school year to 92.2% during the 2008–2009 school year; and High School B ranged from 88.7% during the 2004–2005 school year to 89.4% during the 2008–2009 school year. The district data showed no significant gains from 2004–2005 school year to the 2008–2009 school year. The targeted schools' attendance data fluctuated with the last 2 years showing a slight increase of .6% at Elementary School A and High School A and a 1.9% increase at High School B. Overall, the district only increased .1%, with the targeted schools showing marginal gains.

Table 6

Rate of Attendance: Target Schools and District

Building	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
Elementary School A	94.2%	95.2%	95.1%	94.8%	95.4%
High School A	92.6%	91.6%	92.4%	91.6%	92.2%
High School B	88.7%	89.4%	88.4%	87.5%	89.4%
District	93.4%	93.3%	93.7%	93.3%	93.4%

Note. From Missouri Department of Elementary and Secondary Education, 2008.

Participants and Procedures

This study was available for participation by all educators in each of the targeted schools. Training in backward design was scheduled over a period of 9 weeks with three 45-minute sessions held after school, during planning times and grade-level, staff, and team meetings. The study was designed as an effort to identify the best research-based instructional strategies that enhance student achievement for all students. Adult participants from three Midwestern suburban schools participated in the research study. One was an elementary school while the other two schools were high schools. Consent letters were distributed to the entire faculty (fall 2008) in order to solicit potential participants. Educators had an opportunity to voluntarily participate in the research on a "first-come, first-served" basis. The role of each investigator was to secure a group of 15 adults (40–60 total) to become part of the study. Once participants were secured, a survey using a Likert scale and an open-ended question component was distributed and explained to the participants (2008). The survey was completed and tabulated for baseline educator knowledge based on closed-ended and open-ended questions about the hypothesis prior to treatment. Each researcher worked with 15 teacher participants in their respective building to teach the principles of efficacy and backward design curriculum. Each educator was assessed by the researchers on their understanding through the development of a curriculum unit using the backward design template covering the learned principles and teaching strategies of the concept.

Teaching practices resulting from the principles of efficacy and backward design curriculum were explored to identify how educators know students truly understand what is being taught. The setting of the study was individual classrooms of all educators. The

duration of the study was fall 2008 to spring 2009. Findings provided insights into how educators' attitudes may shift as a result of each instructional lesson presented, training given by each researcher at their respective locations, anecdotal notes recorded during face to face interactions with participants, oral discourse with adult participants and classroom visitations. Elementary School A's training was conducted during grade level meetings, educators' planning times and staff meetings. High School A and B's training was conducted during professional learning community sessions and department and staff meetings. Upon completion of the study (spring 2009), each adult educator was given the same survey as a post-treatment assessment to examine the extent of change in educators' attitudes and teaching strategies (see Appendix E). Results from each researcher were tabulated at each site involved in the study. The summation of qualitative data supported with the use of numerical rating scale was examined by the researchers at their respective schools and training was conducted at each school. Then the researchers collectively examined the overall findings of the study. A word-for-word random sampling of the summarized results of the responses from the participants was reported.

Measures and Instrumentation

The measures and instruments employed in this study were: an ethnicity accountability report, targeted school demographic information, free and reduced lunch accountability report, Missouri Census Data Center Demographic Profile 3 (1990–2000), and yearly rate of attendance. The measures and instruments used in this study were examined and supplied from the Missouri Department of Education. This data supports the efforts of assisting educators to understand the socioeconomic background of the students in which they are servicing in their attempt to narrow the achievement gap. The

hypotheses of this study stated that an educators' understanding of the principles and strategies of efficacy and backward design curriculum will result in a statistically significant positive change in educator attitudes and instructional strategies as measured by Likert scale survey results. The research question was how investigating efforts to change educator attitudes and teaching strategies through professional development focused on the use of backward design curriculum and the principles of efficacy in focusing on educator beliefs and attitudes as measured by written open-ended questions. A comprehensive discussion about school improvement, quality student performance, and the importance of the educator's role in impacting student achievement was discussed with the participants. Building upon the hypothesis, an action plan was designed by the researchers to be implemented by the participants in all three schools (see Appendix C). Educators were provided with sample templates of backward design lessons in various content areas (communication arts, geometry, chemistry, social studies, art, physical education and music, etc.) to assist them in the development and implementation of the backward design approach in their classroom. The duration of the study with student groups was based upon the length of each unit developed by each teacher participant using the district's curricular scope and sequence and grade level expectations (GLEs).

After participants were secured, a survey with a Likert scale and an open-ended question component was distributed and explained about the hypothesis prior to treatment (fall 2008). The research question addressed how investigating efforts to change educator attitudes and teaching strategies through professional development focus on the use of backward design curriculum and the principles of efficacy in focusing on educator beliefs

and attitudes. Questions were formulated after gathering data on the research topic, examining several sample surveys, and conferring with committee chairperson. The final selection of survey questions identified the educator's perspective towards teaching based upon the seven questions to be investigated. The type of questions developed addressed the achievement gap, narrowing the achievement gap, educators' beliefs and the achievement gap, lesson design, understanding by student involvement, and effective teaching strategies (see Appendix D).

The pre-treatment survey was completed and tabulated for baseline educator knowledge and served as a foundation for researchers to address educators' prior knowledge of efficacy and backward design curriculum that would aid in the change of educators' perspectives on student achievement. In each researcher's respective building, backward design curriculum and the principles of efficacy were taught in three sessions.

Session 1 offered an opportunity to discuss the belief system involved with the efficacy paradigm (Appendix B, Table B5). Emphasis was placed on efficacy as a belief in self-confidence and self-esteem and the ability to mobilize students' efforts through effective practices that resulted in accelerated development. During session one, a discussion was held about learned helplessness and the important role the educator plays in developing relationships between stimulus response and outcome as to whether student efforts would positively or negatively impact academic growth. The researchers promoted that efficacy is developed when children are assisted through the efforts of the educator to enter a ZOD because of learning goals that are incremental in nature. When children are comfortable because they are achieving frequent success they begin to shed their helplessness and enter into the MRZ. The second session continued with the

principles of efficacy focusing on the capacity of the student to mobilize available resources to facilitate problem solving and promote development. This session supported the student–educator relationship as important in allowing both to work together to achieve efficacy. The session revolved around a conversation of the importance of effective and timely feedback that scaffolds the student's growth and builds an effective climate that supports students getting better, stronger and smarter. Session 3 of the program intervention centered on the concept of understanding backward design (UBD). Educators were encouraged to focus on the main outcome of each lesson taught and how student learning was to be assessed before designing activities and experiences and the idea of students learning by doing, creating their own understanding that enhances student thinking at a higher cognitive level. Educators, by developing lessons using the principles of backward design, realized that assessments should be continuous as the lesson expands student understanding. Through dialogue with the educators, all lessons designed backward by educators were based on students completing tasks with educator direction. Assessment of the students was immediate and ongoing.

The process outlined in Backward Design Process, Appendix B, Figure B2, offered the educators in the sessions a three-step process in lesson design using big ideas, essential questions, and authentic performances. Through this unified process, educators were encouraged to focus on the following: (1) identifying desired results (What must students know, understand and be able to do? What enduring understandings will be achieved?); (2) determine acceptable evidence (How do we know and accept as evidence when students have achieved the desired results and met the standards?); and (3) planning learning experiences and instruction (What enabling knowledge, activities and skills will

students need to perform effectively to achieve desired results?) (Wiggins & McTighe, 2005). Each participant was assessed by the researchers on their understanding through development of a curriculum unit using the learned principles. Literature was provided to the participants to expand their knowledge in backward design and the principles of efficacy.

Between the sessions, there were opportunities to share feedback with researchers, and a conscious effort was made on each educator's part to target skills and knowledge necessary to meet learning goals while continuing to monitor student progress with direction. Educators were given the opportunity to make the learning both engaging and effective in their quest to create instruction and assessment for academic success. All researchers noted that educators experienced difficulty planning activities within the given time frame due to the various levels of student academic abilities, which made it imperative to design independent, ongoing, inquiry-based assessments. The educators' willingness toward improving student outcomes could shape their perceptions and attitudes in teaching their students.

Upon completion of the study (spring 2009) each adult educator was given the same survey as a post-treatment assessment to examine the extent of change in educators' attitudes and teaching strategies. The results for each researcher were individually tabulated at each site involved in this study. The summations of qualitative and quantitative data were equally distributed among the researchers for overall findings of the study. The qualitative data was a sample of three responses per question selected by each researcher from the researcher site results. The quantitative data was gathered and divided into three categories (first, middle, and last five survey statements) in an effort to

better analyze and compile the researcher's total results. The information obtained may provide a deeper understanding of efforts to change educator attitudes and teaching strategies to impact student achievement in the district.

Summary

As a qualitative study, the research reported here embodied both quantitative and qualitative perspectives as it related to efforts to change educator attitudes. Once educators were secured, a survey containing statements to be rated according to a Likert scale and an open-ended question component was distributed and explained to the participants (fall 2008). The survey was completed and tabulated for baseline educator knowledge based on closed- and open-ended questions related to the hypothesis prior to treatment. Upon completion of the study (spring 2009) each adult educator was given the same survey as a post-treatment assessment to examine the extent of change in educators' attitudes and teaching strategies. Results for each researcher were individually tabulated at each site involved in this study. The summations of qualitative and quantitative data were equally distributed among the researchers. Appendices F, G and H contain the district's permission letter, board of institution review board letter, and the informed consent for participation in research study.

Chapter Four – Results

Introduction

The hypothesis was, An understanding of the principles and strategies of efficacy and backward design curriculum will result in a positive change in educator attitudes and instructional strategies as measured by Likert scale survey results. The research question was, How do efforts to change educator attitudes and teaching strategies through professional development focused on the use of backward design curriculum and the principles of efficacy affect educator beliefs and attitudes, as measured by written open-ended questions?

According to Zepeda (2008), "Change is a difficult concept for people in all walks of life" (p. 40). She further stated that "change is difficult, yet a critical process. It is critical because properly selected and implemented change is the catalyst for individual and organizational growth" (p. 58). Schelchty (1997) identified procedural change, technological change, and systematic change as three types of change. Procedural change is an alteration in the order of events or occurrences. Technological change is the advancement in technology. Systematic change is second-order change, which is an adjustment in the nature of work being done. Systematic change requires the organization to re-think how things are done and challenges the roots of the organization (as cited in Zepeda, 2008). According to Maxwell (1993), change creates fear of the unknown and causes a person to travel in uncharted waters, which causes insecurities to rise.

Six barriers were discussed in Zepeda (2008). It was found that these barriers contribute to educators' resistance to change in schools, which leads to the following: interrupted sequence of leadership, change is viewed as unmanageable, poor preparation,

underrepresentation in the decision-making process, tradition, competing needs and visions, and insufficient resources.

- Interrupted sequence of leadership – Frequent changes in key leadership positions prohibit the creation of a climate for change;
- Change is viewed as unmanageable – Too many educators do not believe that meaningful change is possible;
- Poor preparation – Teachers and principals are frequently ill-prepared for the complex nature of change; conflict management and organizational behaviors represent new and forbidding territory to many;
- Underrepresentation in the decision-making process – Teachers or administrators who are disenfranchised from the decision-making process have no ownership stake in change; therefore, they do not "buy in" to the process;
- Tradition – Some teachers and administrators become so deeply attached to the way that they believe school ought to be that any change can be a very painful experience;
- Competing needs and visions – Administrators and teaching faculty at times have difficulty agreeing on what changes are needed and how resources should be allocated; and
- Insufficient resources – Too many times, a lack of time and/or money derail the change process before it starts. (p. 41).

In order to overcome these barriers, change should be collaborative and supportive, positive in nature and encouraging through creating mental pictures for visualizing

success. McLaughlin and Talbot (2006) noted that learning to improve student achievement in our nation's classrooms enhances the educator's ability to provide a variety of classroom experiences needed to spotlight their teaching capacity and growth.

Answers to the Pre-Treatment Survey Questions

The total number of educators who answered the survey questions was 44. Samples of the answers represent the educators' perceptions or beliefs. Table 7 illustrates the Likert scale numeric responses from educators in the pre-treatment survey questions. Each survey statement has a corresponding question. The answers to the survey questions are reported after Table 7.

Table 7

Educator Attitudes and Teaching Strategies in Pre-Treatment Likert Scale Survey

Survey Statement	# of Responses (N)	Avg	Standard Deviation (SD)	Strongly Disagree (1) SD (%)	Disagree (2) D (%)	Neutral (3) N (%)	Agree (4) A (%)	Strongly Agree (5) SA (%)
1. I work with many students who exhibit this helplessness in learning concepts that I am teaching.	44	3.05	1.31	5 (11.4%)	13 (29.5 %)	5 (11.4%)	16 (36.4%)	5 (11.4%)
2. Every student in my classroom(s) can achieve a high degree of academic success.	44	4.30	0.82	1 (2.3%)	1 (2.3%)	1 (2.3%)	22 (50.0%)	19 (43.2%)
3. I frequently group students in my classroom according to their perceived abilities to grasp the concepts taught.	44	3.14	1.36	8 (18.2%)	4 (9.1%)	11 (25.0%)	15 (34.1%)	6 (13.6%)

Survey Statement	# of Responses (N)	Avg	Standard Deviation (SD)	Strongly Disagree (1) SD (%)	Disagree (2) D (%)	Neutral (3) N (%)	Agree (4) A (%)	Strongly Agree (5) SA (%)
4. I know exactly what my students will understand and be able to do as the result/goal of each lesson.	44	3.82	0.87	1 (2.3%)	2 (4.5%)	9 (20.1%)	24 (54.5%)	8 (18.2%)
5. My students can provide evidence of their understanding throughout the lesson by demonstrating they can accomplish specific tasks.	44	4.36	0.89	1 (2.3%)	0	2 (4.5%)	19 (43.2%)	22 (50%)
6. I think through my assessments before planning lessons and strategies I will use in the classroom.	44	4.25	0.99	1 (2.3%)	1 (2.3%)	4 (9.1%)	17 (38.6%)	21 (47.7%)
7. My students can apply/transfer what they are learning to different learning situations.	44	3.95	0.81	0	1 (2.3%)	12 (27.3%)	19 (43.2%)	12 (27.3%)
8. I am aware when my students are not only experiencing success during a lesson, but also when they are experiencing difficulty.	44	4.23	0.94	1 (2.3%)	0	5 (11.4%)	19 (43.2%)	19 (43.2%)
9. My students are provided with learning benchmarks throughout each lesson.	44	3.36	1.40	4 (9.8%)	6 (13.7%)	11 (25.0%)	13 (29.5%)	10 (22.7%)
10. I provide assessment feedback to all of my students during the learning process.	44	4.18	0.90	1 (2.3%)	1 (2.3%)	1 (2.3%)	26 (59.1%)	15 (34.1%)

Survey Statement	# of Responses (N)	Avg	Standard Deviation (SD)	Strongly Disagree (1) SD (%)	Disagree (2) D (%)	Neutral (3) N (%)	Agree (4) A (%)	Strongly Agree (5) SA (%)
11. Assessment is the same as feedback in my class. Assessment is not used to evaluate my students during a lesson.	44	2.32	1.43	14 (31.8%)	5 (11.4%)	16 (36.4%)	8 (18.2%	1 (2.3.%)
12. My curriculum is inclusive, that is, attainable by all students based on my instruction.	44	3.89	1.30	3 (6.8%)	0	9 (20.4%)	16 (36.4%)	16 (36.4%)
13. My lessons teach children/students to "learn how to learn" and "learn how to perform."	44	3.52	1.47	5 (11.4%)	0	12 (22.3%)	16 (36.4%)	11 (25.5%)
14.My lessons are designed to ensure student learning.	44	4.16	1.26	3 (6.8%)	0	1 (2.3%)	20 (45.5%)	20 (45.5%)
15. The success of my curriculum and my instructional strategies is determined by my student's success.	44	4.18	1.19	2 (4.5%)	0	7 (15.9%)	12 (27.3%)	23 (52.3%)
Totals:	44							

Note. N = 44 respondents.

Survey statement 1a: *I work with many students who exhibit helplessness in learning concepts that I am teaching*. Survey question 1b: *Why do you believe that they (students) exhibit this helplessness, and where do you think it originates?* The following is a verbatim random sampling of three responses from three educators:

- Repeated experiences with academic failure; many may not have examples of academically successful attitudes or adults in home life; lowered expectations for struggling students by parents and educators.

- Helplessness originates from the home environment.
- Sometimes, lack of prerequisite skill, fear of trying.
- Helplessness originates from parents and environments. Students believe that being "smart" is dumb.
- Some students have had a bad experience with an educator and they are passed along without being taught basic skills. These students give up because no one has taken the time to teach them or show them that they care about their success.
- It has to some extent been conditioned through many years of tolerance—too many educators are accepting of limited effort and achievement.
- Students encounter academics as something different from everything in their home life. They see the concepts as unimportant to them.
- Students are frustrated with challenges in learning because we continue to spoon-feed information. Instead of building skills to overcome obstacles, they exhibit a learned helplessness.
- Lack of desire to learn (society, peer pressure). Lack of reading, writing, and math skills (home previous school experience).

The perceptions of the educators were focused on educator behaviors, not student behaviors. Educators' understanding of helplessness centered on the strategies, preparation, lesson design, increase in student efficacy, and a willingness to adjust or change their perception.

Survey statement 2a*: Every student in my classroom(s) can achieve a high degree of academic success*. Survey question 2b: *Why do you believe that this is or is not possible?* The following is a verbatim random sampling of three responses from three educators:

- It lies in my instructional strategies, preparation, and approach. Also, making sure the educator have enough time to sit with a student one-on-one during class will also help.
- The educator believes every child can learn, and find the right place to start and build on students' strengths.
- All students are capable of learning when instruction is designed to meet their individual abilities, interest and learning styles. Quality teaching is the key.
- Educators witness on a daily basis students in need of motivation and love. The greatest doubt is self-doubt. That doubt must be replaced with "yes I can." Many students need an experience of success and someone who believes they can.
- The educator believes all students can learn, educators may have to change or adjust.
- It's possible because the steps to success are scaffolding (one lesson usually builds upon another). It doesn't happen when the connection isn't made; when students don't make the connection.
- The educator [*sic*] offer students every opportunity to succeed and work with them one-on-one if they're willing. In some cases, the educators tell

the students not to give up and fail. If the educators believe in them, maybe the student will too.

- Of course every child can succeed, but the problem lies in how hard they want it.
- The vast majority of those that do poorly fail due to lack of effort.

The majority of sample responses noted the educator's role as being a primary source in helping students achieve academically. Only two of the nine responses shifted the responsibility on to the students being responsible for their learning or lack of effort.

Survey statement 3a: *I frequently group students in my classroom according to their perceived abilities to grasp the concepts taught*. Survey question 3b: *How does grouping assist you with increasing achievement?* The following is a verbatim random sampling of three responses from three educators:

- Grouping helps the educator to target the specific needs of each student.
- Work done in groups is more challenging and meaningful for students.
- Student to student instruction or assistance aids struggling children to hear the objective in a different manner.
- Peer tutoring works well, gives experienced students a sense of accomplishment.
- Sometimes students can help their peers more than educators can.
- You must be cautious when grouping students using cooperative learning (groups). Each student when included is held as part of the answers (solution). Many times grouping can lead to copying and widen the problem for the slower achiever.

- When educators group students, it's either random (i.e. they choose their own) or done in mixed, ability fashion. That way, the stronger students can help the weaker ones while also solidifying their understanding, since educators truly believe students learn best when students teach someone else.
- Like abilities find little frustrations with the group. Diverse groups find the more talented student doing the work and being frustrated with the less talented.
- Students working together to achieve a common goal is motivating to most students. Failure is not as frightening to them. Groups are more likely to try again and again until they can complete the task.

Educators believed grouping is an avenue to increasing student knowledge. The responses favored grouping as a tool for uncovering challenges, specific student needs, and the necessary elements for understanding with peer support.

Survey statement 4a: *I know exactly what my students will understand and be able to do as the result or goal of each lesson*. Survey question 4b: *How do you know this?* The following is a verbatim random sampling of three responses from three educators:

- Educators are regularly surprised at concepts students find easy, as well as concepts they struggle with. Educators know this through assessment as well as observation. Educators have a clear goal for each lesson, but must constantly tailor my instruction, and reflect afterwards to be sure to reach the students.

- By setting explicit goals and objectives for student behavior and outcomes the educators can design assessments that target those objectives and observe student performance.
- All students are different and the educator never knows if a lesson will be effective for each group.
- The educator knows what students in the past have been able to understand, but always re-teach or adjust strategies based on what students actually do.
- Educators have a focused outcome for each lesson. If they pay attention they will be able to meet my goal easily.
- In the beginning of school, the educators begin with basic skills, and watch those students who are quickly grasping ideas. Those who finish quickly and those lagging behind, I continue to watch more closely.
- It is often hard for educators to gauge, and know what to expect and what has worked for previous students according to those results. However, each class is different and ongoing evaluations are necessary.
- Educators know the skills that students are to understand and start the lesson with activities that will assist students in reaching the designated goal.
- By looking and thinking about the objective.

Educators had some prior knowledge of backward design curriculum. As a result of each lesson, educators believe that students understanding could be assessed through explicit goals and objectives being tailored to the instruction. Educators viewed assessment

results as a precursor to re-teaching and closely monitoring students' skills and ideas grasped. Other responses indicated that educators had little awareness and found it difficult to gauge student understanding as a result of each lesson. Some educators believed that beginning a lesson with activities would increase the understanding of concepts taught.

Survey statement 5a: *My students can provide evidence of their understanding throughout the lesson by demonstrating they can accomplish specific tasks.* Survey question 5b: *How do you design the lesson to ensure students will be able to demonstrate success in completing the given task?* The following is a verbatim random sampling of three responses from three educators:

- When possible, educators do not move on to the next topic until the educator is assured of at least a minimal degree of mastery.
- Educators try to design lessons so that the goals can be reached by demonstrating they can accomplish given tasks. To do this, the educator must know the students and know their learning style and how the student can best demonstrate acquired knowledge.
- Educator made guided notes allows me to observe student understanding. Examples given and explained, then student completes similar examples on guided note sheet.
- Small steps that build up to main task. Check for understanding after the completion of each task.
- The educators create activities that help them tie new concepts to what they already know. For example, in teaching plot components last week,

they first applied the terms to Cinderella before applying them to a more challenging story.

- By starting with the end in mind knowing exactly what the educator want the student to learn and a plan of implementation [*sic*]. Checking for understanding throughout the lesson, monitoring work and providing quick feedback.
- Educators make sure that the instruction will include as many of the strategies (Marzano) as possible. Educator also tries to make sure that there are aspects that all levels of learners will be able to understand.
- Student can show understanding of concepts by giving verbal feedback through an activity or non-linguistically.
- The goal is the "Big Idea." The educators' knowledge of the MAP data ensures the weak areas are addressed in the lesson. The assessment is designed to be successful for all students. The lesson is then designed to meet the end goal of success.

The responses from the educators indicated they had some prior knowledge of backward design curriculum. Educators addressed specifics, such as teaching strategies, instructional planning, and designing lessons based upon the goal, and checking for understanding through effective feedback that brings about positive communication.

Survey statement 6a: *I think through my assessments before planning lessons and strategies I will use in the classroom.* Survey question 6b: *What steps do you follow in designing lessons to accomplish necessary skills needed for student mastery on*

assessments? The following is a verbatim random sampling of three responses from three educators:

- Checking often throughout the lesson for understanding of concepts.
- The educator's [*sic*] put myself in the students' shoes and thinks about the kind of guidance the educator will need if educators were completing the assignment himself or herself.
- Start with a final assessment. Set up lessons to meet objectives of final assessment. Create mini-assessments along the way to get feedback on student skills.
- Educators use backward design to plan lessons. The educator knows the skills, assessments of the students' skills and plan accordingly.
- Educator demonstration, student practice, and more practice. Allow peer demonstration to class.
- Examine the objectives and then determine which activities or lessons could show mastery of that skill.
- The educator checks daily for evidence that students are mastering the concept.
- Type of assessment, time allowed, prior knowledge, and hands-on learning
- Try to ensure that my lessons and learning opportunities match how the assessments are presented.

Educators' responses suggested a planning sequence for designing lessons, student mastery based on learning opportunities, and a series of learning activities that match

assessments and the use of the backward design process. Some educators examined the big ideas or objectives in planning lessons.

Survey Statement 7a: *My students can apply or transfer what they are learning to different situations.* Survey question 7b: *How do your lessons make this possible?* The following is a verbatim random sampling of three responses from three educators:

- Communication Arts is inherently skills-based and applicable to many subject areas or learning situations. But, the educators also take great pride in connecting lessons to real-life scenarios so that students can relate better.
- Design questions through the lesson showing transfer of information and application whenever possible in daily life.
- Students are always given the opportunities throughout instruction and have discussions about concepts. Comparing and contrasting ideas and concepts are crucial.
- Lessons are designed with various activities to relate to varied situations, however, students have difficulty making the connection.
- Oral articulation of the skill, discussion of where these skills may be applicable in other situations.
- The lessons build the skills from basic depths of knowledge to the higher levels of thinking. For example from recognition to structured use to application in a new situation.
- Again all lessons are a real life situation that forces the student to think critically about cause and effect. Those Marzano strategies are important.

- Educators ensure that students are able to transfer learning by helping them make connections to self, text and the world.
- Educators are not always sure [*sic*]. Educators think more cross curricular connections need to be made.

Educators' understanding of making connections with students involved self, text and the world. Connecting real-life situations is critical in the capacity of transferring learning from one situation to another, resulting in ongoing student inquiry.

Survey statement 8a: *I am aware when my students are not only experiencing success during a lesson but also when they are experiencing difficulty.* Survey question 8b: *How do you organize lessons to know when students are experiencing success or failure in completing the lesson objectives?* The following is a verbatim random sampling of three responses from three educators:

- Through multiple means. Assessment (grading, etc); question/response; and observation. Also by designing lessons that make them "take the next step" on their own to show complete understanding.
- The educator gives check-up quizzes during the course of a unit. Sometimes, however, the educator is not always aware that students are having severe academic trouble unless they tell me.
- Educators praise students when they are doing well and if students don't understand something the educator stop [*sic*] until they get it. This sometimes requires re-teaching the lesson.

- The level of participation and ability to complete the tasks is a direct reflection of success and difficulty and they help me choose how to precede [*sic*] re-teach or move on.
- Educators constantly provide feedback with students. Educators are aware when students do not care and "I could set myself on fire," and student wouldn't look at me or pay attention!
- Lessons are designed to continue mixing skills learned with new skills. This way, students can see how they relate.
- By observing their positive and negative outcome.
- Through scaffolding each lesson objective, educators are able to observe and support students so they experience success on given task.
- Lessons are designed to encourage meaningful engagement and assessments are planned to show details of what students have learned.

Educators noted that students experienced success when they are given an array of opportunities to uncover the standards and lesson objectives. Educators used formative assessments as a means of checking for student understanding and performance. An important factor was educators' support in the completion of lesson outcomes.

Survey statement 9a: *My students are provided with learning benchmarks throughout each lesson*. Survey question 9b: *How do you establish benchmarks?* The following is a verbatim random sampling of three responses from three educators:

- This always depends on the content and the lesson designed. To say this happens in each lesson would be untrue. It happens often through the same methods as used in 8b.

- As skills build on previous skills, the skills to be mastered are known to the students and reviews of previous skills are done often.
- We may do checklists more than benchmarks, so that the student is allowed to move to new concepts before mastering others.
- Educators my [*sic*] big goals into small goals.
- Collaboratively with grade level partner. Educators identify what is most important for students to learn, and then design activities for each of the benchmarks.
- Unit planning and differentiation.
- Educators tell students the learning objective and then stop, review and check for understanding.
- Try to align lessons with GLEs and verifications, and items from MAP Data.
- By designing the lesson in "steps" to build upon prior knowledge working towards new knowledge. Each step is a benchmark of learning that will be utilized to reach the next "step" in the learning process.

Responses indicated that educators had little knowledge pertaining to establishing benchmarks throughout each lesson. Some answers support the use of alignment of lessons to GLEs, thereby acquiring new knowledge in a step-by-step process.

Survey statement 10a: *I provide assessment feedback to all of my students during the learning process*. Survey question 10b: *How do you like this?* The following is a verbatim random sampling of three responses from three educators:

- Educators think it is not something to like, it is essential. Educators cannot ask students to work harder if educators don't understand why and what students are doing isn't enough.
- Grading is time consuming, but necessary.
- This always works in correcting ALL student mistakes.
- Educators share scores with the students using formative as well as summative assessments.
- Verbally in class with "great job" to the class or individually. Our students welcome positive response on their class performance. They seek praise and encouragement! Get Excited! Celebrate class performance – less homework – more participation.
- Yes, educators walk and talk while students are working. It works.
- With oral and written feedback after each lesson/and sometime before.
- This is the educators' most effective tool. The one-on-one time educators spend help [*sic*] students clarify objectives and determine current skill levels.
- It is better to provide formative assessments for instant feedback.

The kind of understanding implied from these responses is that educators felt that feedback was important in the learning process. Feedback was viewed through grades, praise, homework, and non-specific feedback. Performance goals rather than learning goals appeared to be the over-arching mindset of the participants understanding of feedback.

Survey statement 11a: *Assessment is the same as feedback in my class. Assessment is not used to evaluate my students during a lesson.* Survey question 11b: *What do you think is the difference between assessment and evaluation?* The following is a verbatim random sampling of three responses from three educators:

- Assessment is a test and evaluation is providing feedback throughout the process.
- Assessment is a formal judgment of what a student has grasped; an evaluation is reflective feedback given to students to improve their work and increase their understanding.
- Assessment allows for conversation guided thinking and reflection. Evaluation looks for individual knowledge.
- Assessment is a measure of progress and knowledge. Evaluation is assigning a score or grade (value) to what he or she is able to do or knows.
- Educators don't recognize the difference. Maybe, evaluation is a bigger picture that students do independently.
- Educators assess students on what they have learned, and evaluate them on how well students perform in the classroom. (i.e., paying attention, asking questions, asking for help, etc.)
- The goal in assessment is to increase or improve classroom/student learning. Evaluation (i.e., papers, exams and quizzes). The difference between is simply this: Assessment in my opinion is a way that feedback is obtained on students' learning. Whereas, evaluation is feedback from

the educator to the student. This is done by giving the student a grade/reporting purposes. The assessment the educator is looking at the student's learning – how well is the student doing in my classroom.

- Assessment measures all against standards of success. Evaluation is more personal for each individual student.
- Assessment is a positive learning tool. Evaluation is punitive measurements.

Educators did not have a clear understanding of the distinction between assessment and evaluation. Some responses indicated assessment as being a formal judgment of evaluating student performance.

Survey statement 12a: *My curriculum is inclusive, that is, attainable by all students based on my instruction.* Survey question 12b: *How do you define "inclusive"?* The following is a verbatim random sampling of three responses from three educators:

- Attempting to go beyond just the curriculum and looking at the big picture as often as possible.
- Inclusive to include all students, all can be successful.
- Inclusive to me would mean modifiable lessons. Some support, more support, even more support to experience success.
- Educators make everything so easy that if people just pay attention students can succeed.
- Appropriate for all learners, but this is nearly impossible when students come to educators without the ability to write a complete sentence and educators suppose to teach students advance skills [*sic*].

- Students of all levels of learning abilities are able to succeed in my classroom. Assignments are adjusted to best meet the needs of each student.
- Tailor the instruction to include all students' needs. Modify the delivery of the lesson so that all can learn. This tool is helpful to the educator so that he or she can modify the effectiveness of their lessons.
- Educators take into account that students learn differently so educators try to provide different ways to reach each learner.
- All children can accomplish the tasks and goals outlined by the district curriculum.

Inclusive began with the educator's understanding that this can be achieved through modifying the lessons, providing different ways to reach each learner, including all students in the tasks and goals outlined by the district curriculum and the adjustment of assignments.

Survey statement 13a: *My lessons teach children/students to "learn how to learn" and "learn how to perform."* Survey question 13b: *How do you design for "learning how to learn"?* The following is a verbatim random sampling of three responses from three educators:

- Educators make sure to focus instruction not only on how to create the assignment, but also on how to break the directions down and go through them step-by-step.
- Educators use scaffolding for the beginning of the lessons and then provide more independent opportunities.

- Critical thinking problems. Letting them work it out themselves, not guiding them through every step.
- Educators have taught strategies for learning content and study skills that can be used at home. Educators used self-assessments so students can monitor their own progress.
- Educators daily explain the reasons why we do what we do and how things work. Educators teach learning strategies and techniques to apply in the future.
- Deductive and Inductive reasoning and provide examples. How do you know?
- Use a variety of strategies to promote deep understanding and active construction of meaning.
- "I don't understand the question"
- "I don't get it-I'm sorry!!"

Some educators believed that critical thinking through deductive and inductive reasoning helped to promote a deeper understanding, whereas, others did not understand the meaning of the question being asked.

Survey statement 14a: *My lessons are designed to ensure student learning.* Survey question 14b: *How do you "ensure" learning?* The following is a verbatim random sampling of three responses from three educators:

- Teaching at the level someone is at and moving on when mastery is achieved.

- Feedback/asking questions; building a relationship so students feel they can talk to the educator.
- Give opportunities to re-do assignments and quizzes, re-teach skills that were missed. Strategies are not successful if students are not.
- Student assessments, educator observation, constant feedback.
- Re-teach if necessary. Try new approach to material.
- Educators use a variety of techniques to address a variety of learning styles present in my classroom. Educators explain, re-explain, model, and provide one-on-one instruction to ensure learning.
- By attention to detail when designing lesson(s), look at the needs of the classroom (special population or learning style), immediate feedback, and review note taking
- Use ongoing assessments as feedback to check for understanding.
- By monitoring students progress

All educators seemed to have a clear picture of enduring understanding for student outcomes.

Answers to the Post-Treatment Survey Questions

The total number of educators who answered the survey questions was 44. Samples of the answers represent the educators' perceptions or beliefs. The post-treatment survey questions were administered in March 2009, 5 months after the pre-treatment survey questions in October 2008. Three 45-minute professional development sessions were conducted with discussing the principles of efficacy and backward design curriculum. For 9 weeks through feedback, educators re-designed

lessons using the backward design format linking assessments with instructional practices in classrooms. Best teaching practices were examined to measure success and identify when students truly understood what was taught. Table 8 illustrates the Likert scale numeric responses from the educators in the post-treatment survey questions. Each survey statement has a corresponding survey question. The answers to the survey questions are reported below Table 8.

Table 8

Educator Attitudes and Teaching Strategies in Post-Treatment Likert Scale Survey

Survey Statements	# of Responses (N)	Avg	Standard Deviation (SD)	Strongly Disagree (1) SD (%)	Disagree (2) D (%)	Neutral (3) N (%)	Agree (4) A (%)	Strongly Agree (5) SA (%)
1. I work with many students who exhibit this helplessness in learning concepts that I am teaching.	44	4.05	0.78	0	3 (6.8%)	3 (6.8%)	27 (61.4 %)	11 (25.0%)
2. Every student in my classroom(s) can achieve a high degree of academic success.	44	3.95	1.34	3 (6.8%)	6 (13.6%)	3 (6.8%)	9 (20.1 %)	23 (52.3%)
3. I frequently group students in my classroom according to their perceived abilities to grasp the concepts taught.	44	3.93	0.79	0	1 (2.3%)	12 (27.3%)	20 (45.5 %)	11 (25.0%)
4. I know exactly what my students will understand and be able to do as the result/goal of each lesson.	44	4.16	0.68	0	0	7 (15.9%)	23 (52.3 %)	14 (63.6%)

Survey Statements	# of Responses (N)	Avg	Standard Deviation (SD)	Strongly Disagree (1) SD (%)	Disagree (2) D (%)	Neutral (3) N (%)	Agree (4) A (%)	Strongly Agree (5) SA (%)
5. My students can provide evidence of their understanding throughout the lesson by demonstrating they can accomplish specific tasks.	44	4.48	0.55	0	0	1 (2.3%)	21 (47.7%)	22 (50.0%)
6. I think through my assessments before planning lessons and strategies I will use in the classroom.	44	4.32	0.80	0	2 (4.5%)	3 (6.8%)	18 (40.9%)	21 (47.7%)
7. My students can apply/transfer what they are learning to different learning situations.	44	4.14	0.80	0	1 (2.3%)	8 (18.2%)	19 (43.2%)	16 (36.4%)
8. I am aware when my students are not only experiencing success during a lesson, but also when they are experiencing difficulty.	44	4.55	0.50	0	0	0	(45.5%)	24 (54.5%)
9. My students are provided with learning benchmarks throughout each lesson.	44	4.25	0.84	0	1 (2.3%)	8 (18.2%)	14 (31.8%)	21 (47.7%)
10. I provide assessment feedback to all of my students during the learning process.	44	4.39	1.04	2 (4.5%)	0	2 (4.5%)	14 (31.8%)	26 (59.1%)
11. Assessment is the same as feedback in my class. Assessment is not used to evaluate my students during a lesson.	44	3.18	1.35	5 (11.5%)	5 (11.4%)	15 (34.1%)	12 (27.3%)	7 (15.9%)

Survey Statements	# of Responses (N)	Avg	Standard Deviation (SD)	Strongly Disagree (1) SD (%)	Disagree (2) D (%)	Neutral (3) N (%)	Agree (4) A (%)	Strongly Agree (5) SA (%)
12. My curriculum is inclusive, that is, attainable by all students based on my instruction.	44	4.23	0.96	1 (2.3%)	1 (2.3%)	3 (6.8%)	20 (45.5 %)	19 (43.2%)
13. My lessons teach children/students to "learn how to learn" and "learn how to perform."	44	3.95	1.08	2 (4.5%)	1 (2.3%)	3 (6.8%)	27 (61.4 %)	11 (25.0%)
14. My lessons are designed to ensure student learning.	44	4.14	0.93	1 (2.3%)	0	6 (13.6%)	21 (47.7 %)	16 (36.4%)
15. The success of my curriculum and my instructional strategies is determined by my student's success.	44	4.00	1.20	2 (4.5%)	3 (6.8%)	6 (13.6%)	14 (31.8 %)	19 (43.2%)
Totals:	44							

Note. N = 44 respondents.

Survey statement 1a: *I work with many students who exhibit helplessness in learning concepts that I am teaching.* Survey question 1b: *Why do you believe that they (students) exhibit this helplessness and where do you think it originates?* The following is a verbatim random sampling of three responses from three educators:

- Educators feel that all students can learn, but some got the message somewhere that they could not. It's the educator's job to show students can learn.
- Educators think many students who exhibit helplessness have either never experienced success in school so they give up or they do not see the benefits of working toward academic success.

- Educators believe it is a learned helplessness that is fostered from a young age by parents, educators, and peers. No one is forceful or diligent enough to ensure all students learn to push forth effort.
- Educators believe that children learn helplessness when they are given materials and instructions that are out of their zone of proximal development.
- Confidence level too low.
- Educators believe students do this because they haven't been given opportunities to be risk-takers.
- Educators believe that they exhibit this helplessness because they don't care and their education has no value to them. Educators think it originates from home, and the value of education is not reinforced.
- Most students can do the work, but choose not to. Educators truly believe that this behavior originates at home. It is true that children rise to the occasion if expected to do so. It cannot be one sided.
- There are several reasons for the behavior. When describing students, educators think that some students lack confidence, drive and higher expectations mainly from parental figures.

Educators viewed the students' lack of experiences as a factor in promoting helplessness. The educators further stated that a student's confidence level was low due to the lack of opportunities, the value of education reinforced by the home, materials and instruction outside of their ZPD, and lack of effort.

Survey statement 2a: *Every student in my classroom(s) can achieve a high degree of academic success*. Survey question 2b: *Why do you believe that this is or is not possible?* The following is a verbatim random sampling of three responses from three educators:

- It is possible. While some students may excel in the classroom setting, others need alternatives, but all of them can grow and learn from the classroom experience.
- The vast majority of students have the intellect and/or social skills to master the skills and concepts taught. Some students have more or less motivation, access to resources, or background experience that prepares students for class.
- Student academic success is dependent on both the students' efforts and ability is coupled with the educators' ability to use best practices to reach the individual.
- Everyone has the ability and effort to succeed, incrementally, higher and higher.
- Curriculum Design and instruction delivery guided by the school district and Department of Education ensures that success is possible.
- It is possible if you provide the scaffolding needed to move along their understanding of concepts, along with multiple opportunities to try and try again. Success breeds more success.

- Educators believe that all students can reach some form of academic success, but every student has different abilities that can create limitations or allow students to excel.
- At what level is it considered to be a "high degree of academic success"? Most of the time in the classroom setting educators is [*sic*] trying to get the students from one level to the next. If a student starts at a low level, on what are educators measuring academic success?
- Educators believe students learn what they want on what interests them. Students are no different than us. Academic success is relative because schools offer many courses and educators believe a student can achieve well in something; one just needs to help them find their niche.

It was noted again that educators viewed the student as being responsible for their own learning rather than the educator facilitating or supporting the learning process for academic success. Some educators believed that academic success was contingent upon curriculum design and instructional delivery mandated by the district and state. Whereas, others believed that scaffolding a student would provide enduring understanding of concepts and breed more success.

Survey statement 3a: *I frequently group students in my classroom according to their perceived abilities to grasp the concepts taught.* Survey question 3b: *How does grouping assist you with increasing achievement?* The following is a verbatim random sampling of three responses from three educators:

- Educators always mix ability levels, students teaching students is a strong reinforcement tool, and that peer and interaction often helps communicate difficult concepts.
- Maximize student achievement scores. Educators teach almost exclusively with groups and create competition to motivate.
- By grouping students with varying abilities this allows lower level ability level students to be grouped with higher ability a student which increases overall student performance.
- An educator can meet the students where students are and monitor students more closely in groups.
- Specific skills can be taught to specific students. Sometimes students can teach each other in groups. This shows students "know."
- Grouping allows you to target specific needs or skills and to provide more immediate feedback which is critical to improving achievement. However, using data as a basis for grouping can be more reliable than perceptions of ability.
- Students who are high achievers are able to impart knowledge and skills to students who are struggling.
- Sometimes, it allows students who wouldn't normally "get it" to actually grasp the concept and show achievement towards an objective.
- Grouping allows students to feel comfortable asking questions, help relate subject matter to the most current form of media (movies, videos,

> or music) and provide an opportunity for students' [*sic*] to focus on specific deficiencies.

Responses to this question did not vary from the pre-survey. Educators still felt that grouping was an important tool to improving academic achievement. Educators perceived grouping of varying abilities increased the overall student performance, allowing higher achievers to impart knowledge and skills to students who are struggling in heterogeneous grouping.

Survey statement 4a: *I know exactly what my students will understand and be able to do as the result or goal of each lesson*. Survey question 4b: *How do you know this?* The following is a verbatim random sampling of three responses from three educators:

- Educators use the board expectations of Blackboard Configuration, Do Now, Goals, and Assignment.
- Educators never are sure what the students know until educators review what has been covered with students. These reviews have to be done frequently and throughout the material that is being covered.
- Mostly, educators change lessons every year to improve learning.
- Educators start with the end in mind.
- By working backwards from where students are to where educators want them to go.
- With extreme rigor and ongoing common assessments.
- The majority of the time educators assume that all of the students will understand the lesson. When checking for understanding, educators often

get great participation and correct answers. The problem comes when students are asked to provide information learned in the form of exams.

- When educators plan a lesson, educators know where errors may occur and highlight the mistakes. Educators also include lots of practice.
- Based on prior assessments, skills inventories, and observations.

The responses indicated educators are more conscious than the pre-treatment survey of looking for the big ideas met by the students. Educators used rigor, common assessments and backward design as a means for checking for enduring understanding.

Survey statement 5a: *My students can provide evidence of their understanding throughout the lesson by demonstrating they can accomplish specific tasks.* Survey question 5b: *How do you design the lesson to ensure students will be able to demonstrate success in completing the given task?* The following is a verbatim random sampling of three responses from three educators:

- Following the backward design method so that tasks align with the overarching goals of the instruction.
- Observe kids before instruction in order to re-teach, and then assessments must be aligned to what was taught.
- Frequent reviewing throughout allows me to see areas where students may be struggling and provide additional assistance that will increase later success.
- Understanding by Design (UBD).
- Educators design lessons with the end in mind. What skills will educators be assessing?

- By giving ongoing questions and feedback.
- Educators design each lesson in small increments. Some of the challenged learners need more time to grasp the concept where the other students follow along well.
- Educators design a lesson that incorporates the skills and subject matter with reinforcements to ensure that students will be successful.
- Educators give lessons to students in smaller increments.

The educators in these answers indicated a major shift in their understanding of backward design. Educators saw the need for a deeper knowledge of understanding for students rather than a superficial knowledge base. The educators' answers specifically provided steps that assisted them in knowing the students understood the learning task. Some of the comments focused on UBD, lessons designed with the end in mind, and skills needed to assess student learning. Other comments related to performance goals, designing lessons in small increments, and providing support through reinforcements and re-teaching.

Survey statement 6a: *I think through my assessments before planning lessons and strategies I will use in the classroom.* Survey question 6b: *What steps do you follow in designing lessons to accomplish necessary skills needed for student mastery on assessments?* The following is a verbatim random sampling of three responses from three educators:

- Educators always make the test and then plan the lesson.

- After completing a graduate course in using Backward Design, educators began implementing this technique into the planning and found it to be very helpful.
- Reverse teaching based upon the test. Then construct lessons that will focus in on the skills educators will assess and want students to learn.
- What is the desired outcome/ the big idea; start with what the students know; and expand knowledge of known, make connections to self, text and the world.
- By using the UBD format, clarifying the learning, collecting evidence to achieve desired results, and teaching learning to help students achieve success.
- Understand the outcome and then create and follow the steps to achieve that outcome.
- Educators normally look at goals (GLEs), and pacing guides helping in lessons design getting students to score at the mastery level on assessments.
- Lecture, inquiry, question and answer, guided practice and independent practice.
- Start with the backward design. What is the outcome? What are the essential questions?

The educators provided the researchers with steps in designing the lesson based on the consideration of using the UBD format. One educator out of the sampling had extensive knowledge of the backward design concepts and had implemented it in his or her lesson

planning and found it to be helpful. The remainder of educators gained an understanding and importance of designing lessons for student mastery.

Survey statement 7a: *My students can apply or transfer what they are learning to different situations*. Survey question 7b: *How do your lessons make this possible?* The following is a verbatim random sampling of three responses from three educators:

- By focusing on the "big picture," educators intentionally design units with tasks that are meant to transfer skills to different authentic situations (i.e., writing tasks, research).
- Educators constantly seem to be re-teaching concepts and incorporating what students learned with new ideas in lessons.
- When teaching concepts, educators try to relate the subject matter to real life situations, which will help the student knowledge be meaningful and long lasting.
- Discussion, modeling, time to practice authentic tasks.
- Educators' lessons include prior learned skills to ensure some level of success, while offering newer or advanced methods to build on. The new lesson will demonstrate how to use learned skills and use them in different ways to expand creativity and confidence.
- Providing multiple experiences to use skills in and provide feedback for growth.
- When teaching, educators relate lessons to everyday situations to show students similarities and patterns for application in everyday situations.

- This is a struggle. Students are not always connecting independently. Interdisciplinary lessons would be great, too.
- Educators try to show multiple examples of how to apply the techniques they are learning.

Educators believed that building on a student's prior knowledge was essential to maintaining a focus on the larger concepts taught and the skill for corrective teaching. The educators indicated a relationship between student responses and the outcomes, which will diminish the possibility of learned helplessness and having students feel their efforts are not important.

Survey statement 8a: *I am aware when my students are not only experiencing success during a lesson but also when they are experiencing difficulty*. Survey question 8b: *How do you organize lessons to know when students are experiencing success or failure in completing the lesson objectives?* The following is a verbatim random sampling of three responses from three educators:

- Do frequent checks to make sure students understand each part of the lesson.
- Educators make time to work one-on-one through 30-second conferences. Speaking to kids, even briefly, can give educators an idea of how students are doing as long as students are honest.
- Educators create opportunities for the students to seek help from other students, which builds community and trust in the classroom.
- Through observations, effective feedback, asking questions, encouraging students to make predictions, drawing conclusions and summarization.

- By providing opportunities for students to get multiple feedback; self-checks, peer evaluation, educator checks during the course of the lesson will help you to know where students are in their understanding.
- Educators work individually with students, scaffolding up or down where necessary, so students experience success.
- Educators try and develop an assessment for each concept; students' success or failure in learning the objectives comes from students' scores on the assessments.
- As the lesson is going on, if educators have positive dialogue and positive interactions, educators feel that the students are actively learning. If it is the opposite, then educators worry about whether the content and fit is being attained (exams).
- During question and answer, independent practice and class discussions.

The responses from the pre survey to the post survey revealed the same educator understanding through providing multiple opportunities to students for feedback. The use of formative assessments and educator support were essential to organizing a lesson. There was clear indication that building communities and trust in the classroom assisted educators in knowing when students experienced success or failure in completing lesson objectives. One educator commented on speaking with students briefly as helping to build community and trust in the classroom. Another educator felt that using positive dialogues and positive interactions will mobilize effective measures.

Survey statement 9a: *My students are provided with learning benchmarks throughout each lesson*. Survey question 9b: *How do you establish benchmarks?* The following is a verbatim random sampling of three responses from three educators:

- Based on agreed upon objectives from PLCs and district curriculum.
- Students are included in the lessons.
- Educators create obvious spaces in lesson design, each benchmark usually being a test or other types of assessments.
- Educators give "stepping stones" of completion to the whole of the project. Each step is a mastery in itself that will help achieve the overall goal.
- Use of the GLEs.
- Lessons are designed to clarify the academic strands and their standards. The benchmark will identify what the student, based on his or her level, and should be able to do.
- Depending on the objective, educator let students know what need to be known [*sic*] in order to complete the next objective.
- Educators write the benchmarks/objectives for the chapter on the board and go over them with the class prior to starting the chapter. Educators indicate to the class when finished covering the material/objectives so students are aware of the chapter expectations.

Educators used the district and state benchmarks as a foundation, but they did not have a clear understanding of how to establish benchmarks. The educators understood how to use the benchmarks, but most did not address the question completely.

Survey statement 10a: *I provide assessment feedback to all of my students during the learning process*. Survey question 10b: *How do you like this?* The following is a verbatim random sampling of three responses from three educators:

- Educators meet one-on-one with students to ensure genuine feedback, which works very well based on educators' prior experiences.
- Educators check students' work for understanding and re-teach the lesson if possible.
- Educators like this because it allows the educator to see where students may need additional support.
- If it benefits the students, it doesn't matter if the educators like it.
- Through continuous communication, asking and answering questions. Respond to student feedback and look for ways to help align students' expectations with teaching goals and objectives.
- Feedback is important to the student because it helps students to understand what has been mastered and what students still need to work on.
- Educators review all forms of assessment to ensure an additional opportunity for student comprehension.
- Educators believe that the toughest lessons are learned through mistakes and failures. Educators are sure to go over the exams with students and correct the mistakes students have made.
- After each assessment, the class reviews items missed. Additionally, educators might write notes to students about errors.

Post-treatment survey questions results revealed that educators liked feedback and felt it was crucial to continuous improvement. Feedback was informal and provided in a timely manner. One educator wrote notes for improvement on students papers as a means of helping the students improve.

Survey statement 11a: Assessment is the same as feedback in my class. Assessment is not used to evaluate my students during a lesson. Survey question 11b: What do you think is the difference between assessment and evaluation? The following is a verbatim random sampling of three responses from three educators:

- Assessment means to assess the value of and evaluation means to ascertain values and assign numeric values.
- Assessments are ongoing and help to determine what the student still needs help with or what students have learned. Evaluation is the end result.
- Assessment is usually done at the completion of the unit of study and evaluation is done throughout.
- Assessment is determining where students are in the learning process and evaluation determines the degree of learning that has taken place.
- Assessment is used to guide students through the learning process. Evaluation is to measure where the student is at a certain point (benchmark).
- Assessment is formative, ongoing to improve learning. Evaluation is summative. Provide information to determine if the student learned what was supposed to be learn based on instruction.

- Assessment is what students have learned based on educators' feedback. Evaluation is the measurement tool to measure progress.
- Educators think the main difference between the two would be that assessment is the tool used to measure a level of content. The evaluation then comes from the "standard" or "level" a student should be on according to a specific age or grade level.
- Evaluation is a diagnostic study of a students' [*sic*] condition, and the students overall performance and growth (personal). Assessments are a regular tool given to test students' progress usually given an assigned value.

Educators had an in-depth understanding of the difference between assessment and evaluation as cited in the responses.

Survey statement 12a: *My curriculum is inclusive, that is, attainable by all students based on my instruction*. Survey question 12b: *How do you define "inclusive"?* The following is a verbatim random sampling of three responses from three educators:

- It means attainable and accessible by all students.
- Reach all students.
- Inclusive means all.
- Includes all students on all levels on learning and development.
- Inclusive is student centered. Students work together, learning is meaningful, hands-on, and diverse. It offers peer interaction and role models and it is designed to enhance learning for all students.

- It addresses the needs of all students no matter where students are on the spectrum.
- Educators try to design projects that will ensure success for all students if students follow all instructions and procedures given.
- Inclusive for an educator, means to design a lesson that allows all students to be able to follow and gather information for retention.
- Educators include a wide variety of learning styles in each lesson.

Educators indicated that inclusive means to be accessible, engaging, and meaningful in order to reach all students.

Survey statement 13a: *My lessons teach children/students to "learn how to learn" and "learn how to perform."* Survey question 13b: *How do you design for "learning how to learn"?* The following is a verbatim random sampling of three responses from three educators:

- By using backward design.
- Students should realize what works best for them, so educators offer a variety of instruction and learning so the students will learn how to learn.
- Educators do not just provide students with rote information, educators encourage students to seek knowledge out and be a part of the process.
- Students learn how to think critically about materials presented in class. Through conversation educators take the text apart then put it back together so that the whole picture is complete, questioning, non-linguistic, and dialogue aid in teaching students how to learn.

- Modeling, instruction across content areas can be difficult when tied to basal.
- Through the incremental theory of intelligence.
- Each lesson is modeled for students. Educators know exactly what is expected and how each assignment should look; what should be included.
- Providing direct instruction in strategies; sometimes more strategies focus on content especially in the beginning.
- Educators try to give directions in step by step form for preliminary projects, and as the class progress through the units put more of the problem solving onto the students.

Educators indicated that incremental theory, conversations that uncover the curriculum allowing children to perform linguistically and non-linguistically, learning by doing and the use of backward design assisted educators in focusing on the big ideas and performance goals.

Survey statement 14a: *My lessons are designed to ensure student learning.* Survey question 14b: *How do you "ensure" learning?* The following is a verbatim random sampling of three responses from three educators:

- Equity across the board/but this is not always true, the reality is that some students may not learn and educators have to go back and do it again.
- Creating the opportunity for trial and error, creating a safe environment for learning, and making sure to touch base with each student.

- Write out expected outcomes. Returns paper that day or the next and give short quizzes.
- Educators keep lesson within student's ZPD, but also stretch students to expand upon knowledge.
- Higher interest, meaningful activities and engagement.
- Educators use the incremental theory which corresponds to "think you can – work hard get smart."
- The conflict with this is that educators are sure students are learning. There is an obvious marked progress through performance assessment but grades are not reflective. Sometimes student engagement is also a factor considered when determining whether curriculum and instruction is successful.
- Repetition, drill, ask questions, repeat again, and educators assess the concepts.
- Educators allow multiple attempts at acquiring objectives. Students can keep working until attaining the desired level of mastery.

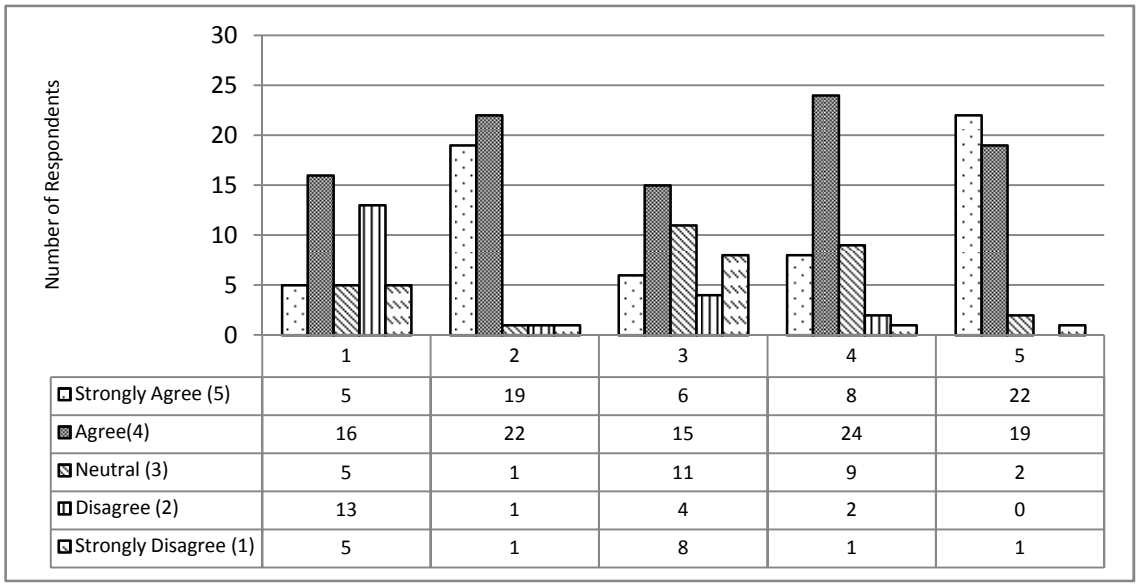
The responses to this question varied from lessons within the student's ZPD, to returning papers the next day or giving a short quiz to assess learning. Several responses focused on high interest engagement and incremental theory to create opportunities for trial and error. Appendices B (Figure B3), H, and I contain sample backward design lessons from the educators who participated in the pre- and post-treatment survey. The data that is outlined in Figures 1 and 2 exhibits the observation points of the first five Likert scale survey responses.

- The post-treatment survey scores for statement 1 indicated a larger number of educators were convinced that many students exhibit helplessness in learning concepts.
- The pre-treatment survey scores for statement 2 showed an increase in the number of educators who believed students in class can achieve at higher levels. In the post-treatment Likert scale survey, some educators' attitudes changed. However, their beliefs did not support the hypothesis as stated.
- The post-treatment survey scores for statement 3 showed a greater number of educators group students according to perceived abilities to assist in grasping concepts.
- The post-treatment survey scores for statement 4 indicated that a greater number of educators knew what students understood and should be able to do as a result of each lesson.
- The results of the pre- and post-treatment Likert scale survey for statement 5 did not show a major shift in the educators' belief that students share evidence of their understanding of lessons through demonstration of task completion.

First Five Statements (1–5)

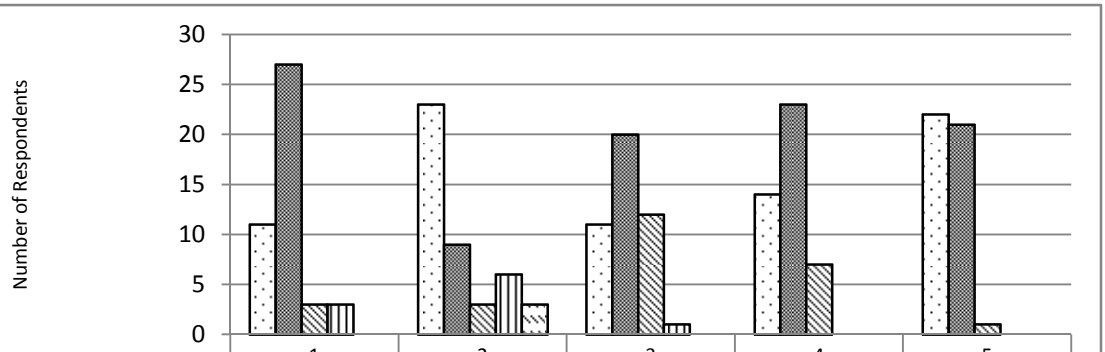
Overall, educator selections fell within the *agree* to *strongly agree* categories, with increased values on the post-treatment survey (see Appendix E). The increase in the post-treatment survey scores could be related to the training sessions held with participants. The first five statements are: (1a) *I work with many students who exhibit*

helplessness in learning concepts that I am teaching, (2a) *Every student in my classroom(s) can achieve a high degree of academic success,* (3a) *I frequently group students in my classroom according to their perceived abilities to grasp the concepts taught,* (4a) *I know exactly what my students will understand and be able to do as a result or goal of each lesson,* and (5a) *My students can provide evidence of their understanding throughout the lesson by demonstrating they can accomplish specific tasks.*



	1	2	3	4	5
Strongly Agree (5)	5	19	6	8	22
Agree(4)	16	22	15	24	19
Neutral (3)	5	1	11	9	2
Disagree (2)	13	1	4	2	0
Strongly Disagree (1)	5	1	8	1	1

Figure 1. Pre-Treatment Survey: First Five Items.
Note. N = 44 respondents.



	1	2	3	4	5
Strongly Agree (5)	11	23	11	14	22
Agree(4)	27	9	20	23	21
Neutral (3)	3	3	12	7	1
Disagree (2)	3	6	1	0	0
Strongly Disagree (1)	0	3	0	0	0

Figure 2. Post-Treatment Survey: First Five Items.
Note. N = 44 respondents.

The data that is outlined in Figures 3 and 4 exhibits the observation points of the middle five Likert scale survey responses.

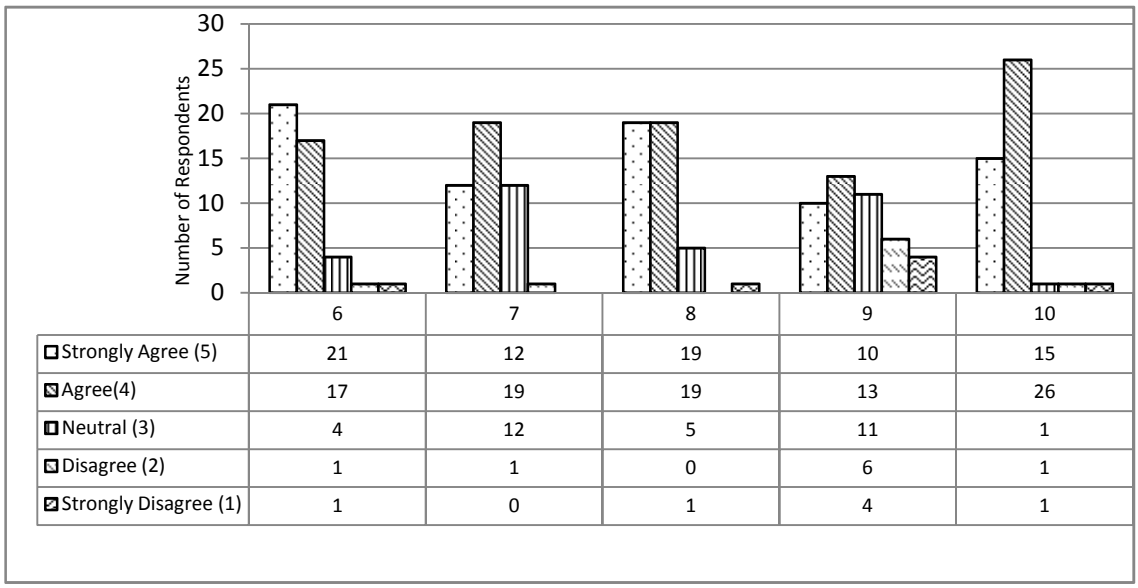
- The results of the pre- and post-treatment survey scores for statement 6 revealed educator responses were mutual in their thinking and attitudes towards using assessments before planning lessons and strategies to use in the classroom.
- The post-treatment survey scores for statement 7 indicated a slight increase in educator attitudes and thinking towards students applying/transferring learning to different situations.
- The post-treatment survey scores for statement 8 indicated a greater number of educators were aware when students were experiencing and

exhibiting a high or low level of self-efficacy during a lesson or having difficulties.

- The post-treatment survey scores for statement 9 showed a greater number of educators were providing students with benchmarks.
- The results of the pre- and post-treatment Likert scale survey for statement 10 revealed participants had a strong belief that providing assessment feedback was an important tool in enhancing the learning process.

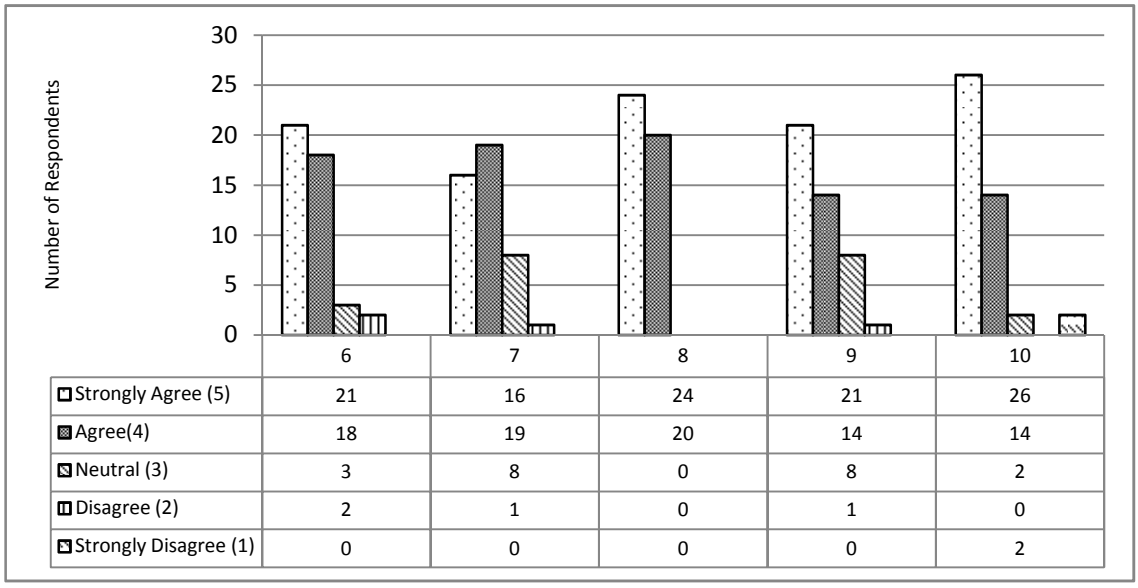
Middle Five Statements (6–10)

Overall, based on educator selections on the post-treatment survey scores, more responses favored the *agree* and *strongly agree* categories (see Appendix E). The middle five items are: (6a) *I think through my assessments before planning lessons and strategies I will use in the classroom*, (7a) *My students can apply or transfer what they are learning to different learning situations,* (8a) *I am aware when my students are not only experiencing success during a lesson but also when they are experiencing difficulty,* (9a) *My students are provided with learning benchmarks throughout each lesson*, and (10a) *I provide assessment feedback to all my students during the learning process*.



	6	7	8	9	10
Strongly Agree (5)	21	12	19	10	15
Agree(4)	17	19	19	13	26
Neutral (3)	4	12	5	11	1
Disagree (2)	1	1	0	6	1
Strongly Disagree (1)	1	0	1	4	1

Figure 3. Pre-Treatment Survey: Middle Five Items.
Note. N = 44 respondents.



	6	7	8	9	10
Strongly Agree (5)	21	16	24	21	26
Agree(4)	18	19	20	14	14
Neutral (3)	3	8	0	8	2
Disagree (2)	2	1	0	1	0
Strongly Disagree (1)	0	0	0	0	2

Figure 4. Post-Treatment Survey: Middle Five Items.
Note. N = 44 respondents.

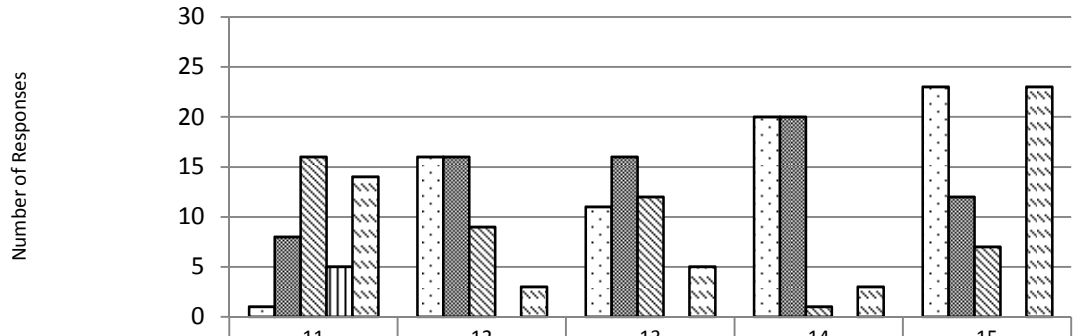
The data that is outlined in Figures 5 and 6 exhibits the observation points of the last five Likert scale survey responses.

- The results of the pre- and post-treatment survey scores for statement 11 revealed educators concurred that there remained uncertainty in understanding the difference between assessment and feedback. Also, there was a lack of clarity on whether assessments should or should not be used to evaluate students during a lesson.
- The post-treatment survey scores for statement 12 identified a larger number of educators who believed that curriculum could benefit students based on classroom instruction after the treatment.
- The post-treatment survey scores for statement 13 indicated that researchers training sessions could have impacted the change in educators' responses. Selecting neutral on the pre survey indicated a lack of understanding. Whereas, on the post-treatment survey educators understanding increased in reference to teaching students to "learn how to learn" and "learn how to perform."
- The pre-treatment survey scores for statement 14 showed a greater number of educators believed lessons were designed to ensure student learning, whereas the post-treatment survey scores showed a greater number selected neutral which leads the researchers to infer that educators could be reflective in their teaching practices.

- The results of the pre- and post-treatment Likert scale survey for statement 15 resulted in marginal changes in terms of the success of curriculum and instructional strategies being determined by student success.

Last Five Statements (11–15)

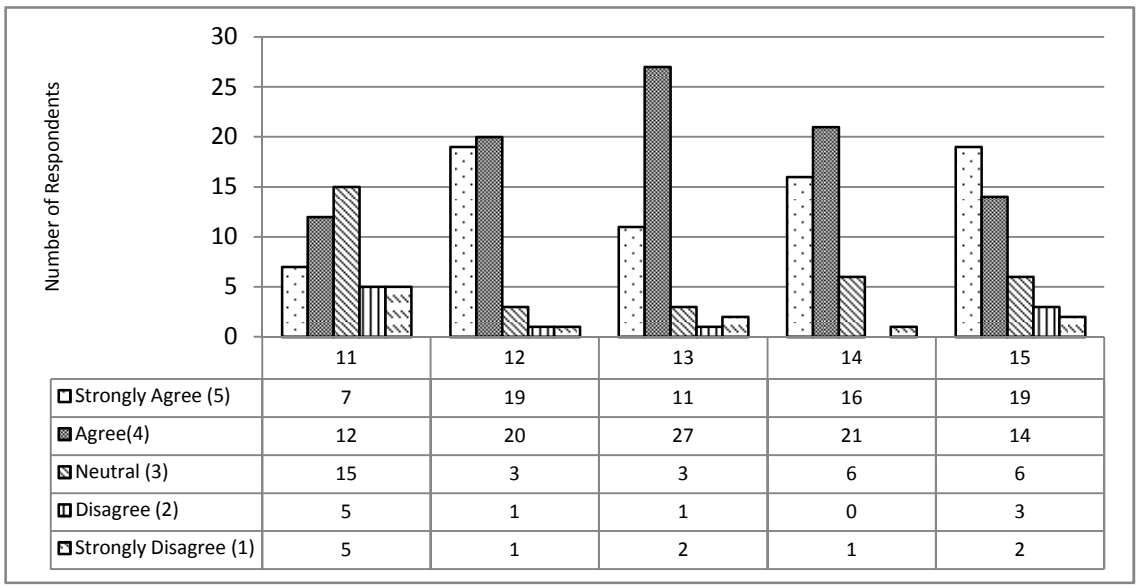
The comprehensive data analysis for the post-treatment survey scores of all educators clearly indicated the rating of *agree* to *strongly agree* in respect to ensuring that every student learns in a supportive and productive environment. The last five items are: (11a) *Assessment is the same as feedback in my class. Assessment is not used to evaluate my students during a lesson,* (12a) *My curriculum is inclusive, that is, attainable by all students based on my instruction,* (13a) *My lessons teach children/students to "learn how to learn" and "learn how to perform,"* (14a) *My lessons are designed to ensure student learning*, and (15a) *The success of my curriculum and my instructional strategies is determined by my students' success.*



	11	12	13	14	15
Strongly Agree (5)	1	16	11	20	23
Agree(4)	8	16	16	20	12
Neutral (3)	16	9	12	1	7
Disagree (2)	5	0	0	0	0
Strongly Disagree (1)	14	3	5	3	23

Figure 5. Pre-Treatment Survey: Last Five Items.

Note. N = 44 respondents.



	11	12	13	14	15
Strongly Agree (5)	7	19	11	16	19
Agree(4)	12	20	27	21	14
Neutral (3)	15	3	3	6	6
Disagree (2)	5	1	1	0	3
Strongly Disagree (1)	5	1	2	1	2

Figure 6. Post-Treatment Survey: Last Five Items.
Note. N = 44 respondents.

Summary

According to Ometani, "If we individually make the effort to ensure that each child is known in our system, our organization will be a caring learning community that knows and lifts each child" (as cited in Blankstein, 2004, p. 97). The researchers found that educators gained a better understanding of the principles of efficacy and backward design curriculum as a result of participating in this study. Some educators had prior knowledge and helped the researchers validate the hypothesis. In some cases, the responses were minimal in the educators' belief systems and attitudes about efforts to change educator attitudes and teaching strategies to impact student achievement. As noted from the responses to the surveys, an increase in educators' understanding of how students learn using the best teaching strategies to impact student achievement remained a challenge. The researchers noted a superficial knowledge in how educators design

lessons, know when students truly understand, and utilize effective teaching strategies to impact student achievement.

According to Bernhardt (2000),

Our goal is not to look for the proverbial significant differences. Instead, we want to discover and uncover information that will help us understand the data, and the impact of our efforts on our students, determine appropriate interventions and their timing, and to know how to improve everything we do. (p. 66)

Chapter Five – Conclusion and Discussion

The results of this study have not conclusively proven the effectiveness of efforts to change educator attitudes and teaching strategies based on the use of backward design curriculum and the principles of efficacy. The hypothesis was, An understanding of the principles and strategies of efficacy and backward design curriculum will result in a positive change in educator attitudes and instructional strategies as measured by Likert scale survey results. The research question was, How do efforts to change educator attitudes and teaching strategies through professional development focused on the use of backward design curriculum and the principles of efficacy affect educator beliefs and attitudes, as measured by written open-ended questions? The literature reviewed was (a) achievement gap, (b) narrowing the achievement gap, (c) educator attitudes, (d) lesson design, (e) student understanding, (f) understanding by doing, and (g) effective teaching strategies.

The research showed that adding three professional development sessions focusing on the principles of efficacy and backward design curriculum of 45 minutes each over a period of 9 weeks, resulted in educators gaining more knowledge of the principles of efficacy and backward design curriculum, but it did make a difference in their use of best teaching strategies to impact student achievement and educator attitudes. Blankstein (2004) noted “In times of great challenge or dynamic change, such as schools are now experiencing, organizations must develop cultures that are significantly different than those needed in stable times. Schools, like most organizations, tend to seek consistency and equilibrium” (p. 7).

Only when an organization's structure and staff are aligned with the school vision can productive change happen. What is missing in most cases is a concrete, detailed vision statement that describes what the organization will look like when operating at its best to accomplish its desired purpose, as well as a systematic process called systematic alignment. People must be involved; they must know what the plan for change contains. People must see that their leaders are serious about their organization's new vision. They must receive continued organizational support for change if they are to develop ownership with the desired change (Fullan, 2002). Building awareness and understanding is very beneficial among the educators because that must happen before they make behavior changes. Educators must focus on improving student achievement in order to reduce the achievement gap through an educational reform. The educator's commitment should be long term. Shaughnessy (as cited in Protheroe, 2008) noted educators who value opportunities to create an awareness and understanding as the first step toward a paradigm shift set high goals, are persistent, and try something different when one approach is found lacking.

Educator beliefs and attitudes among educators that identify the best research-based instructional strategies with a high correlation for enhancing achievement for all students was the focus for Alice Aldridge of Elementary School A. Research findings from the study determined if educators' attitudes had or had not improved as a result of being exposed to the principles of efficacy and backward design curriculum.

Beliefs and attitudes among educators that identified the best research-based instructional strategies with a high correlation for enhancing achievement for all students were charted in the first, middle, and last five qualitative pre-and post-treatment Likert

scale survey comments (see Figures 1–6). The answers to question 1b (*Why do you believe that they exhibit this helplessness and where do you think it originates?*), question 4b (*How do you know this?*), and question 5b (*How do you design the lesson to ensure students will be able to demonstrate success in completing the given task?*) in both pre- and post-treatment findings revealed that educator attitudes and beliefs toward student helplessness originated from several factors. From the random sampling of the answers to question 1b (*Why do you believe that they exhibit this helplessness and where do you think it originates?*), it was readily apparent that educators believed or perceived that several factors could account for why students exhibited this helplessness: the home environment, low student and educator expectations, academic failure, poor educator preparation within a student's zone of proximal development, lack of or low student efficacy, and a need for accountability or ownership from all stakeholders to ensure students' learning. From the random sampling of the answers to question 4b, (*How do you know this?*), it was readily apparent that the educators felt they knew when their students had a greater understanding of the lesson objectives. The answers to this question on the survey suggested that educators had some prior knowledge of the backward design curriculum and the significance of assisting their students in succeeding academically. Overall, the educators felt that setting explicit learning goals for the desired outcome was a major focus. They further stated that the need to monitor student success through formative assessments, corrective teaching, rigor, and keeping the learning objective in mind would provide the educator a path in checking for academic understanding. However, from the random sampling of the answers to question 5b (*How do you design the lesson to ensure students will be able to demonstrate success in*

completing the given task?), it was readily apparent that this occurred through timely feedback, student observations, teaching of strategies, reviewing lesson objectives, and ongoing assessments. Summary analysis pertaining to educator beliefs and attitudes for the first, middle and last random answers, when comparing to the pre- and post-treatment surveys are shown in Table 9.

Table 9

Educator Attitudes and Teaching Strategies: Pre- and Post-Treatment Surveys Compared

		Pre-Avg.	Post-Avg.	Difference
1. I work with many students who exhibit this helplessness in learning concepts that I am teaching.	#1	3.05	4.05	+1.00
2. Every student in my classroom(s) can achieve a high degree of academic success.	#2	4.30	3.95	-0.35
3. I frequently group students in my classroom according to their perceived abilities to grasp the concepts taught.	#3	3.14	3.93	Improved But Still Neutral
4. I know exactly what my students will understand and be able to do as the result/goal of each lesson.	#4	3.82	4.16	+0.34
5. My students can provide evidence of their understanding throughout the lesson by demonstrating they can accomplish specific tasks.	#5	4.36	4.48	+0.12

		Pre-Avg.	Post-Avg.	Difference
6. I think through my assessments before planning lessons and strategies I will use in the classroom.	#6	4.25	4.32	+0.07
7. My students can apply/transfer what they are learning to different learning situations.	#7	3.95	4.14	+0.19
8. I am aware when my students are not only experiencing success during a lesson, but also when they are experiencing difficulty.	#8	4.23	4.55	+0.32
9. My students are provided with learning benchmarks throughout each lesson.	#9	3.36	4.25	+0.89
10. I provide assessment feedback to all of my students during the learning process.	#10	4.18	4.39	+0.21
11. Assessment is the same as feedback in my class. Assessment is not used to evaluate my students during a lesson.	#11	2.32	3.18	Improved, But Now Neutral
12. My curriculum is inclusive, that is, attainable by all students based on my instruction.	#12	3.89	4.23	+0.34
13. My lessons teach children/students to “learn how to learn” and “learn how to perform.”	#13	3.52	3.95	+0.43
14. My lessons are designed to ensure student learning.	#14	4.16	4.14	-0.02

		Pre-Avg.	Post-Avg.	Difference
15. The success of my curriculum and my instructional strategies is determined by my student's success.	#15	4.18	4.00	-0.18

Note. N = 44 respondents. Compared survey responses on Likert scale for pre and post treatments.

Summary of the quantitative analysis for the pre- and post-treatment Likert scale survey for statement 1a (*I work with many students who exhibit helplessness in learning concepts that I am teaching*), indicated an improvement in educator beliefs and attitudes from an average gain in the *neutral* area 3.0 < to > 4.0, with a positive difference of +1.0% agreement with the statement. Educators saw a higher need of agreement in the development of student efficacy within their classrooms. Results from statements 4a (*I know exactly what my students will understand and be able to do as a result or goal of each lesson.*), and 5a (*My students can provide evidence of their understanding throughout the lesson by demonstrating they can accomplish specific tasks.*), both indicated a change in educator beliefs and attitudes. Analysis indicated a marginal increase for statement 4a, of a +0.34% difference from pre comments of 3.82% to post comments of 4.16% gain in educator attitudes toward student's understanding. However, statement 5a had a pre-average > 4.0 and a post average of 4.48% with a difference of +0.12% for stronger support of the statement that students are able to provide ongoing evidence of the lesson (see Table 9).

The assistant principal of High School A, collaborator Anissa Harris, viewed educator's behavior in survey statements 1a, 3a, and 4a as indicating that educators felt

that their input into students' classroom experiences changed when they became more aware of lesson design. Educators' behavior showed a slight movement from blaming the students to more educator accountability.

The principal of High School B, collaborator Gwen Grooms, focused on student behavior and feedback. Regarding statements 1a, 2a, 4a, and 5a, participants saw student helplessness as a result of outside factors. When students experience repeated failure, many lack confidence to perform at high academic levels. Educators found that when students are provided frequent opportunities to demonstrate academic awareness they are then able to perform specific tasks.

The results of the middle five qualitative pre- and post-treatment Likert scale comments pertaining to educator beliefs and attitudes were found in questions 6b (*What steps do you follow in designing lessons to accomplish necessary skills needed for student mastery on assessment?*), question 8b (*How do you organize your lessons to know when students are experiencing success or failure in completing the lesson objectives?*), question 9b (*How do you establish benchmarks?*), and question 10b (*How do you like this?*). From the random sampling of the answers to questions 6b, 8b, 9b and 10b, educator beliefs and attitudes toward providing learning benchmarks, use of assessments and feedback during the learning process, and knowing when students are being successful or not throughout the instructional setting were apparent in the findings. The findings indicated in both the pre- and post-treatment Likert scale survey comments suggested that educators did not have a clear knowledge base about providing effective benchmarks throughout the learning process. Educator comments suggested that educators believed that planning, knowing the skills, and determining the desired learning

activities were essential for fostering student mastery. Educators' use of formative and summative assessments, supportive educator feedback for continuous student engagement, explicit use of grade-level standards, and one-to-one student conferences would assist educators in their pursuit of creating incremental learning paths for active student learning. In contrast, the summary of the quantitative analysis of the pre- and post-treatment Likert scale survey scores for statements 6a (*I think through my assessments before planning lessons and strategies I will use in the classroom*), 8a (*I am aware when my students are not only experiencing success during a lesson but also when they are experiencing difficulty*), 9a (*My students are provided with learning benchmarks throughout each lesson*), and 10a (*I provide assessment feedback to all of my students during the learning process*), clearly showed an improvement in educator beliefs, attitudes, or perceptions and the use of teaching strategies. Statements 6a, 8a, and 10a revealed that the educators were in agreement with the survey statements. The pre-average score of > 4.0 and a post average score closer to 5.0 indicated a stronger agreement from the educators regarding the survey statements. The percentile differences for statements 6a, 8a, and 10a ranged from a positive number of +0.07% to +0.32%. In fact, statement 9a showed a stronger agreement with the statement after the pre-treatment survey, with findings of a pre-average of *neutral*, >3.0 to > 4.0 post average, resulting in a gain of +0.89%, which moved into a new category of *agreement*. Implications for this indicated that educators' beliefs and attitudes were moving in the right direction.

The assistant principal of High School A, collaborator Anissa Harris, for statements 7a, 8a, and 10a found that building relationships and trust were key educator

behaviors in building student efficacy. Educators understood that providing ongoing feedback to students assisted in re-focusing their behaviors with students.

The principal of High School B, collaborator Gwen Grooms, for statements 7a, 9a, and 10a, found that when students are provided authentic scenarios related to classroom experiences, then connections are available for mental transfer of knowledge. Student behavior is supported through praise, encouragement and through specific feedback from the educator.

The last five qualitative pre- and post-treatment Likert scale comments were charted in Figures 1–6. The answers to questions12b and 14b specifically focused on educator beliefs and attitudes. The data suggested from the pre-treatment survey for question 12b (*How do you define "inclusive"?*) that educators had a solid knowledge base in identifying the term *inclusion*. Responses from the educators before the study treatment intervention defined the term as making the curriculum available to all students, modifying the delivery of the lessons based on students' instructional level, and the educators' understanding of the curriculum. Results from the educators' comments regarding the post-treatment intervention revealed a deeper understanding of making the curriculum attainable for all students. This finding is based on comments pertaining to student accessibility to the instructional process, more meaningful learning, active student participation through hands-on activities, and acknowledgement of the importance to utilize a variety of learning tasks that address all learning styles of students. Question 14b (*How do you "ensure" learning?*) on the survey was designed to have the educators concentrate on their ability to design lessons that ensure learning. Results regarding statement 14b for the pre and post findings indicated that all educators reflected an

attitude of knowing exactly how to achieve this mission. Educators stated that they believed that creating opportunities for academic growth through authentic experiences and assessments was essential. They further indicated that incremental learning, repetition of drills, and quality probing questions stimulate students' willingness to learn. More importantly, the results indicated that both the pre and post survey comments results for statement 14b maintained a strong agreement with the survey statement. The quantitative data results for statement 12a (*My curriculum is inclusive, that is, attainable by all students based on my instruction*.), revealed an increase from *neutral,* > 3.0 to > 4.0 with a gain of +0.34% that indicated a stronger agreement with the statement. Statement 14a (*My lessons are designed to ensure student learning*.) findings indicated that the pre and post survey results evidenced a strong participant agreement. However, the post survey results for question 14a suggested a weaker agreement than the pre survey results with a negative difference of -0.02% from pre survey findings of 4.16% agreement to a 4.14% agreement with the ability to understand what students are able to do as the result or goal of each lesson.

The assistant principal of High School A, collaborator Anissa Harris, for questions 11a, 12a, 13a, and 14a found that educators recognized the need to design lessons to teach students how to transfer information and become critical thinkers.

The principal of High School B, collaborator Gwen Grooms, for question 11a found that the results of teacher feedback enhance student academic behavior in their ability to grasp concepts.

Implications and Recommendations for Educator Beliefs and Attitudes

The results of the pre and post survey questions related to the focus of educator beliefs and attitudes indicated that educators struggle with the ability to work explicitly with students who exhibit patterns of difficulty in the learning process. Educators' preconceived ideas seem to be fixed in regards to using feedback and ongoing assessments to deliver instructional strategies. As a result of this awareness, the findings did not show a significant gain in planning lessons and the use of best teaching strategies to be used based on formative assessments. Educators from the findings exhibited an attitude of marginal gain about knowing what students understand and are able to do as the result of the classroom instruction. In addition, educators possessed a high level of knowledge in knowing when students are experiencing academic difficulty, yet found it difficult to design lessons to ensure student learning.

As a result of these findings, a perceived need developed to engage educators in ongoing professional development on how best to assist students experiencing helplessness, set effective benchmarks as checking points for academic student development and success, and devotes more time to building collegial relationships through discourse and PLCs. During grade-level meetings, educators could focus on providing theoretical perspectives as it relates to instructional strategies. Consequently, through these avenues educators would be afforded the opportunity to encourage authentic dialogue, reflect on individual strengths and weaknesses, and adopt professional behaviors that would build positive relationships with students rather than impeding academic performance in the classroom.

Comparison of First, Middle and Last Survey Statements

The analysis exhibited in the pre- and post-treatment surveys for the top five questions indicated that educators believe they are reaching students who displayed helplessness in their classrooms by embracing a daily routine of grouping and setting high expectations, which could have a positive effect on student achievement. The instructional strategies of grouping did not make a profound impact on teachers' true understanding of how their instructional strategies affect their ability to know exactly what students understand and are able to do as a result of each lesson.

The analysis exhibited in the pre- and post-treatment surveys for the middle five questions indicated that educators strongly believe they are equipping students with the necessary tools to pass standardized tests. Yet, the district's Gates Spring Average Extended Scale Scores from 2003 to 2008 revealed that educators' inability to design lessons for student success and students' ability to apply or transfer learning to new situations led the researchers to believe that the educators did not extrapolate from an individual lesson designed for one student to promote application and transfer to all lessons they designed for their students. The study yielded a relationship of educators providing feedback and learning benchmarks throughout each lesson. Yet, the results from the Gates indicated minimal progress from all three suburban schools.

The analysis exhibited in the pre- and post-treatment surveys for the last five questions indicated that educators had a significant lack of true understanding as to the differences between assessment as feedback to improve learning during a lesson and assessment as an evaluation instrument at the end of the lesson. The majority of respondents believed that curriculum provided was attainable by all students, and that

lessons taught students how to learn and perform based upon the use of effective teaching strategies that ensured student success (see Figures 1–6).

Comparison of Likert Pre and Post Survey Statements

Statements 1a and 9a showed a significant gain in the *neutral* area, $3.0 \leq$ average < 4.0, with regard to agreement with the statement. Then, the post average went up significantly and moved into a new category of *agreement*, average ≥ 4.0. After the implementation of the program, these statements revealed an improvement in teacher attitudes and the use of teaching strategies. Statements 4a and 12a revealed a marginal increase from *neutral*, $3.0 \leq$ average < 4.0, to *agreement*, average ≥ 4.0, when comparing the pre-average to the post average. The educators gained a better knowledge of what students will understand and be able to do as a result of each lesson. Educators believed that the curriculum was obtainable by all students based on their instruction. Statements 5a, 6a, 8a, and 10a have a pre-average ≥ 4.0, indicating agreement with the statement. Then the post average moves closer to 5.0, which indicates stronger agreement after implementation of the program than before implementation took place. This indicates that educator attitudes and use of teaching strategies are moving in the right direction. For statements 14a and 15a the pre-average was ≥ 4.00, and, even though the post average value did not go up, the post average still indicates agreement with the statement after implementation of the program. Statements 3a and 11a showed improvement, but the post average agreement with the statement after implementation showed only *neutral.* These two categories showed efforts to change teacher perceptions and the use of effective teaching strategies to impact student achievement when comparing pre-averages to post averages. Only three columns (statements 2a, 14a, and 15a) indicated weaker agreement

on the post survey than on the pre survey. It is important to note that two of these categories were discussed above as still indicating agreement with the category statement in the post survey. The third category, statements 2a, moved from 4.30 *agreement* to a 3.95 *neutral*. Still, note that there is not disagreement with the perception statement. The educators on questions 7a and 13a indicated an increased knowledge base in designing lessons, student understanding, and effective teaching strategies. Question 7a showed improvement of $3.95 \leq$ average < 4.14 indicating *agreement* with the category statement in the post survey. Statement 13a showed improvement of $3.52 \leq$ average < 3.95 remaining *neutral* with the category statement from the pre survey to post survey. The educators' efficacy and the ability to be reflective yield higher results, contrary to researchers' classroom observations (see Table 9).

Implications for Effective Schools

The findings of the study did not definitively support the hypothesis of a change in the educators' paradigm as it related to their attitudes and teaching strategies. The importance of enhancing all subgroups in the quest to higher levels of academic efficacy is one of many attempts in addressing the achievement gap. This study examined how educators are seen as being the most vital resource in confronting the NCLB mandate through good classroom instruction, awareness of student strengths, analysis of ongoing assessments, and the understanding of knowing what a student can and cannot do as the result of classroom instruction and academic growth. When students are engaged in a learning environment that is rich with effective instructional strategies and explicit feedback, then subgroups will positively become contributors to their own self-attribution and the feeling of helplessness will not be an option. Jensen (1998) stated that "contrary

to a temporary unmotivating state, learned helplessness is a chronic and devastating condition" (p. 57). Review of literature revealed that educators' beliefs and attitudes about what a student can or cannot achieve are important related factors in the increase or decrease of student academic achievement. D'Amico (2001) believed that self-confidence comes from success. Educators' positive interaction with all subgroups supporting their literacy learning will instill an increased self-confidence level of efficacy. Singham believed that if the educator is not competent or does not have high expectations; students will have a hard time improving. Not only do educators have to have a dedication to high expectations, they must have a dedication to their own development (Singham, 2003). However, the program evaluation of the three 45 minute professional development sessions elevated the educators' level of consciousness of the principles of efficacy and Understanding of backward design curriculum as noted from the survey results. Additional information from the survey indicated that educators perceived that students' helplessness and lack of involvement in the learning process was fostered by external forces such as culture, socioeconomic status, and lack of parental involvement rather than educators viewing their pivotal role and interactions with students as an essential component of the learning process.

According to Butler and McMunn (2006), educators that are constantly learning and reflecting on their craft are equipped to meet the needs of their students:

> Reflection is what a teacher does when he looks back at the teaching and learning that has occurred and reconstructs, reenacts, or recaptures the events, emotions, and accomplishments. It is through this process that a teacher learns from experience. Such reflection can lead to a change in the beliefs that teachers hold

> about teaching and learning. Once such beliefs are changed, change in practice becomes inevitable. (p. xxxiv)

Butler and McMunn stated that using best teaching strategies and assessments should provide students with effective instructional tools that will enhance their performance. They further noted that self-reliant learners internalize learning strategies in a productive way which enables the student to access and link strategies to instruction in making connections to the real world.

Recommendations

The following recommendations should be considered by any school seeking further consideration of examining efforts to change educators' attitudes and teaching strategies to impact student achievement, with an understanding of the principles of efficacy and the strategies of backward design curriculum:

1. Ample collaboration time and length should be scheduled for the professional development sessions. This collaboration time will afford educators an opportunity for the necessary collaboration and problem solving needed in their self-reflection.
2. Professional learning community meetings, professional development days, and grade-level meetings should be utilized to identify, gather, and analyze data closely as it relates to narrowing the achievement gap and measuring teaching strategies in the classroom. According to Hord (2004), "Such collaborative work is grounded in *reflective dialogue* or *inquiry*, where staff conducts conversations about students and teaching and learning, identifying related issues and problems" (p. 9).

3. Continuous improvement of teaching practices that would directly affect teaching for learning (formative assessment) and teaching of learning (summative assessment) could successively improve student outcomes that include intellectually challenging goals for high quality learning.
4. In order to look for a change over time, a larger sampling could yield more data points and support the hypothesis in helping educators examine their own beliefs and practices.
5. School districts may consider further qualitative and quantitative studies that would support efficacy of student success practices rather than fostering helplessness. Future studies could include local common assessments, state assessments and teacher lesson plans and units utilizing the understanding by backward design model to aid in achieving the target goals and ensuring positive learning experiences for students.
6. According to Blankstein (2004), "When people don't get feedback, they begin to think the worst of a situation, of themselves and what they're involved in" (p. 149). Feedback must be provided to students in a timely, precise manner that brings about positive communication and drives instruction while reinforcing effort and recognition of students becoming risk takers.

Conclusion

The three targeted schools had a number of educators who entered the study with some degree of prior knowledge which impacted the results of the study. Based on the study findings, all educators in the district should be afforded the opportunity to have an

in-depth and ongoing professional development that focuses on the characteristics of the principles of efficacy and understanding backward design. The differences noted among the three schools is that the elementary school concentrates more on reading, which lays a firmer foundation for students emerging into literacy. Secondary educators' level of support in scaffolding is minimal in regards to educator's attitudes and perceptions of what students know and are capable of doing to function at grade level. An additional difference between elementary and secondary schools is the degree of nurturing and relationship building provided to all students that supports trust and higher academic achievement.

Direct benefits included a deeper understanding of the effects of educator attitudes and strategies on student achievement and on closing the achievement gap in the district. Indirect benefits included society benefiting from having informed educators learning how to design lessons to create student success in all academic areas. When educators become more culturally responsive and sensitive to their students' history and learning styles, this may provide direction towards closing the academic achievement gap between the subgroups studied.

The hypothesis was, An understanding of the principles and strategies of efficacy and backward design curriculum will result in a positive change in educator attitudes and instructional strategies as measured by Likert scale survey results. The research question was, How do efforts to change educator attitudes and teaching strategies through professional development focused on the use of backward design curriculum and the principles of efficacy affect educator beliefs and attitudes, as measured by written open-ended questions? Educators' understanding through professional development

sessions caused a positive change in how educators approached the instructional setting. Likert scale survey statements noted and supported the hypothesis because of a change in educator attitudes and instructional strategies used in the classroom. Therefore, the hypothesis was accepted.

To answer the research question, factors relating to the use of best research-based instructional strategies with a high correlation between educator beliefs and attitudes for the future consist of: (a) the classroom environment conducive to learning, (b) educator attitudes and best teaching strategies, and (c) the principles of efficacy and backward design curriculum. Throughout the entire period of the study, fall 2008 to spring 2009, educators involved in this treatment group expressed a better understanding through written open-ended questions on how to academically move students from learned helplessness to higher levels of active learning. The principles of efficacy and the use of backward design curriculum provided a guide for educators to examine current practices and acknowledge their beliefs and interactions with students to positively improve instruction. Based on the review of literature, all stakeholders will need to possess a sense of urgency, accountability, and commitment towards solving the academic achievement gap among the subgroups. The review of literature offers convincing evidence that it is important that educators support a student's cognition and social development through scaffold learning. This action will greatly impact a student's ability to think critically and provide value to all subgroups. Those involved in this research remain committed to the process of changing their instructional practices and strategies to assist students to become active learners in the classroom.

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Appendix A

Table A1

Operational Model for Managing Development (OMMD)

The Efficacy Model Confidence - > Effective Development Effort (Dweck's Incremental Theory)	Learning Global Orientation Basic question for educators and students: "What must I do to get better?"	Mastery Response Adaptive response pattern, *especially after failure*	Development Ultimate outcome: Children prepared to meet the challenges of the 21st Century
Educators instruct children about how to think about intelligence and learning: TEACH NEW THEORY Opening Day Speech: "There is no need for you to prove you have the brains to be smart in school. We already know that. The objective is to improve your intelligence through hard work; to get smart. Smart is not something that you are, smart is something you can get." ESTABLISH LEARNING OBJECTIVES "By the end of this semester, you will be able to _____ at a minimum level of _____. To do this, you will start with your present level of capability, and you will work and learn to improve.	Educators set up environments to facilitate learning. Coach, support, and provide tools a child may use to improve; to FOHGICB: BUILD A CLIMATE THAT SUPPORTS DEVELOPMENT • Build Confidence • Shape Strong Effort SET UP A LEARNING GOAL SCHOOL/ CLASSROOM ENVIRONMENT • Employ the "Zoning for Development Model" to get children to commit to incrementally challenging learning objectives • Stress Development as the Key Educational Objective BUILD A CLIMATE THAT SUPPORTS DEVELOPMENT • Reduce Fear, Foster a Win-Win Environment • Respond in a Balanced Way to Failure • Provide a Clean, Psychologically Safe Environment	Educators monitor cognitive, emotional and behavioral effects to assess learning orientation: COGNITIVE EFFECTS • Success attributed to ability plus effort • No ability attribution after failure: failure attributed to ineffective effort • Failure or difficulty viewed as feedback EMOTIONAL EFFECTS • Success based on high effort, good strategy sources of pride • Failure stimulates determination BEHAVIORAL EFFECTS • Moderate risk goals chosen to maximize growth of abilities and pride in improvement • Children actively seek increasingly challenging objectives. Use the ZOD to push beyond the limits of present capabilities.	School personnel observe and verify that children are getting better, stronger, and smarter with each succeeding year: INCREASING EMPHASIS ON PERFORMANCE STANDARDS • Increasingly, as they get older children are able and eager to meet aggressive performance standards • Internalization of a learning goal orientation reduces fear of failure and acting out. • Each academic year results in greater confidence and incremental movement toward a ZOD level, 21st Century stand of development and capability

From J. Howard. *Operational Model for Managing Development.* The Efficacy Institute, Boston, MA: Efficacy Publications, 1990.

Table A2

Efficacy Paradigm: Self Confidence not Self Esteem – Belief System

The Efficacy Paradigm →	Mission →	Mobilize →	Proficiency
	Accelerate all students To Target • Effective practices • Teach the Get Smart Mindset to all Students • Specify the knowledge and skills that Constitute Proficiency for Each Subject	Effective Effort Stimulate Encouragement • Sharpen an Intense Focus on Feedback • Trigger Strategy Formulation Based on Feedback	To Target Stimulate Engagement Accelerated (or Higher) Accelerated Development

From Howard, J. (2008). School/community partnerships: Adult proficiency means never walking alone. *From Now On: The Journal/Newsletter of the Efficacy Institute.* Retrieved December 7, 2008, from http://fno.org

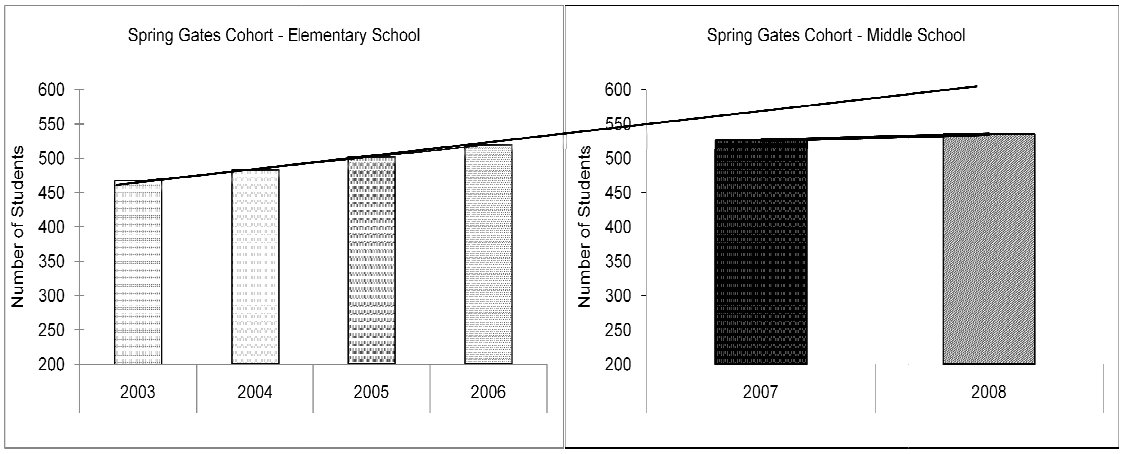
Appendix B

District

Gates Spring Average ESS Scores, Grades 3–8

Grade	2003	2004	2005	2006	2007	2008
03	467	471	472	474	474	474
04	489	483	484	484	488	491
05	502	503	502	503	503	505
06	522	519	520	520	520	519
07	526	526	524	526	526	527
08	538	535	535	534	535	535

	G3	G4	G5	G6	G7	G8
Cohort	2003	2004	2005	2006	2007	2008
Total	467	483	502	520	526	535



DISTRICT

Gates Spring Average ESS Scores, Grades 7 – 11

Grade	2003	2004	2005	2006	2007	2008
07	526	526	524	526	526	527
08	538	535	535	534	535	535
09	547	544	542	536	535	535
10			546	559	557	556
11			549	566	561	565

	G7 2004	G8 2005	G9 2006	G10 2007	G11 2008
Total	526	535	536	557	565

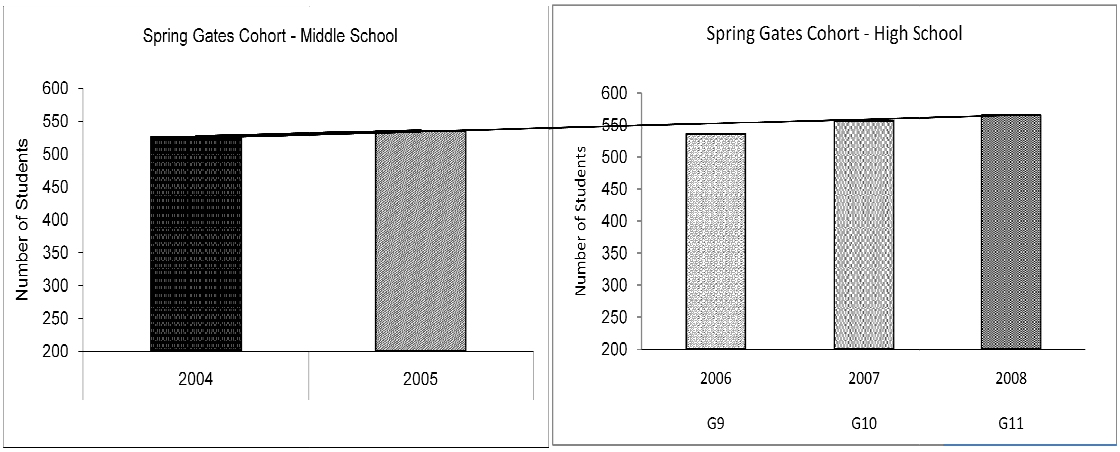
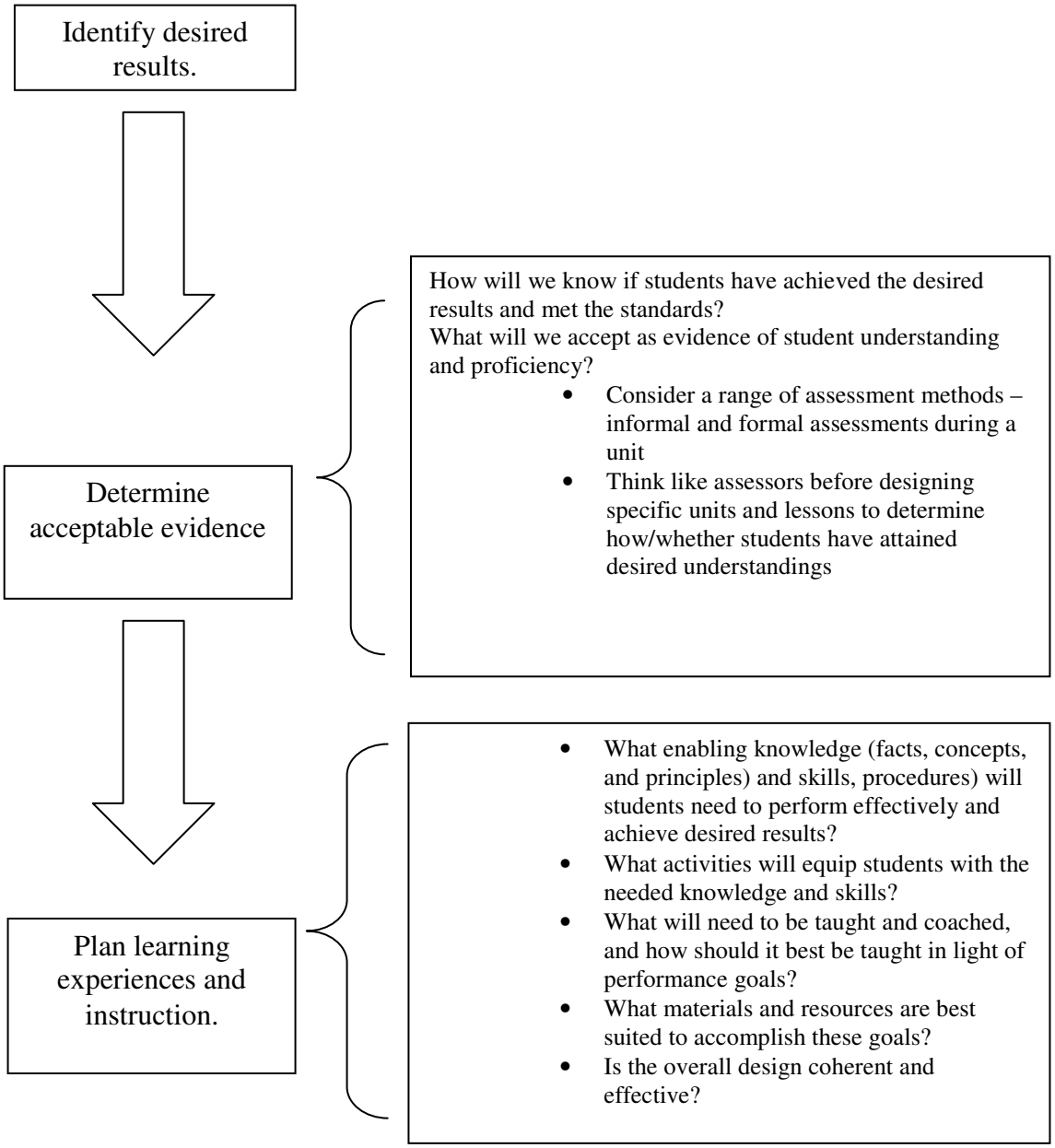


Figure B1. Gates Spring Average Extended Scale Scores for Cohort 2003 to 2008.

Note. Results for cohort reading population based on 3rd grades in 2003 matriculating to 11th grade in 2008.

What should students know, understand, and be able to do? What is worthy of understanding? What enduring understandings are desired?

- Consider goals
- Examine content standards (district, state & national)
- Review curriculum expectations
- Teacher/students interests



FigureB2. The Backward Design Process.

Note. From G. Wiggins and J. McTighe. (2005). *Understanding by design-expanded* (2nd ed.). Alexandria, VA: Association for Supervision and Curriculum Development.

STAGE 1 – Desired Results

Established Goals: Math Geometric and Spatial Relationships 1AK

Understandings:	Essential Questions:
Students will understand: *Characteristics and properties of two-and three dimensional geometric shapes	*What is a solid?

Students will know…	Students will be able to…
*the names and attributes of Geometric solids	*discuss the attributes of geometric solids

STAGE 2 – Assessment Evidence

Performance Tasks:	Other Evidence:
*identify geometric solids in objects	*Practice page 7-1 *Chapter 7 Math Test *Classroom Observation

STAGE 3 – Learning Plan

Learning Activities:

The students will…
*pass a geometric solid and discuss its attributes
*look around the classroom for other objects that have the same attributes as the geometric solid

The teacher will…
*List the characteristics of geometric solids in the classroom
*Lead discussions
*Facilitate class discussions
*Offer feedback to students

Figure B3. Sample of Backward Design Lesson Plan (Elementary A).

Appendix C

Action Plan Research Topic Timeline

TOPIC: *"Effects to Change Teacher Attitude and Teaching Strategies to Impact Student Achievement."*
Week of October 27th – 31st, 2008:

- Provide participates with Consent Letter
- Give background of self and research project
- Conduct conversations @ grade-level planning periods (include fine arts teachers) *Dialogue: (Discussion)*

  Quote….Jeff Howard *"Once you convey to children – whether consciously or not – that they are too 'dumb' to learn, they will almost always prove you right."*

1. Briefly talk about : "backward design" (UBD) and "principles of efficacy" *(See Notes)*

2. Explain that each participant will be involved in creating and teaching at least 6 lessons (units) using the principles of efficacy and backward design curriculum.
3. Participants answered pre-survey questions
4. Additional meeting weeks:

- November 3rd -14th, 2008: Big Idea #1 Discussion (backward design) & (efficacy).
- November 17th – December 5, 2008: Discuss efficacy in detail & distribute templates for UBD design.
- December 5th- December 19, 2008: design lessons/units (6) & implement in classroom.
- January 5th – January 20, 2009: Revisited/Recapped information discussed before winter recess. Clarifying questions and concerns were addressed in small groups, grade level meetings and staff meetings.
- January 26th – February 9, 2009: Classroom observations conducted and individual participants concerns addressed by researcher.
- February 9th – March 2nd, 2009: Meet and discuss with participants their "aha" moments of classroom success with students.
- March 2nd – March 13th, 2009: Collection, tabulation of UBD templates by each researcher.
- March 13th – March 20th, 2009: Participants answer post survey questions.
- March 20th – April 3rd, 2009: Researchers collected and examined post survey results at each individual site.
- April 3rd – April 10th, 2009: Researchers tabulated individual site results.

- April 10th – April 24th, 2009: Researchers develop grids/rubrics to examine combined results focusing on frequency, mean and standard deviation of the responses to the Likert survey scale.
- April 24th – May 31st: Researchers closely examined communication in results focusing on the top, middle, and bottom survey questions. Comparison of a shift in teacher attitudes was examined from the pre and post survey results.

Notes used by researchers in conversations with participants:

Backward Design: Work of… Grant Wiggins and Jay McTighe

- A process to designing lessons by beginning with the end in mind (assessment) and designing everything towards the end.
- One starts with the end:
  1. The desired results (goals or standards/GLE's)
  2. Identifies the evidence necessary to determine that the results have been achieved, that is , assessments
  3. Once the results and assessment is clearly specified, then you can determine the necessary (enabling) knowledge and skills and the teaching needed to equip students to perform.
  4. Teachers ask "Essential Questions" to improve student's understanding and to get a deep and enduring understanding.
  5. In other words "What will my students know" and "What will they be able to do?" and the evidence we as educators will accept that they have learned it!
  6. Finally, backward design helps organize our instruction.
  7. Stages of "backward design curriculum" (1) identify desired results; (2) determine assessments to use, and (3) plan learning experiences (activities) and instruction

Principles of efficacy: Work of… Jeff Howard (Harvard Graduate School of Education)

- Is a state of mind a way of thinking!
- Student "efforts" determines learning outcomes, not innate ability.
- Efficacy encourages students to grow to their fullest potential by taking ownership of their own successes and failures.
- It involves … Confidence → Effective Effort → Development
- Development
- The paradigm shift… "belief system"

Appendix D

Teacher Attitudes and Teaching Strategies Survey

Directions: This inventory will help you identify your perspectives on teaching. As you consider the following statements, think of specific content and learners. For each statement below, select the response that best represents your Agreement or Disagreement. Each question also contains an open-ended component that will provide an opportunity to elaborate.

---

(1) Strongly Disagree (2) Disagree (3) Neutral (4) Agree (5) Strongly Agree

---

1a. I work with many students who exhibit helplessness in learning concepts that I am teaching. 1 2 3 4 5

1b. Why do you believe that they exhibit this helplessness and where do you think it originates?

2a. Every student in my classroom(s) can achieve a high degree of academic success. 1 2 3 4 5

2b. Why do you believe that this is or is not possible?

3a. I frequently group students in my classroom according to their perceived abilities to grasp the concepts taught. 1 2 3 4 5

3b. How does grouping assist you with increasing student achievement?

4a. I know exactly what my students will understand and be able to do as the result/goal of each lesson. 1 2 3 4 5

4b. How do you know this?

5a. My students can provide evidence of their understanding throughout the lesson by demonstrating they can accomplish specific tasks. 1 2 3 4 5

5b. How do you design the lesson to ensure students will be able to demonstrate success in completing the given task?

6a. I think through my assessments before planning lessons and strategies I will use in the classroom. 1 2 3 4 5

6b. What steps do you follow in designing lessons to accomplish necessary skills needed for student mastery on assessments?

7a. My students can apply/transfer what they are learning to different learning situations. 1 2 3 4 5

7b. How do your lessons make this possible?

8a. I am aware when my students are not only experiencing success during a lesson but also when they are experiencing difficulty. 1 2 3 4 5

8b. How do you organize your lessons to know when students are experiencing success or failure in completing the lesson objectives? .

9a. My students are provided with learning benchmarks throughout each lesson. 1 2 3 4 5

9b. How do you establish benchmarks?

10a I provide assessment feedback to all of my students during the learning process. 1 2 3 4 5

10b. How do you like this?

11a.Assessment is the same as feedback in my class. Assessment is not used to evaluate my students during a lesson. 1 2 3 4 5

11b. What do you think is the difference between assessment and evaluation?

12a. My curriculum is inclusive, that is, attainable by all students based on my instruction. 1 2 3 4 5

12b. How do you define “inclusive?”

13a. My lessons teach children/students to “learn how to learn” and “learn how to perform.” 1 2 3 4 5

13b. How do you design for “learning how to learn”?

14a. My lessons are designed to ensure student learning. 1 2 3 4 5

14b. How do you “ensure” learning?

15. The success of my curriculum and my instructional strategies is determined by my students’ success. 1 2 3 4 5

Appendix E

District Permission Letter

Ferguson – Florissant School District

1005 Waterford Drive

Florissant, MO 63033

TO: **IRB Review Board**

FROM: **Jeff Spiegel, District Superintendent**

SUBJECT: **Written Consent for Doctor of Education**

This memo is to inform you of my consent given to Alice M. Aldridge, Gwen Grooms and Anissa Harris, employees of the Ferguson-Florissant School District and candidates for the Doctorate in Education Administration Program through Lindenwood University, to secure my permission to conduct a research study, pertaining to closing the achievement gap by examining a deeper understanding of race.

Should the members of the Board of IRB Review have any questions regarding my consent, I would be happy to discuss this matter with them.

Jeff R. Spiegel — Superintendent of District — 10/25/07 — Date

Alice Marie Aldridge — Candidate's Full Name — 10/29/07 — Date

Anissa Rochelle Harris — Candidate's Full Name — 10/29/07 — Date

Gwen Grooms — Candidate's Full Name — 10/29/07 — Date

Appendix F

Board of IRB Review Letter

09-01
IRB Project

LINDENWOOD UNIVERSITY
Institutional Review Board Disposition Report

To: **Alice Aldridge, Gwen Grooms, Anissa Harris**
CC: Drs. Susan Isenberg and Cynthia Vitale

Congratulations! The Institutional Review Board reviewed this proposal for research and it was accepte
Good luck with your data collection.

Colleen Biri, Psy.D. 10/14/2008

Appendix G

Informed Consent for Participation in Research Study

Dear Colleague:

We, Alice Aldridge, Gwen Grooms and Anissa Harris, are doctoral students at Lindenwood University. We invite you to participate in our research project titled "Efforts To Change Teacher Attitudes And Teaching Strategies To Impact Student Achievement."

The purpose of this study is to gain a deeper understanding of "The principles of efficacy" and "Backward Design Curriculum" through the use of pre and post surveys. Our initial research indicates that 75.4% of Black students are performing below the Annual Proficiency Target in Communication Arts and 35.8% are performing below the state's Annual Proficiency Target in Mathematics.

Your participation in this study will involve completing the attached survey and questionnaire as well as engaging in a collegial dialogue. Your involvement will assist us in opening the lines of communication relating to efficacy and Backward Design as it relates to closing the academic achievement gap as a district. It should take an estimated 20 minutes to complete the survey and three to four mini-workshops of approximately thirty-five to forty-five minutes to collaborate. Your responses will remain anonymous and not be identified with you personally.

There are no anticipated direct benefits or risks to you as a participant, aside from contributing to a better understanding of efficacy and Backward Design as it relates to instructional practices. Society may benefit through having informed teachers learn how best to close the achievement gap, and become culturally responsive and sensitive to their students' history, and learning styles.

Your participation is voluntary and non-participation will not adversely affect you. If you have any questions or concerns about completing the survey, you may contact either one of the group members listed below via email or telephone or contact our advisor, Dr. Cynthia Vitale, at 636-949-4315. The Review Board at Lindenwood University has approved this project.

Thank you for your time and attention in completing the survey; we look forward to your responses! We welcome your input and depend upon your participation! Please sign below if you agree to participate.

Sincerely,

Alice Aldridge, 314-524-4821, aaldridge@fergflor.k12.mo.us
Gwen Grooms, 314-506-9806, ggrooms@fergflor.k12.mo.us

Anissa Harris, 314-506-9213, aharris@fergflor.k12.mo.us

I agree to participate in the study titled, "Efforts To Change Teacher Attitudes And Teaching Strategies To Impact Student Achievement."

Signature: _____

Appendix H

Sample of Backward Design Lesson Plan (High School A)

---

1. The community in which a person lives or is raised affects a person's attitudes, beliefs, customs, and perception of the world.

2. Communities use different methods of social pressure to force or encourage individuals to conform. Social pressure is exerted through many avenues, including the laws a community passes and enforces, the lessons they teach to children, the religious traditions they follow, their familial relationships, and the social customs they follow.

3. Communities tolerate differences to various degrees and the level of tolerance may change depending on the circumstances of the time and place. Every community, however, has certain taboo beliefs and behaviors that are discouraged. Those who conform are likely to receive social rewards, like prestige, admiration, acceptance, political power, or financial success. Those who do not conform may be punished with ridicule, shunning, bullying, or violence.

4. Conformity offers communities a sense of stability and security that is essential for relationships to form; however, excessive conformity stifles innovation, unfairly punishes the minority, and weakens the community as a whole.

What essential questions will be considered (essential questions)?
1. How does community affect lifestyle?
2. How do communities create conformity?
3. How do communities handle differences?
4. When is conformity necessary and when is it dangerous?
What key knowledge and skills will students acquire as a result of this unit?

Knowledge

Vocabulary (witch hunt, tolerance, persecution, conformity, Communism, McCarthyism, scapegoat, etc.)
Text features and elements of drama (scene, act, set, stage directions, aside, dramatic irony, etc.)
Basic knowledge of Puritan religious beliefs and customs
Historical facts about the Salem witch trials
Historical facts about McCarthyism
People – Arthur Miller, Joseph McCarthy, Elia Kazan
Characters – John Proctor, Abigail Williams, Elizabeth Proctor, Rev. Hale, Rev. Parris, Danforth, Giles, etc.

Skills

Students should be able to:

1. Analyze characters' motives to make predictions and inferences about the text.
2. Conduct research using the Internet and multiple print sources.
3. Synthesize research into an effective essay with a thesis statement, supporting evidence, and proper citations.
4. Describe the connection between community features and circumstances that can contribute to mass hysteria, both in the Salem witch trials and in modern "witch hunts."

Stage 2: Determine Acceptable Evidence

Performance Tasks and Scoring Guides (summary in GRASPS form):

Modern-Day Witch Hunts – Research Project

G Your task is to research a modern-day witch hunt. Using the Internet and print sources, you will research the cultures and communities in which the persecution took place. Uncover what community factors were involved in creating and sustaining the intolerance, how the persecution took place, and what reasonable steps might have been taken to prevent or diminish it.

R You are a student researcher attempting to demonstrate that witch hunts are not a thing of the past. Such calculated campaigns are still being launched in modern times against minority groups who are unwilling to conform to the power structure of their communities.

A Your audience is your teacher.

S In order to write an effective research paper, you must compile information on note cards, develop a thesis statement, and outline your ideas.

P You will write a 3 to 5 page research paper that demonstrates your understanding of the "witch hunt" phenomenon.

S Your final paper must explain the community factors that led to the persecution, discuss how the persecution took place and its effects, and explain what reasonable steps may have been taken to prevent or diminish it. In addition, the paper must be written in MLA format. It must contain an introduction with a thesis statement, and have a clear beginning, middle, and end. It must be 3-5 pages in length and have appropriate citations.

Appendix I

High School B: Business Lessons

LESSON ONE: Description of Business

ESSENTIAL QUESTION: What type of business am I starting?

Lesson Instructions/Directions: Has there ever been a time where you wished there was a certain type of business in your community. Imagine that you are about to start your own business.

1. Think of every possible idea you would like to see in your community, and come up with an idea and a name for a new business. Give a brief description about what your business is and how you are different than other businesses like yours. (The Business Idea)
2. Write down the major products and services you will offer, and explain your reasons for choosing them. (Products and Services)
3. Once you have decided the type of business you will start, think about what type of ownership you will have. Consider the all the things we have learned about types of business ownership. Write down the type of ownership you would plan to have for your business and explain in detail why you chose this type of ownership. (Ownership Structure)
4. As a new business you will potentially have to do things that make your business better than others. Looking at every possible idea that you plan to have for your business, make a list of all the strengths (things that make you better) of your business. (Strengths)
5. As a new business you will also have weaknesses. Think of every possible thing that can be a problem for your business and make a list of weaknesses. (Weaknesses)
6. In order for your business to be successful, you must set goals that you would like to reach. Make a list of long-term goals (anything longer than a year) and a list of short-term goals (anything less than a year) that you plan to achieve and create a time-line for when you plan to achieve them. (Long- and shor- term goals)
7. Teacher Objectives: The Student Will…

- Describe what their business is and explain how it is different from other business like it.
- List major products and services to be offered.
- Explain the type of ownership they will have and why they chose that particular ownership.
- Make a list of strengths.
- Make a list of weaknesses.

- Make a list of long-term and short-term goals for their business.

Student Assessment Checklist:

- I described what my business is and explained how it is different from others like it.
- I made a list of major products and services I will offer in my business.
- I explained the type of ownership I will have and why I chose this type of ownership.
- I made a list of the strengths of my business.
- I made a list of weaknesses of my business.
- I made a list of long and short-term goals for my business.

LESSON TWO: Description of competition
ESSENTIAL QUESTION: Who is my competition?

Lesson Instructions/Directions: The definition of competition is a contest between rivals; the effort of two or more persons or firms acting independently to secure business by offering the most favorable terms.

1. Think of what other businesses like yours are doing differently. List everything you can think of that is happening to attract customers to those businesses. *(CHARACTERISTICS OF THE INDUSTRY)*
2. Make a list of at least five but no more than ten of your major competitors.
3. Make a list of five positive things those businesses you are competing with have going for them. (ex. well-known, established customer base, good location) *(STRENGTHS)*
4. Make a list of five negative things those businesses you are competing with have going for them. (ex. higher prices, not enough variety in products, don't offer certain services) *(WEAKNESSES)*

Teacher Objectives: The student will…

- Make a list of what other businesses like theirs is doing to attract customers.
- List at least five but not more than ten competitors
- List five positive aspects of the competition
- List five negative aspects of the competition

Student Assessment Checklist:

- I made a list of what other businesses like mine are doing to attract customers.
- I made a list of at least five but not more than ten competitors.
- I made a list of five positive aspects of my competition.
- I made a list of five negative aspects of my competition.

LESSON THREE: Customer Analysis
ESSENTIAL QUESTION: What type of customers do I want to attract?

Lesson Instructions/Directions:

1. Make a list of customers you would like to attract to your business (target market). Use age groups, race, religion, income, and other things to help you decide. Do not list specific names, only groups. *(DESCRIPTION OF COMPETITION)*
2. Consider where your business is located and decide what areas you will service and make a list. For example, if you are located in Berkeley, you will probably attract customers from Ferguson, Florissant, Jennings, and other surrounding areas. If you plan to advertise, you may even attract customers form Illinois and St. Charles. *(LOCATION AND RESOURCES OF CUSTOMERS)*
3. Try to think of how much money you plan to make each week, and list weekly, monthly and yearly sales. Understand that this is only an estimate. You must consider the cost of your products and services, and your hours of operation. For example, if you were open seven days a week, and eight hours a day, and you expect to make at least $500 per day, your weekly sales would be $3,500. (500 * 7 = 3500) Your monthly sales would be $14,000 (3500 * 4 = 14,000) and your yearly sales would be $168,000 (14,000 * 12 = 168,000).

Teacher Objectives: The student will…

- Make a list of customers they will attract using race, age, gender, etc.
- Make a list of the areas their customers are coming from.
- Calculate weekly, monthly, and yearly-expected sales.

Student Assessment Checklist:

- I made a list of customers that I would like to attract.
- I made a list of the areas my customers will come from.
- I calculated expected weekly, monthly, and yearly sales.

LESSON FOUR: Operations Plan
ESSENTIAL QUESTION: How will my company be run on a day-to-day basis?

Lesson Instructions/Directions:

1. How will your company be organized? Consider whether you will have people working under you, or will you be the only worker? If you will have people working under you, make a job title for them. Create a chart that displays the organization of your company. *(ORGANIZATION OF THE COMPANY)*
2. What are the major operations of your company? Answer the following questions by making a list. *(DESCRIPTION OF MAJOR OPERATIONS)*
    a. What are your hours of operation?
    b. What time you will expect employees to report to work?
    c. Will your employees use a time clock or sign-in sheet?

   d. Who is responsible for maintenance of the business (cleaning, fixing things, handling customer complaints)?
   e. Who will be responsible for payroll?
   f. Who is responsible for bank deposits, and how often do you make them?
   g. When will you take inventory, and who will help with the records?
3. Make a list of every possible thing you will need to run your business. Some examples include: mop, bucket, cash register, shelves, office supplies, all products in your inventory, vacuum, cleaning supplies, first aid kit. Be sure to research and include prices for all of the things you will need. *(ANALYSIS OF RESOURCES NEEDED)*
4. Create a job description, job title, and qualifications for each of the jobs you plan to have in your business (refer to organization of the company #1 above). If you plan to offer benefits, be sure to give a description of how much you pay towards the cost. How much will you pay your workers (hourly or salaried)? Will you offer overtime? *(HUMAN RESOURCE PLANS)*

Teacher Objectives: The student will…

- Create a chart that displays the organization of their company.
- Make a list of major operations answering all of the questions listed above.
- Make a list of all resources needed to run their business and the prices.
- Create a human resources plan listing job description and title, salary, benefits, and qualifications for all of the employees of their business.

Student Assessment Checklist:

- I created a chart that displays the organization of my company.
- I made a list of all major operations of my company by answering the questions given.
- I made a list of all the resources I need to run my business and include how much each item will cost.
- I created a human resources plan listing the job description and title, salary, benefits, and qualifications for all the employees in my company.

LESSON FIVE: Marketing Plan
ESSENTIAL QUESTIONS: How will I attract customers to my business?

Lesson Instructions/Directions:

1. Make a list of all the ways you plan to advertise your business. Some ideas include word of mouth, grand opening celebration, promotional sale, commercials (TV & radio), newspaper ads, or flyers. These are just a few ideas, but you may use as many as you like. When you make your list keep in mind the types of customers you are targeting. *(DESCRIPTION OF MAJOR MARKETING ACTIVITIES)*

2. Looking at the activities you chose above, make a list of all the resources you will need to complete these marketing activities. Of course you will need money first and foremost. You may also need paper, TV cameras, TV studio, etc. Be realistic! *(DESCRIPTION OF RESOURCES NEEDED)*
3. Create a timeline of when you plan to complete these activities. For example, you may want to have a grand opening celebration within the first month of your business. You may release your TV commercial within three years. Again, be realistic! *(SCHEDULE OF MARKETING ACTIVITIES)*

Teacher Objectives: The student will…

- Make a list of all the ways they plan to advertise their business.
- Make a list of resources they will need to advertise their business.
- Create a timeline of when they plan to complete these activities.

Student Assessment Checklist:

- I made a list of all the ways I plan to advertise my business.
- I made a list of the resources I will need to advertise my business.
- I created a timeline of when I plan to complete my advertising activities.

LESSON SIX: Financial Plans
ESSENTIAL QUESTION: How will I finance my business?

Lesson Instructions/Directions:

1. Consider all the money you will need to get your business *started.* Make a list of things (products or services) you will need in order to open your business. Include the estimated cost of each item in your list. This will require a bit of research, and you will also have to refer to your Operations Plan under the Analysis of Resources Needed section. *(START-UP COSTS)*
2. Make a list of financial needs you will have within one year of opening your business. Some ideas include expanding inventory, start-up costs, and savings. *(SHORT-TERM FINANCIAL NEEDS)*
3. Make a list of financial needs you will have in a year or more of opening your business. Some ideas include expansion costs, increase advertising, or making a major purchase. *(LONG-TERM FINANCIAL NEEDS)*
4. Make a list of how you plan to get the money to start your business. You may choose to take out a bank loan, or get people to invest in your business, you may have personal funds, or you may borrow from family and friends. *(SOURCES OF FINANCING)*

Teacher Objectives: The student will…

- Make a list of estimated cost of items needed to start their business.
- Make a list of financial needs they will have within one year of starting their business.

- Make a list of financial needs they will have within a year or more of opening their business.
- Make a list of where they will get the money to start their business.

Student Assessment Checklist:

- I made a list of estimated costs of everything I need to start my business.
- I made a list of the financial needs I will have within one year of starting my business.
- I made a list of the financial needs I will have within a year or more of starting my business.
- I made a list of where I will get the money to start my business.

VITAE

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Educational studies have resulted in an Educational Specialist in Administration and a Master of Arts Degree from Lindenwood University, St. Charles, Missouri, Master of Science degree in Guidance Counseling from Southern Illinois University at Edwardsville, Illinois, Bachelor of Arts Degree in Sociology and Education from Southern Illinois University at Edwardsville, Illinois.