AFFECTIVE DOMAIN APPLICATIONS IN STANDARDS-BASED EDUCATION

by

Wayne Dion Rumbaugh

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

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ABSTRACT

This research examined the attitudes of teachers toward the affective domain in high versus low levels of standards-based instruction. Teachers from a school district in the suburbs of the greater Seattle, Washington, metropolitan area completed a self-report instrument to determine the level of standards-based instruction they use in the classroom. Confirmation of the level of standards-based instruction was ascertained through expert evaluation of classroom learning activities and a student report assessment. Data from these three sources were triangulated and participating teachers were ranked from high to low standards-based instruction level. Teachers in the lowest and highest levels of standards-based instruction completed the *Attitudes Towards the Affective Domain* instrument. A causal-comparative design was used along with a correlational design. The results were analyzed through a two-tailed *t*-test. In addition, this study measured the application of the affective domain by teachers who use high levels of standards-based instruction practices to determine differences by grade level through the use of a one-way analysis of variance. Student perception of their teacher's use of standards-based instruction in regards to that which was self-reported by their teachers was correlated using the Spearman rank order correlation coefficient. Results of the study showed a significant difference in the attitudes towards the affective domain of high school teachers who utilize a high level of standards-based instruction practices compared to those teachers who utilize a low level of standards-based instruction practices ($t = 2.22$, $p = 0.033$). The findings also revealed a significant relationship ($r = 0.71$; $p < 0.01$) between the level of standards-based instruction practices in high school classrooms as perceived by students and the level as self-reported by their teachers.

Dedication

On October 24, 2014, at Marysville Pilchuck High School, a student opened fire on five other students, killing four of them, before turning the gun on himself. Two years earlier on December 14, 2012 a lone shooter entered the campus of Sandy Hook Elementary School in Newtown, Connecticut, and shot 20 students and six adults, killing all of them. In April of 2007, a 16 year old student murdered 10 people and injured seven others in and around Red Lake Senior High School in Red Lake, Minnesota. In Littleton, Colorado, two teenagers killed 12 students and one teacher at Columbine High School on April 20, 1999. At Springfield High School in Springfield, Oregon, a 15 year old shot and killed two students and injured 23 others on May 21, 1998. On March 24th of that same year, in Craighead County, Arkansas, two adolescent boys shot and killed four students and one teacher and injured 10 others at Westside Middle School.

We will never know the exact causes of these atrocities or what could have been done to foresee these tragedies. The reasons individuals carry out such violence are as varied as they are complex. Attention to the Affective Domain may be one way to help future incidences from occurring.

To the nearly 100 victims of those school shootings mentioned above and the thousands of others who are victims of the many school shootings throughout this country that have taken place; and to the families that will never forget those they have lost, this dissertational research is dedicated as a memorial and recognition that we must all do all that we can to help prevent future atrocities everywhere.

Acknowledgments

On May 25, 1961, John F. Kennedy challenged America to place a man on the moon and return him safely to Earth before the end of that decade. The challenge was given, "not because [it is] easy, but because [it is] hard." Landing a man on the moon is recognized as one of America's greatest accomplishments. I set out to complete my doctoral degree, including this dissertation, for the same reason as that stated by JFK; to accomplish something that would be hard to do. The completion of this dissertation is one of my greatest accomplishments next to the successful raising of our nine children. To my wife, Deborah, and our children, Seth, Travis, Tess, Jessica, Ethan, Amanda, Aarun, Evan and Alyssa, I thank you for your patience, love, and encouragement.

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And finally, most of all, I express my appreciation for, loyalty to, confidence in, and continued trust in my Master, Lord, and Savior, Jesus Christ. His Love, His Support, His Succor, and His tender Mercies have carried me through this journey. It is my testimony, in His name, that He makes it possible for us to accomplish all things—even that which we deem as being "hard."

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CHAPTER ONE: INTRODUCTION

Theodore Roosevelt once said, "To educate a person in mind and not in morals is to educate a menace to society" (Morris, 2009, p. 195). Since the passage of the No Child Left Behind Act schools, administrators, and teachers have attempted to meet the stringent requirements of Adequate Yearly Progress for students' cognitive achievement (McColskey & McMunn, 2000). The No Child Left Behind Act necessitates that educators choose scientifically based research programs and practices for use in their classrooms (Beghetto, 2003).

Charles Haynes of the First Amendment Center stated that for democracy to flourish, public education must play a central role in promoting responsible moral action that serves the common good (Essex, 2012). Race to the Top and Common Core State Standards continue the push for higher cognitive development in children from all backgrounds. Teacher development in character education, and the implementation of character education, results in higher academic performance for students and schools attempting to meet the rigorous requirements of adequate yearly progress (Hough, 2011; Elias, DeFini, & Bergmann, 2010), Race to the Top, and Common Core State Standards. This demonstrates one way in which scientifically based research programs and practices can increase student performance and achievement through the affective domain.

Another classroom reform movement that has shown promise in meeting the demands of No Child Left Behind is standards-based instruction (Thompson, 2009; Johnson, 2002; McCaffrey et al.,2001). Because of the success of standards-based instruction (SBI), more and more schools, administrators, and teachers are incorporating its use in their classrooms (Hamilton, Stecher, & Yuan, 2009). Educators and researchers focus on and take note of the increase in cognitive development of students as confirmed by higher test scores of students

participating in SBI classrooms. For example, Yoon and Resnick (1998), after adapting for the socioeconomic status of students and using a hierarchical linear model found that test scores showed activities associated with SBI resulted in higher performance based exam marks. In a broader study, Mason et al. (2005), with the use of multiple methods and data sources, determined that the effects of SBI resulted in the higher achievement on tests in kindergarten through fourth grade in one underperforming California school district.

While teachers are successfully responding to the cognitive needs of students through the use of SBI, it is unknown if teachers are also attempting to address the affective needs of students when utilizing SBI. The general purpose of this causal-comparative study was to address the question of whether teachers who use a high level of standards-based instruction practices neglect the application of the affective domain in their classrooms. This chapter provides a background summary of the most relevant literature and gives a brief historical, social, and theoretical context for the research problem. The purpose and significance of the study will be addressed along with specific research questions and hypotheses that this study answers.

Background

Defining the term, affective domain, is not an easy task. It is measured in terms of feelings, attitudes, emotions, and values. Fehr and Russell (1984) noted that "Everyone knows what an emotion is, until asked to give a definition". Such is the case with the affective domain. In 1956, Benjamin Bloom and a group of psychologists identified three domains or categories of educational development: the cognitive domain, the affective domain, and the psychomotor domain. Bloom, Krathwohl, and Masia (1973) up-dated the definition of the affective domain to be: "the manner in which we deal with things emotionally, such as feelings, values, appreciation,

enthusiasms, motivations, and attitudes" (p. 11). Since then some researchers (Dettmer, 2006; Hansen, 2009; Myunghee et al., 2010) have developed the terms used by Bloom and others to include expressions such as "the ability to deal with things emotionally" (p. 158). Dettmer (2006), Hansen (2009), and Myunghee et al. (2010) include proper attitudes, self-perceptions, values, ethics, listening, and communication skills, inter-personal skills, intra-personal skills, conflict resolution, accountability, and a willingness to help others. This study takes a broad interpretation for the definition of the affective domain to include those descriptors listed previously and includes that which could be described as character education and, in general, good behavior.

While some educators focus solely on standards, other researchers and educators, such as Hough (2011) and Elias et al. (2010), take a broader approach to teaching the whole child by not only focusing on the cognitive development of the learner, but also on the affective and psychomotor domains. The affective skills to "deal with things emotionally" are recognized as a necessary objective for the learners of today to take with them into the world of tomorrow. Myunghee et al. (2010, p. 158) state that:

> cultural diversity is one of the roots of development in terms of economic growth and a means to realize a more satisfactory intellectual, emotional, moral, and spiritual existence. Individuals should therefore be able to develop skills and attitudes to cope with cultural diversity.

Myunghee et al. went on to say, "Well-developed social skills can also promote personal competencies in the affective domain" (2010, p. 159). Many professions, from the engineering field to medicine, have expressed a need for future job candidates to be better trained in the affective domain and are calling upon educators to fill this need (Lynch, 2009; Neumann &

Forsyth, 2008). Garretz (2010, p. 1) stated that "among [the] content-dependent instructional conditions necessary to attain conceptual understanding, those belonging to the affective domain of teaching and learning must be included in pedagogical content knowledge." This "pedagogical content knowledge" includes emotional and social skill set components defined by appropriate classroom conduct.

In terms of classroom behavior, the amount of teaching time that gets eroded away by student misconduct and disruptive actions contribute to classroom frustrations and academic failure (Van Lier et al., 2004). The teaching and learning process is mired by these behaviors which add to disturbances and a decrease in academic performance by students (Babyak, Luze, & Kamps, 2004; Tingstrom, 1994; Van Lier et al., 2004). Teachers and schools who incorporate affective programs such as *First Step* (Carter & Horner, 2009; Walker, 2000), *Second Steps* (Neace & Muñoz, 2012), *Positive Behavioral Interventions and Supports* (Simonsen et al., 2012), *Functional Behavioral Assessment-Based Interventions* (Gage, Lewis, & Stichter, 2012) and other classroom management programs that accentuate the affective domain, like the *Good Behavior Game* (Leflot et al., 2010), experience a decrease in behavior problems and classroom disruptions and an increase in academic commitment.

As schools, administrators, and teachers intently focus on the cognitive learning of students in order to meet the requirements of NCLB, it is unknown if such programs or other activities that emphasize the affective domain are still in use. The questions of, "What about the affective domain?", "Is the whole child being taught?", and "Are students being prepared with a proper attitudinal focus to be successful in the world of today and tomorrow?" arise. This study will help determine if teachers who use a high level of SBI are taking into account the affective domain as they prepare to teach children in their classrooms. In a study conducted by Erişti and

Tunca (2012), teachers claim that their schools are not funded properly to look beyond placement tests, suggesting that only the cognitive development of the student is what matters. Other researchers (Harriman, 2005; Neill, 2006; Weaver, 2004) posit that with NCLB, students will learn the curriculum, but will not learn to affectively appreciate its value. Brimi (2009) discusses the need for teachers to strike a balance between acting as academic instructors for students and moral guides for young people in an historical context reaching back beyond the modern era of education.

Bolin, Khramtsova, and Saarnio (2005) assess the strategy of journaling to bring about learning in the affective domain and advocate for more studies to be conducted in order to determine effective ways students can learn within the affective domain. Carter and Horner (2007) call for more research into the value of adding function-based supports to established social skill curricula and the integration of effective independent behavioral interventions to increase time in academic engagement. Research conducted by Kiener and Weaver (2011) into the *Scholarship of Teaching and Learning* model, which shares many traits as those found in SBI, suggest that additional research into what teachers are thinking and the affective shifts of students needs to be conducted. This causal-comparative research does exactly as Kiener and Weaver suggest in that it will investigate the attitudes towards, the importance placed on, and the classroom applications of the affective domain between teachers who use a high level of SBI versus those that use a low level of SBI.

Before this can take place in the arena of SBI, research must first determine if the affective domain is being considered altogether. All the books that have been written, articles that have been published, research that has been conducted, and programs that have been administered pertaining to the affective domain and social skill sets in the classroom provide a glimpse into

the likelihood that the affective domain has indeed been addressed somewhere. However, studies delving into the affective domain, within the SBI classroom, are negligible, as evidenced by a lack of empirical research towards that end. This quantitative research, through the use of reliable and validated Likert-scaled instruments, helps determine if teachers are addressing the affective domain in their day-to-day teaching within the practice of SBI by comparing the attitudes towards, the importance placed on, and the classroom applications of the affective domain of teachers who utilize a high level of SBI practices in their classrooms with teachers who utilize a low level of SBI practices in their classrooms.

Problem Statement

Billions of dollars are being spent for schools to implement scientifically researched classroom practices in hopes of meeting their annual yearly progress goals and the demands of No Child Left Behind (Bracey, 2005). As educators turn to SBI as a proven practice for increasing student academic achievement, the affective domain cannot be ignored. Students who are not trained in areas of the affective domain, such as getting along with others, being responsible for themselves, and obeying the rules of the classroom and, in turn, society, can easily be felt in the tax dollars that are used to support the incarcerated and those individuals living off of entitlements who may have difficulty following the rules of society. America needs citizens educated in the affective domain as much as the cognitive and psychomotor domains.

Standards-based instruction is meeting the cognitive needs of students as evidenced by higher academic achievement on state mandated tests and educational research (Thompson, 2009; Johnson, 2002; McCaffrey et al. 2001; Hamilton, Stecher, & Yuan, 2009). Albeit teachers are successfully responding to the cognitive needs of students through the use of SBI, it is unknown if teachers are also attempting to address the affective needs of students when utilizing

SBI. This study will shed light on whether or not teachers attempt to address the affective needs of students when utilizing SBI. Eisner (2010) suggests that while the cognitive domain is being addressed in the classroom, employers desire more positive affective traits in job applicants when hiring new workers. Part of succeeding in the job market is maintaining a job once hired. Hansen (2009, p. 4) points out that "Hiring decisions clearly focus on skill sets, but firing decisions shift to other [affective] concerns." Eisner (2012) calls for future research, such as the research proposed here, to determine if teachers are interested in facilitating the need to build the affective attributes that employees are lacking in today's job market.

Purpose Statement

The general purpose of this causal-comparative study is to address the question of whether teachers who use a high level of Standards-Based Instruction practices neglect the application of the affective domain in their classrooms. The study compares the attitudes towards, the importance placed on, and the classroom applications of the affective domain of teachers who utilize a high level of SBI practices in their classrooms with teachers who utilize a low level of SBI practices in their classrooms. This comparison is made through the use of a 57 item instrument that has been tested for validity and reliability to measure the dependent variable, or affective domain. The independent variable, or level of SBI, is nominal and will be measured through the use of the *Teacher Assessment Form*—a self-report, Likert-scaled survey to help determine the level of SBI practices being utilized by each teacher in their classroom.

A second purpose of this study will utilize a correlational design to investigate if there is a positive relationship between students' perceptions of the use of SBI practices of their teachers to the same perception about SBI as reported by their teachers. This portion of the study will utilize a correlational design approach through the use of the 42 item *Student Confirmation of*

SBI Practices Assessment (Bacon, 1999). This assessment uses a Likert-scale survey to collect data for analysis.

High school teachers who use high or low level of SBI within a school district on the north end of the greater Seattle metropolitan area will be given the opportunity to participate in an assessment designed to measure their attitudes towards, the importance placed on, and the classroom applications of the affective domain. An *a priori* power calculation was conducted in order to determine the optimal number of participants needed for the study; in order to avoid making a Type I error (Howell, 2011), at least 40 participants will be required (n=40) for the one-tailed independent sample t-test with a power equal to 0.80 (α=0.80) and a large effect size equal to 0.80 ($\dot{d}$=0.80). The statistical significance and practical effects of this research are examined and discussed in the methods and results sections.

The instrument results from high school teachers and their students of a public school district 35 miles North of Seattle, Washington are used in this study. The district contains two high schools that are accredited by the Office of the Superintendent of Public Instruction of the state of Washington. The high schools range in size from approximately 1,200 to 2,000 students. Typical high school classes in this region contain approximately 25 to 35 students each. The students took part in this study by completing an assessment designed to confirm the level of SBI that their teacher utilizes in the classroom.

Current research surrounding affective education and its relation to SBI serve as the primary focus of this study. Standards-based instruction was defined by those considered to be the leading experts in the area of SBI (Bacon, 1999; Green, 2007; Thompson, 2009). Results of the assessment will be examined, analyzed, and then compared to determine if a significant difference exists between the teachers' attitudes towards, the importance placed on, and the

classroom applications of the affective domain of teachers who use a high level of SBI practices and those teachers who use a low level of SBI. In addition, an investigation has determined if there is a positive relationship between students' perceptions of the use of SBI practices of their teachers to the same perception about SBI reported by their teachers.

Significance of the Study

The amount of research measuring the effects of Standards-Based Instruction on the cognitive domain is extensive (Akiba et al., 2008; Cai et al., 2009; Thompson, 2009). Much of the research examining the effective use of affective instructional practices in the classroom has been identified through student perceptions or knowledge gained by students within the affective domain (Bacon, 1999). Even fewer studies have investigated variables related to the design and effectiveness of affective-based lessons taught to students in SBI classrooms (Kiener & Weaver, 2011). No research was identified as having investigated the relative level of affective domain activities or objectives that teachers incorporate into their classroom. This dearth of studies may be an indicator of the low priority and lack of significance that teachers place on the affective domain compared to the academic or cognitive instruction of the student. Students who enter society at the end of their high school education who have been trained up in the affective domain will help contribute to, rather than be a hindrance to, society.

Research Questions

This study addresses the following research questions:

1. Do high school teachers who utilize a high level of standards-based instruction practices apply the affective domain in their lessons less than those teachers who utilize a low level of standards-based instruction?

2. What are the attitudes towards the affective domain of high school teachers who utilize a high level of standards-based instruction practices compared to those teachers who utilize a low level of standards-based instruction practices?
3. What are the affective domain applications of different grade levels of high school teachers who utilize a high level of standards-based instruction practices compared to those teachers who utilize a low level of standards-based instruction practices?
4. Do teachers' years of experience with a high level of standards-based instruction practices influence the level of importance teachers place upon affective goals compare to the level of importance that teachers place upon affective goals of teachers that use a low level of standards-based instruction practices?
5. Is there a relationship between the level of standards-based instruction practices in high school classrooms as perceived by students and the level as self-reported by their teachers?

Hypotheses

The null hypotheses for this research are as follows:

1. There is no statistically significant difference in the amount of application of the affective domain between high school teachers who utilize a high level of standards-based instruction practices compared to those teachers who utilize a low level of standards-based instruction practices as shown by *The Teacher Attitudinal Assessment toward the Affective Domain* instrument that has been tested for validity and reliability.
2. There is no statistically significant difference in the attitudes towards the affective domain of high school teachers who utilize a high level of standards-based instruction

practices compared to those teachers who utilize a low level of standards-based instruction practices as shown by *The Teacher Attitudinal Assessment toward the Affective Domain* instrument that has been tested for validity and reliability.

3. There is no statistically significant difference in the affective domain applications for different grade levels between high school teachers who utilize high levels of standards-based instruction practices compared to those high school teachers who utilize low levels of standards-based instruction practices as shown by *The Teacher Attitudinal Assessment toward the Affective Domain* instrument that has been tested for validity and reliability.
4. There is no statistically significant difference in the level of importance teachers place upon affective goals between teachers that utilize high levels of standards-based instruction practices and those teachers who utilize low levels of standards-based instruction practices in terms of their years of experience as shown by *The Teacher Attitudinal Assessment toward the Affective Domain* instrument that has been tested for validity and reliability.
5. There is no statistically significant relationship between the perceptions of students on the level of standards-based instruction practices in high school classrooms to that which is self-reported by their teachers as shown by *The Student Confirmation of SBI Practices Assessment* and the *Teacher Assessment Form* that have been tested for validity and reliability.

Identification of Variables

The independent variable for this research is the level of use of standards-based instruction practices in the classroom. The literature provided by national agencies such as the

National Academies (2012), Trends in Mathematics and Science Study (TIMSS, 2011), and Rhode Island Board of Regents (2009); and professional development providers like the National Council of Teachers of Mathematics (2012) and the Mayerson Academy (2010); along with researchers and experts in the area of SBI such as Thompson (2009) and Green (2007). These national agencies, Academies, and SBI experts suggest that SBI practices in the classroom contain student self-assessment, group-based projects, inquiry-based activities, use of technology including calculators, computer programs, and I-pad type devices, as well as hands-on experiences. For the purposes of this study SBI includes the following classroom characteristics:

- student use of manipulatives or hands-on materials;
- incorporating inquiry, discovery, and problem solving approaches;
- using scenarios from naturally occurring events and everyday life for groups of students to research and investigate using subject concepts;
- applying subject concepts to real-world contexts such as banking, energy concerns, environmental issues, and timelines;
- connecting topical preparation skills to specific careers and occupations;
- using calculators, computers, and technologies for capturing and analyzing original data from original experiments and/or learning activities. (Thompson, 2009, pp. 53-54)

These same types of characteristics are identified by Green (2007), the description of which contains teaching strategies wherein:

> teachers need to be clear (themselves) about what they expect their students to know and be able to do by the end of a specific lesson, unit, or term (based on the standards); teachers need to tell their students what they expect them to know and

> be able to do; teachers need to teach students the knowledge and skills they'll need to show mastery; teachers need to check (assess) to see if the students have learned what the teachers expected them to; teachers need to report to the students whether or not they've learned it; teachers need to re-teach as needed and whenever appropriate. (p. 14-15)

Another way to recognize standards-based instruction is to identify what SBI is not. Non standards-based instruction primarily utilizes activities such as teacher lecture, individual student drill and practice worksheets or homework assignments, and drill and practice exercises.

Participating teachers submitted a list of the classroom learning activities conducted in their classroom for five consecutive days, along with a description of each activity, in the form of lesson plans or through an interview conducted by this researcher. The purpose of gathering this data was to determine the practices of the teachers in the classroom. The classroom learning activities were then evaluated by experts in the education field. These practices set an initial level of SBI that each teacher utilizes in relation to the other participating teachers and in accordance to Thompson, Green, and Bacon.

A validity check to confirm the level of SBI by each teacher came in the form of a self-report assessment on whether the teacher practices the characteristics associated with a high level of SBI practices in their classroom or if they are associated with a low level of SBI practices in their classrooms. The definitions and characteristics of SBI was included on the survey for teachers to read, comprehend, and “check off” as to whether or not they perform each characteristic on a regular basis. This checklist helped differentiate between those teachers who are considered to be at a high level of SBI practices in their classrooms as opposed to those

teachers considered to be at a low level of standards-based instruction practices in their classrooms.

In addition to an evaluation of the classroom learning activities of the participating teachers by a group of experts in the field of education and the teacher self-report on the level of SBI practices that are carried out regularly, a third validity check was utilized to confirm the level of SBI characteristics carried out by teachers as determined by students taking a survey instrument designed by Bacon (1999) for this very purpose. These three perspectives provided a triangulation of data that concretely established the level of SBI implementation of each participating teacher.

The portion of this confirmation wherein students' perceptions of the use of SBI practices of their teachers, compared to that which is self-reported by their teachers, comprises the second part of this study which utilizes a correlational design. The variables for this portion of the study are the level of SBI practices in high school classrooms as perceived by students; and the level as self-reported by their teachers.

The causal-comparative part of this study also uses the level of standards-based instruction practices as an independent variable, and in addition will take into consideration the independent variable of number of years of experience that teachers have with SBI. Another independent variable will be the specific grade levels that teachers who use SBI prefer to teach.

The dependent variables for the causal-comparative research are teachers' attitudes towards the affective domain, including the importance that is placed on the affective domain and classroom applications of affective objectives used by teachers. These dependent variables are compared between those teachers who use SBI practices at a high level and those teachers who use SBI practices at a low level in their classroom.

In research questions one and two, the use of high or low levels of SBI practices in the classroom is the independent variable and has two levels, and is nominal. The dependent variables, the application of the affective domain and the attitude of teachers towards the affective domain, are ordinal. Therefore, a two-tailed independent sample *t*-test was conducted for the dependent variable to determine if the null hypotheses should be accepted or rejected. This is an appropriate statistical strategy for these questions because the independent variables are dichotomously categorical with participants being assigned to either a high or low level of SBI practices. The independent variables are ordinal, the participants are different in each category, and the data met the assumptions of parametric testing which included using a sample variance to estimate the population variance and assumed the population from whence the sample is procured is normally distributed (Howell, 2011).

In research questions three and four, the independent variable remains high and low-levels of SBI practices, but includes four sub-factors for each question: the grade level taught—grades 9, 10, 11, and 12, and the number of years in teaching experience which will be categorized into four groups as well. These independent variables are categorical. As in questions one and two, the dependent variables for questions three and four remain the application of the affective domain and the attitude of teachers towards the affective domain. A two-way analysis of variance (ANOVA) will be utilized to analyze the data and determine if the null hypotheses should be accepted or rejected. An ANOVA is appropriate for these questions because more than one independent variable exists: high and low-levels of SBI practices; with four sub-factors for each question. An ANOVA's versatility allows for testing the statistical significance of group differences on each factor (Gall, Gall, & Borg, 2005). Bicak (1999) used a

one-way ANOVA to compare grade level, number of years teaching, and the application of the affective domain between three different categorical subjects taught.

For the fifth research question, the variables are the level of SBI practices in high school classrooms as perceived by students; and the level as self-reported by their teachers. The data collected for these variables will be placed in rank order. The correlation between these variables will be determined through the use of the Spearman Correlation Coefficient. This statistic is appropriate for this research question because it shows the degree of relationship between two variables that are arranged in rank order. The null hypothesis will be rejected if the two ranks are dependent.

Definitions

Affective Domain: Includes the way in which students learn to deal with things emotionally, such as attitudes, values, enthusiasms, appreciation, motivations, and feelings (Bloom, 1956, p. 7).

Cognitive Domain: Refers to gaining knowledge connected with intellectual abilities, skills, and recollections that provide for ways and means of dealing with such things as specifics within a field of study, the universals and abstractions in a field, comprehension, analysis, synthesis, and evaluation among other psychological processes of intellectual abilities, skills, and recollections (Bloom, 1956, p. 7).

Psychomotor Domain: The recollections involving bodily movements and other physical associations and the ability to perform such recollections (Bloom, 1956, p. 7). The psychomotor domain consists of physical movement, coordination, and the use of motor-skills. Development of these skills entails physical practice and is calculated on conditions of speed, accuracy,

distance, procedures or methods (Simpson, 1972), imitation, manipulation, precision, articulation, and neutralization (Dave, 1975) in carrying out physical tasks.

Standards-Based Instruction: Bacon (1999), Green (2007), and Thompson (2009) identify standards-based instruction as that which includes the following criteria in the classroom:

1. Teachers/Students know the standards and how they are aligned to assignments;
2. Students know how to reach standard/Use of scoring rubrics;
3. Differentiated instruction and Interdisciplinary activities provided;
4. Students have flexible use of time;
5. Students re-learn/re-do assignments;
6. Students work cooperatively in groups; and
7. Teacher cares for students/Students have high self-esteem and take responsibility.

Research Summary

One facet of this study was to determine if a correlation exists between students' perceptive use of SBI practices by their teacher in relation to that which is self-reported by their teacher. For this portion of the study, a correlational design was used. A correlational analysis is best suited to understand the direction and magnitude of the associations between perceptions. A correlational design also provides information concerning the degree of the relationship between the variables being studied (Lomax & Li, 2009). This helped to confirm the degree of SBI that each teacher in the study utilizes and allowed for the triangulation of data that sorted the teacher participants into high and low levels of SBI. The causal-comparative analysis of the 20 highest

and 20 lowest levels of SBI practicing teachers and their attitudes towards, the importance placed on, and the classroom applications of the affective domain then commenced.

For the correlation design analysis, mode, median, range, variance, kurtosis, and skewness were evaluated for normality and variance. Comparative and inferential statistics were conducted using a one way analysis of variance to determine relationship in the perception of students by grade level. A Spearman's Rank Correlation Coefficient was computed to determine the existence and strength of relationships between the total scale score, scores of individual items, and scores of groups of items in comparison with each other. The instrument, the Student Confirmation of SBI Practices Assessment, is a 43 item Likert-scaled survey.

A causal-comparative design was used for four of the five research questions—that which deals with the teachers' attitudes towards, including the importance placed on, and the classroom application of the affective domain. A causal-comparative study is a type of quantitative investigation that seeks to discover possible causes and effects of a characteristic by comparing individuals in whom it is present with individuals with whom it is absent or present to a lesser degree (Gall, Gall, & Borg, 2007). Causal-comparative research is often associated with being *"ex post facto"* or "after the fact," in which the independent and dependent variables are observed and measured after the manipulation of variables has already occurred. However, there are many research studies which make the claim of being causal-comparative which are not categorized as *"ex post facto."* Usually these research studies, as is the case with this study, encounter variables that are either impossible or unreasonable to impose a treatment (Rose, 2012). The use of pre-existing groups to search for differences between those groups on dependent variables is a common trait of causal comparative research designs (Schenker & Rumrill, 2004). In this case, it is unreasonable, and perhaps even unethical, to impose on a

teacher, the use of SBI practices which can affect the experience of the children in the classroom. Ergo, this study provides teachers within the state of Washington the opportunity to assess their attitudes towards, including the importance placed on, and the classroom applications of the affective domain.

The study contains quantitative analysis of the results of the Teacher Attitude toward the Affective Domain Inventory survey taken by high school teachers. This survey includes 57 items, most of which are rated on a Likert-scale model. Data from the instrument was evaluated to determine equal variance and normality. As such assumptions were met, and since there is one continuous outcome variable, namely the attitudes towards, the importance placed on, and the classroom applications of the affective domain, and two levels within the independent variable, high and low levels of SBI practices, along with different participants in each category, an independent sample *t*-test was appropriate for use in evaluating the data for the causal-comparative analysis (Howell, 2011). The data include frequency distributions, median, and percentiles. The nonparametric Mann-Whitney *U* test would have been computed if assumptions for the independent sample one-way *t*-test were not met.

CHAPTER TWO: REVIEW OF THE LITERATURE

The purpose of this study is to determine if teachers who use standards-based instruction practices in their classrooms at a high level have different attitudes towards, place a higher importance on, and apply their affective goals less than teachers who utilize SBI in their classrooms at a low level. The previous chapter provided reasons for the importance of this study. This chapter discusses how standards-based instruction has shown promise in meeting the demands of No Child Left Behind, what makes SBI a success, and shows how the affective domain can be used to teach students the ideals and values that are lacking from society today.

The chapter begins with an historical background into the pedagogical perspectives of some of the great educational thinkers of all time. The historical background also includes how the theoretical concepts came about to where they are today. This is followed by a conceptual framework of the cognitive, affective, and psychomotor domains of Bloom's taxonomy. The evolution of these domains is discussed, thus highlighting the important contributions made to Bloom's taxonomy since its inception in 1956.

A review of the literature is provided with an in-depth look at the student benefits derived from the use of the cognitive and affective domains by educators and how some professional fields are recommending the use of Bloom's taxonomy, with an emphasis on the affective domain to prepare students to enter the workforce more equipped to be contributing members of society. Research into how the affective domain has been used to motivate students toward higher academic achievement is reviewed, while at the same time some teachers may be pushing the affective domain aside as they focus solely on reaching national and state mandated testing standards. The literature shows that students' attitude, a major component of the affective domain in teaching, has a significant impact on student academic achievement. Standards-based

instruction and the promises it makes toward student achievement is studied. How teachers are being trained to use standards-based instruction in professional development courses and if teachers are taught to utilize the affective domain therein are examined.

The procedures and methods used in researching the literature was to first find how the affective domain had been addressed historically since it was first recognized or described by early leading educators. A parallel search was conducted for that of SBI. From this foundation, a broad view of the affective domain and SBI was considered. The broad view allowed for the intersections of these two topics to be focused upon and have been reported as they pertain to this study.

Historical Background of the Cognitive, Psychomotor, and Affective Domains

In 1689, John Locke, as presented in his essay, *Concerning Human Understanding,* ascribed to the idea that children are as "white paper"; a blank slate to be easily written upon with ideals and values from parents and society (p. 61). Such ideals and values are wrought upon by children "by degrees"; here a little and there a little, "even of the ordinary ideas till he were grown up to be a man" (p. 63).

This philosophy, accepted by many and debated by others received clinical affirmation in the mid-to-late twentieth century when neurologists, pediatricians, and psychiatrists found that the ability to reason and feel emotions begin to intermingle from birth and carry on for the remainder of one's life (Damasio, 1994; Greenspan, 1997; Konner, 1991).

Jean Jacques Rousseau built upon Locke's ideal in *The Social Contract* (1762), when he posited that children are born as being considered good by their nature from which parents and society have an opportunity to add their philosophies and teachings deemed important by them and the common good. According to Rousseau, this education should take place as naturally as

possible; allowing for the child to maintain a freedom of choice while remaining in a secure environment (Gutek, 2005).

In early colonial America, educators focused on teachings from the Bible to instill Christian values that marked the predilections of the day and were supported by the larger adult populace (Lickona, 1993). With the birth of a new nation, this education in character shifted away from a religious context to a more secular view of morality, combining the two into a fusion of Christian and middle class beliefs (Ingall, 2002). Horace Mann's *Common Schools* continued this tradition with a Protestant outlook that reached out to an increasing number of immigrant children (Baines, 2006). As students began to be grouped by age and grade level, character education took on the values of punctuality, honesty, regularity, duty, obedience, self-control, and silence (Chapter two, 2004). May and Hartshorne (1930) conducted a study that criticized the direct instruction of those values and came to the conclusion that those practices in character education made no positive effect toward the moral behavior of students. Later, after two world wars, the country's emphasis turned toward educational goals that favored technical skills needed to live in a modern era while competing in a Cold War against the Soviet Union.

Character education would not go ignored however. Benjamin S. Bloom, in 1956, introduced *Taxonomy of Educational Objectives, Handbook I: The Cognitive Domain*. It was then that the cognitive, psychomotor, and affective domains were first identified and defined. These domains provide a categorical system for which students learn and teachers teach. Within the bounds set by Locke and Rousseau, Bloom recognized how the blank slate could be etched upon and the different ways in which the child can be influenced. According to Bloom, a student gaining knowledge connected with intellectual abilities, skills, and recollections that provide for ways and means of dealing with such things as specifics within a field of study, the universals

and abstractions in a field, comprehension, analysis, synthesis, and evaluation among other psychological processes of intellectual abilities, skills, and recollections; could be associated with the cognitive domain. Those recollections involving bodily movements and other physical associations, Bloom would categorize under the psychomotor domain; something Bloom and his associates left to other educators to develop more fully. The affective domain would be related to the "interest, attitudes, and values, and the development of appreciations and adequate adjustment" of the student influenced through and by the educator (p. 7).

In 1964, Bloom was joined by David R. Krathwohl and Bertram Masia in producing the *Taxonomy of Educational Objectives, the Classification of Educational Goals Handbook II: Affective Domain*. This writing updated the definition of the affective domain to include the way in which students learn to deal with things emotionally, such as attitudes, values, enthusiasms, appreciation, motivations, and feelings.

While Bloom, Krathwohl, and Masia were developing the concept of the affective domain, the work on the psychomotor domain would be established by others. Simpson wrote *The Classification of Educational Objectives in the Psychomotor Domain* (1972). This book established that the psychomotor domain consists of physical movement, coordination, and the use of motor-skills. Development of these skills entails physical practice and is calculated on conditions of speed, accuracy, distance, procedures, or methods in carrying out physical tasks.

Also published in 1972 was Anita J. Harrow's *A Taxonomy of Psychomotor Domain: A Guide for Developing Behavioral Objectives.* Harrow included fundamental movements, reflex movements, perceptions, physical abilities, and skilled movements in her compilation of the psychomotor domain.

In 1975, Harrow and Simpson were joined by Dave in publishing the book *Developing*

and Writing Behavioral Objectives. Dave recognized the terms of imitation, manipulation, precision, articulation, and neutralization as describing the psychomotor domain.

Conceptual Framework

Theorists continued to evolve the research of Bloom and other researchers. Of recent publications that are noteworthy is Dettmer's (2006), *New Blooms in Established Fields: Four Domains of Learning and Doing* (2006). Dettmer expanded the number of domains to include a category she called the "social domain" (2006, p. 73); something other researchers and theorists have begun to take hold of (Grusec & Davidov, 2010; Richardson, Mulvey, & Killen, 2012). Dettmer, in addressing the concept of the cognitive domain, implied that in this category, imagination and creativity are not given their due acknowledgement. Concerning the affective domain, Dettmer expands the concept to include "feeling aspects of imagination and creativity" in applying aspects of the cognitive domain and "aspiration toward innovative ideas and self-expression" (2006, p. 74). The psychomotor domain, according to Dettmer, needs to deemphasize the learning of physical movements for the sole purpose of performing in sports, and should reemphasize basic movements that make the daily tasks of simply living possible. This reemphasis towards basic movement falls in line with what Harrow theorized.

In discussing the educational reform movement, Hyland (2010, p. 522) expresses a concern over the "timid, lackluster and indiscriminate" way that the affective domain learning outcomes have emerged. He also believes that "there should be a more vigorous and systematic re-emphasis of affective objectives," stating that "an education that fail(s) to address such issues is bound to be one-sided and incomplete." It is worth determining if educators are becoming "one-sided and incomplete" in their day-to-day lesson planning through neglect of the affective domain or if students will indeed be able to appropriately deal with the affective objectives

commented on by Hyland.

If such affective teaching is to take place, it must first be recognized and then be evaluated. Much research supports the affective domain as an important aspect in education, but few provide a means whereby it can be measured. One such possible means of measuring the affective domain as a part of educational performance is submitted by Kang et al. (2010). Myunghee et al. (2010) point out that the indicator of educational performance which they test in their research is a valid instrument for measuring both the cognitive and affective domains of student learning outcomes.

Another recent and validated instrument is offered from Rovai et al. (2010). Their nine item instrument is designed to assess learning in the cognitive, affective, and psychomotor domains.

The Promise of Standards-Based Instruction

When No Child Left Behind called for the development and use of teaching techniques that would raise student achievement, standards-based instruction was an option that many districts across the country turned toward to meet this requirement. As SBI continued to expand in use, the attention it received encompassed the nation. By way of report in the book titled *Troublemaker: A Personal History of School Reform since Sputnik*, SBI is now used in virtually every state:

> The [standards-based] concept has taken root across most of the land that states should set standards for schools and students, should monitor performance in relation to those standards, and should deploy incentives, rewards, and interventions to effect greater achievement gains than would naturally occur.

> That's the steady message when governors and business leaders gather. The public endorses it in surveys and opinion polls. Several key national education groups have made it part of their policy portfolio. And it has spread almost everywhere. Iowa was the last holdout, for years refusing to set statewide standards, but under the pressure of No Child Left Behind, it, too, is moving in that direction. (Finn, 2008, p. 246)

Standards-Based Instruction in the Cognitive Domain

Standards-based instruction has shown promise in more than just theory. Empirical evidence has been provided by Thompson (2009) who measured the effectiveness of SBI on mathematics and science students' academic achievement. The study examined the effectiveness of a three tiered model engaging in teacher preparation and practices in SBI and the resultant student performances. Over 400 classrooms were examined using multiple regression analysis to establish which specific teacher practices are important providers to students' success. Thompson's results demonstrated:

> a viable framework for empirically validating the effectiveness of Standards-based Instruction as a successful reform effort for systemic change in math and science education. The empirical evidence produced by this study provides rigorous support for specific SBI practices as key contributors to students' math and science achievement and refutes non-SBI practices as effective contributors to students' math and science achievement. (p. 61)

The Thompson results confirmed Johnson's (2002) conclusions that had identified the SBI reform effort as an important forecaster of student academic achievement in her book titled *Using Data to Close the Achievement Gap*. There Johnson establishes the practice of using

student performance data, an important component of SBI, to determine the effectiveness of teacher practices.

McCaffrey et al. (2001) took into consideration student background characteristics and previous mathematic skills in their study. Using tenth-grade student data during a one year period from some students taking integrated math courses and other students taking an algebra and geometry sequence, McCaffrey et al. (2001) measured instructional practices through a teacher questionnaire, and student achievement was calculated using both the multiple-choice and open-ended portions of the Stanford achievement tests.

McCaffrey et al. (2001) found that teachers who engaged in reform based teaching, such as those associated with SBI, had students who scored significantly higher on validated tests than those students in classes with a more traditional approach to teaching. McCaffrey et al. (2001) offered an explanation for what makes SBI a success. These researchers assert that the teaching practices of standards-based instructors who provide a wide range of learning activities are increasingly differentiated toward student learning styles more so than traditional teaching practices.

Standards-Based Instruction in the Psychomotor Domain

Teaching practices of SBI in the psychomotor domain are often associated with physical education. Scruggs (2007) researched the measurement on the amount of physical activity that over 180 middle school students attained in the average physical education class. His study compared the measurement most often used, that of teacher observation, to the use of pedometers, which are used by teachers engaged in SBI. The study revealed that measuring students' physical activity using pedometers more accurately showed that 78 percent of the participants met the physical activity recommendation of being active 50 percent of the lesson

time and only 68.9 percent of the students met the standard when measured through direct teacher observation. Scuggs suggested that although physical activity in the psychomotor domain is an important part of physical education classes, the cognitive and affective domains should not be ignored.

In another psychomotor domain study involving SBI practices, James, Griffin, and France (2005) conducted a case study to determine a teacher's perceptions on trying to implement tests aligned with standards proposed by the National Association for Sport and Physical Education and to determine the perceptions of the teacher's 46 students about the tests. Data was collected both quantitatively and qualitatively through the use of a Likert-scale attitude assessment and through interviews involving 27 of the teacher's students. James et al. (2005) concluded that students performed better in physical education classes when assessments were aligned with the standards that students were expected to achieve and that learning was enhanced. When students were made aware of the standards set for them, a practice found in SBI classrooms, students put forth greater effort and student achievement improved. In addition to this, the value that students placed on physical education increased and the level of teaching and learning also improved.

A possible explanation for the increased performance of students in the James et al. (2005) study is that aligning assessment to the standards for which students are expected to achieve, allows teachers the ability to reteach specific areas of the curriculum of which students did not demonstrate a preferred level of proficiency—something that Johnson advocates in her previously mentioned book. This also leads to teachers seeing more clearly associations between assessment and the instructional process.

Learning Domains

Student Benefits from the Cognitive and Affective Domains

The cognitive and affective domains are said to be, by some researchers (Hall, 2010; Garritz, 2010), inseparable. One without the other leaves the first incomplete and the other unnecessary. Malikow (2006, p. 36) made the statement: "Affective domain teaching occurs simultaneously with teaching in the cognitive domain, never in lieu of it." Stenzel (2006, p. 9) purports that "academic success require(s) that instruction and assessment be focused on the levels of the affective domain of learning and teaching." Putting this concept into perspective is Stiggins (2005) who once said of the affective domain:

> Motivation and desire represent the very foundation of learning. If students don't want to learn, there will be no learning. If they feel unable to learn, there will be no learning. Desire and motivation are not academic achievement characteristics. They are affective characteristics. (p. 199-200)

As such, the affective domain has been shown to have an important impact on student learning (McConnell & van der Hoeven Kraft, 2011).

Carter and Horner (2007) demonstrate this in their study in which the effects of adding individualized affective domain support to the early intervention program First Step to Success was researched. A single-subject multiple-baseline design was utilized with three students in kindergarten through first grade who did not react well to the usual First Step to Success protocols. A functional behavioral assessment and individualized function-based support plans were added to the First Step procedures. The study was limited by its use of at home interventions, data not collected at given intervals during the intervention phase, testing effect, wherein participants may have recalled the first test taken, and threats to internal validity.

Nonetheless, the study revealed an increase in academic engagement and a decrease in problem behavior with the introduction of individualized affective domain support to the regular First Step plan for all three students. Carter and Horner call for more research to be conducted that will address the incorporation of individualized affective domain support with other standardized interventions.

Seeshing Yeung et al. (2010, p. 67) state that "[s]tudents' learning experiences in different domains have distinctly different influences on their development of competence beliefs and interest in learning." Intuitively, improving one's attitude toward a subject would suggest a more likely outcome that the individual would continue to have interest in that subject. In support of such intuition, Özgün-Koca (2010) reported that students' affective response to a mathematics course including their beliefs, attitudes, emotions, and values toward mathematics, had an influence on their interests and achievement and the students' future career choices. Included in the article are suggestions for teachers on how to use the information to develop student interest in a mathematics career. Here, like Rousseau, Aslı Özgün-Koca is encouraging the interest of the child to determine the future topics of learning. The study shows the importance of developing the affective domain to foster future growth in the field of mathematics. A 2009 news release identified a mathematician as the number 1 occupation in the United States in terms of environment, income, employment outlook, physical demands, and stress (Needleman, 2009).

Hall (2010) speaks to the case of students completing an accounting class wherein they have yet to receive a "complete educational experience" despite being able to "record transactions and produce financial statements expertly." These same students may have "little to no respect for the accounting profession or the ethical standards that govern it" (2010, p. 2). An

accountant trained up in the field on a cognitive level without the affective attitudes that are desirable will soon be of little value to those that hire such an individual.

Employers in general are looking for more affective traits in their hiring practices. A study performed by Eisner (2010) relating to the job market and the economic downturn beginning in 2007 shows which skills are present in job applicants and which skills are lacking the most and indicates that teachers may not be addressing the affective domain. Eisner shows that employers are seeing a high level of skills from recently hired employees relating to computer competency and communication—cognitive traits. Those skills that are cited as lacking the most include a strong work ethic and interpersonal and teamwork attributes—affective traits. The Eisner study also cites the depressing numbers of unemployed workers in America between 2007 and 2009 suggesting that if graduates want to find jobs, they will need to demonstrate the affective skills necessary to compete in the competitive job market. Eisner used statistical data from existing studies of different practitioner groups, current literature, and both firsthand qualitative and quantitative studies to determine that "students should possess interpersonal, conceptual, and informational ability, coupled with drive and adaptability" (p. 41). Some of the characteristics specific to the affective domain are "attitudinal factors ranging from professionalism and work ethic to time management, political savvy and positive affect" (p. 41). Eisner's study is limited in its use of data that is derived from a variety of sources that have unique interests from one another which explains why some employee traits were found to be highly desirable in some reports, but completely overlooked in other reports. A note relating to the importance of this study is pointed out by Eisner in a call for future research to determine if teachers are interested in facilitating the need to build the affective attributes that employees are lacking in today's job market.

Using the specific example of engineers, a mathematically related occupational field, has demonstrated a need for new workers competent in the affective domain. Lynch et al. (2009) of the American Society of Civil Engineers are not concerned with students' cognitive abilities coming out of college. Their main concern is with students' abilities that would be categorized as affective. They call for and have a vision of future engineers that not only show competency in cognitive engineering skills, but competency in the affective domain as well.

Vanasupa, Stolk, and Herter (2009) offer a possible solution to the engineers' problem. They have developed a guide for the instructor of future civil engineers to use which establishes the importance of the cognitive, affective, and psychomotor domains so as to establish lesson planning that will answer the call and "need for a skill set that includes teamwork, moral, ethical, and social development, as well as lifelong learning and systems thinking skills" (p. 67).

Providing an education in the affective domain is also a concern for those who train individuals in the medical field and Health Sciences. Neumann and Forsyth (2008, p. 249) recognize the significance of affective training in the health care industry: "Learning in the affective domain is a long-term process, ripe for cultivation throughout one's education and the socialization process. Further…instilling professional qualities in nurses, such as ethics, directly impacts patient care." They also recognize the challenges: "Teaching in the affective domain demands strong educational skills of instructors that extend beyond traditional lecture" (2008, p. 252).

Providing at least one possible means whereby the Health industry can reach the affective domain for those they train are Stupans, Scutter, and Sawyer (2011). Their learning model includes opportunities to scaffold learning concepts of professionalism focusing on tutorial discussions. This process provides for affective domain learning in other professions as well.

Taylor and Galligan (2006, p. 23) studied the effects on the affective domain of interactive multimedia. They report on "the design, development and evaluation of an interactive multimedia resource designed to explicitly address students' beliefs and attitudes towards mathematics by following five characters as they progress through the highs and lows of studying a preparatory mathematics course." The results established that it is possible to take into consideration the affective domain through multimedia learning projects and activities; and that despite a focus on computer mediated communication, affective goals for learning can be accomplished within the online environment.

Placing the cognitive and affective domains hand-in-hand, the field of science is often considered as the next of kin to mathematics or vice-versa. Littledyke (2008) makes the argument that the cognitive and affective domains should be integrated in a science education program that is meant to inform environmental education for students as a means to produce students that recognize their relationship to the environment and a sense of responsibility for its care followed by informed action.

The chemical industry is facing similar challenges. Kok Siang et al. (2006) report growing criticism about environmental concerns and the industry's harmful implications. To thwart such reports, the authors suggest:

> Schools need to focus on the teaching of affective objectives of the chemistry curriculum so that students will be able to appreciate chemistry and its relevance in their daily lives. It is only through interplay of the cognitive and affective factors in the learning experiences of students that they can be molded into knowledgeable and motivated citizens who understand the importance of chemistry in general and the chemical industry specifically. (p. 59)

Kiener and Weaver (2011) show that in general, students employ learning strategies that are both cognitive and affective in nature. To answer the question of "what students were thinking and understanding as they progressed through a semester" (p. 3), Kiener and Weaver qualitatively interviewed 53 mostly graduate students from a small university in small group settings with some more in-depth individual interviews. The study was limited by its use of post-secondary graduate students in a particular field making the results less generalizable. Furthermore, the number of individual interviews conducted was negligible. The results indicated that students employ both cognitive and affective learning strategies throughout a semester. Kiener and Weaver (2011) called for further investigations to determine what teachers are thinking as they progress through a term and additional research into affective changes.

Affective Domain as a Motivator

In a study about how teacher education programs should train candidate teachers to teach to the affective domain, Otote and Omo-Ojugo (2009) show that those teachers who are trained to incorporate the affective domain effectively produce evaluations that are more reliable. The study took place in Nigerian secondary schools where teachers are "under pressure to make their impact on society through the development of values that promote civic responsibility." The authors propose that "education is one of the active media for influencing this attitude. The teaching and learning of attitude falls under the affective domain of learning" (p. 654).

To better refresh, recapture, and motivate learners, Hall (2010) suggests that "regular affective assessment" be utilized by teachers in the classroom. She states, "[S]ignificance and absolute necessity of regular affective assessment and the ways in which data obtained through such assessments may be used" to discuss and determine how to show that students perform better academically when affective traits, such as attitudes, values, dispositions, and ethical

perspectives, are properly and continually assessed (p. 7).

Such affective assessments are recommended to take place several times throughout a course. For example, a math teacher chooses to conduct affective assessments throughout the semester with several students who are considered to be struggling. The first assessment is intended to monitor the students' self-confidence in solving math problems and their attitudes toward math in general. This assessment shows that students, for the most part, loathe the idea of doing math. Over the course of several weeks, however, affective assessments show that students have gradually improved their perceptions in regards to doing math and are feeling more confident in their abilities to solve math problems. The teacher then discovers a dramatic decrease in students' affective levels. This should motivate the teacher to think upon the content that was taught, how the content was presented, and other pertinent aspects that took place since the last encouraging affective assessment. From these assessments, the teacher can make a response to intervention by modifying instruction, changing the nature of assignments, or recognize areas that may need to be changed in future courses.

Popham (2011) explains why the affective domain is essential in making connections to students' future motivations and academic success:

> The reason such affective variables as students' attitudes, interests, and values are important to us is that those variables typically influence future behavior. The reason we want to promote positive attitudes toward learning is because students who have positive attitudes toward learning today will be inclined to pursue learning in the future. The affective status of students lets us see how students are predisposed to behave subsequently. (p. 233)

Students who achieve academically are not guaranteed to be well rounded in the other

domains of education outside of the cognitive sphere of learning. Such a lack of student affect can have unintended consequences. Hall (2010) offers an example of a foreign language class wherein a student passes the cognitive aspects of the course successfully with the ability to speak, read, write, and comprehend the language fluently with an understanding of proper verb usage and knowledge of the culture. However, the student may not have a value in, or a respect for the language or its accompanying cultural diversity. Such can be the case when the cognitive domain is solely focused upon at the exclusion of the affective domain resulting in an incomplete and unfinished educational experience.

While determining the effect of the affective domain on student motivation, it can be expected that other factors, such as the teacher, student achievement, and student gender, may play a role in the level of motivation attributed to the affective domain. However, Bolin, Khramtsova, and Saarnio (2005) in their research study, *Using Student Journals to Stimulate Authentic Learning: Balancing Bloom's Cognitive and Affective Domains*, found that after controlling for the teacher, student achievement, and student gender, that "course expectations and affective journal outcomes were important correlates of student evaluations of course outcomes" (p. 154). Their study consisted of 172 students at a state university participating in five sections of an introductory psychology class required to be taken by all students at the school, regardless of their chosen field of study or major. The journal writing assignments were made up of a series of prompts for which students responded on course topics relative to personal experiences. At the end of the term, students responded to a survey on their use of journals throughout the course. The study ignored measurement error and relied on exploratory methods to determine the items on each scale. Also, other confounding variables, such as instructor gender, type of course, time of day, student learning style, and types of instruction were not

taken into consideration. While student learning was not measured, the results did demonstrate higher evaluations of course outcomes with affective journal writings. The researchers suggested that future studies be conducted exploring other viable instructor provided affective domain learning strategies in addition to journal writing.

Corroborating these results were van der Hoeven Kraft et al. (2011), who propose a model for teachers to address the affective domain and contend that "to motivate student learning, the affective domain - emotion, attitude, and motivation - must be engaged" (p. 71). They also call for additional research to be conducted to comprehend the implications of engaging students in the affective domain.

Grootenboer (2010) discusses the growing requisite for college classes and programs to improve students' affective characteristics such as attitudes, beliefs, dispositions, and values at the university level. His study sought out the ways in which academics came to determine which appropriate qualities to choose for their subject areas and the pedagogical approaches they would use to increase them. Participants in the study reported having trouble with teaching and assessing affective characteristics due to policies by the university that were found to be inadequate, though some teaching strategies were determined to be effective. Grootenboer (2010) calls for further studies and scholarship into the area of affective domain research.

Affective Domain Pushed Aside

The cognitive domain is of central focus during these times of educational reform and accountability. As such, most teachers do not give their efforts towards addressing the affective domain and even fewer fail to a assess it (Hall, 2010). As teachers cater to state standardized testing, their focus may shift away from the affective domain and place more emphasis on just the cognitive portion of what students need to learn. Such was found in the study performed by

Noll and Oswald (2010) who reported that "teachers noted that time constraints and 'high stakes testing' pressures constricted direct attention to the affective domain. Despite this, data analysis revealed that many teachers integrated some student-centered activities that supported the affective domain into their instructional practices" (p. 335). How much of the overall lessons developed by the teachers devoted to the affective domain in comparison to the cognitive and/or psychomotor domains were not discussed.

In a case study involving four fifth grade teachers of mathematics implementing a new constructivist curriculum, Chiu and Whitebread (2011) analyzed both cognitive and affective aspects of the teachers' practices through a process of interviews and direct classroom observations. The study's findings were triangulated through inter-coder reliability, training for coding, multiple sources of data, and quantitative analyses. The results showed that cognitive issues were found to be dealt with more effectively than affective issues by all four teachers. The Chiu and Whitebread (2011) study signifies a need for the analyzing of teaching in the area of affective as well as cognitive components.

Related to the Noll and Oswald (2010) study is another study performed by Savickienė, (2010). His work was done in order to bring to light the discrepancy in the amount of attention given to the affective domain by educators. Savickienė (2010) believes that attitudes and values that are to be included in the learning outcome goals of instructors should be established and described as a single verb. In addition to this and as a matter of priority, the education field needs to determine the attitudes and values that are to be taught to students, and reliable assessment tools to assess the learning outcomes of the affective domain need to be created.

The attitudes and values that are to be taught to students need not be performed in a separate classroom from other subjects. Even if such a situation were to be desired, the already

overloaded expectations from state-mandated core requirements would not allow it in many areas. That leaves the place for attitudes and values, the affective domain, to be taught alongside standards-based curriculum which is already filled to capacity with state standards. Though this situation seems hopeless for affective domain supporters, there are ways in which the affective domain can be taught with cognitive performance objectives. Stiff-Williams (2010) provides five steps to implement affective education with standards-based instruction:

1. Identify the values and character emphases that reflect community consensus and show how good decision-making is at the basis of all these values.
2. Guide teachers in analyzing state standards to determine teaching targets and identify character education emphases, such as decision making, that relate to the targets.
3. Provide staff training and planning time for teachers to design unit plans that meld state standards and character education teaching.
4. Support teachers in the implementation of lesson activities that emphasize state standards and character development learning experiences.
5. Promote the use of performance-based assessments, such as observation instruments and scoring rubrics that can effectively evaluate aspects of character development (p. 116).

As an example, Stiff-Williams takes a look at a mathematics standard. Many mathematics standards involve a long process that is involved to solve a math problem. Students get to experience this long process and it may take some time for students to work through such problems. This could be an opportunity to address a topic like perseverance, which students have to practice as they work through one math problem

that may take up to 10 minutes or more to complete, and discuss with the class the life skill of practicing perseverance when one comes across a situation that requires such a characteristic.

Another example where cognitive objectives is of primary focus and the affective domain can still be taught is found from Boyle et al. (2007). They describe a process which students undertake to apply cognitive concepts in geography, earth science and environmental science courses. Their research shows that fieldwork leads to substantial effects in the affective domain of students of higher learning.

Berber and Sari (2010) found that affective objectives were acquired more in students who had experienced teaching techniques related to SBI found in a physics classroom. These techniques, known as the concept changing texts and pedagogical-analogical models, were related to the physics classroom and were tested on both an individual and combined basis and then compared to more traditional teaching techniques in a true experimental process. After experimental application, there was a statistically significant difference between experimental and control groups in terms of attitude and interest of chosen affective characteristics related with physics.

Not all opportunities for affective domain education are as readily apparent and may require more time to develop. For this reason, it is essential that staff development opportunities be given to teachers so that educators can collaborate on, develop, and practice lesson plans that include the affective domain (Stiff-Williams, 2010).

Some teachers may argue that the outcomes of standards-based instruction are in-and-of themselves the lessons learned in the affective domain. Webster and Fisher (2003) support this argument in their research by asserting that

> teachers can promote positive attitudes towards mathematics by delivering the curriculum in a way that meets the needs of the students and this results in better mathematics achievement. These results also suggest that, as students achieve better, they will be more likely to have better attitudes. (p. 324)

Since attitude is associated with the affective domain, and standards-based instruction is associated with higher achievement, as will be discussed, then it leads credence to the argument from some educators that standards-based instruction in-and-of itself instructs in the affective domain.

In opposition to this argument is the stringent focus of standards-based instruction on students demonstrating proficiency on standards by passing tests. A similar emphasis wherein students exclusively focus on tests is found in some places within the online learning environment. Hwanga and Yang (2008) assert that students participating in distance education are urged to participate in learning purely by taking tests. This, in turn, could possibly lead students to study only for tests, and disregard other studies. As students focus solely on tests, sooner or later, only the teaching goals of the cognitive domain can be reached. Ergo, the affective teaching goals and values of the course cannot be imparted by the teacher of the course to the students of the course.

Student Perceptions of Standards-Based Instruction

Emphasizing the value in student perceptions of standards-based instruction is Sheng (2007), who advises for the use of affective interaction between teachers, learners, tasks and context or environments. He asserts that "in a harmonious and friendly classroom environment, with the knowledge transmission blending in well with the cultivation of affect, attitudes and values, students' cognitive and emotional development can be promoted" (p. 22). His study

revealed that students' positive perceptions of an affective college English classroom helped maintain student interest in college English learning.

Providing further evidence of support for the use of standards-based instruction (SBI) to improve student achievement in the cognitive domain is a study performed by Thompson (2009). Her study identifies many teaching and learning activities that are considered to be standards-based in nature. Of these, only "journal writing" has specific associations with the affective domain in other research (Khramtsova & Saarnio, 2005); however, the use of "co-operative learning approaches" implies that other such activities associated with SBI related to the affective development of students may be prevalent. None-the-less whether or not teachers specifically address the affective domain when creating SBI lesson plans is undetermined thus far in the research.

It is also undetermined if state policy makers are cognizant of the need for student development in the affective domain. One study may provide some perspective on the possible intentions of legislatures and bureaucrats who create educational policies regarding the affective domain is research performed by Ogbuehi and Fraser (2007). They establish in their study that the use of innovative teaching strategies for enhancing the classroom environment were associated with enhanced perceptions of the classroom learning environment and students' attitudes towards mathematics and conceptual development. The No Child Left Behind Act (ESEA, 2002) identifies the need for reform efforts including innovative teaching strategies that can be found within SBI.

Partially refuting the case that SBI improves student achievement in the cognitive domain is research performed by Akiva, Chiu, and Zhuang (2008). In their article, they state

Teacher reports of standards-based instruction did not predict student

> achievement, a finding that what matters are students' perceptions and experiences of classroom activities, not what teachers perceive they taught in the classroom. This finding supports that researchers, educators, and policy makers need to pay attention to student experiences of standards-based classroom activities. (p. 24)

Keeping the student experience at the forefront are Könings, Brand-Gruwel, and van Merriënboer's (2011) study which set out to investigate the extent to which students' perceptions of lessons match with their preferences about different aspects of contemporary education. Their results indicate that the perceptions of students about what takes place in the classroom can be used and are of great influence in determining what can be done to improve lessons. The study also showed a relationship between student perceptions and motivation and affective strategies. Activities that support affective domain development may be what determine the success of SBI in the classroom.

A possible explanation for the disagreement between Thompson (2009) and Akiva et al. (2008), comes from Goh and Fraser (1998) who suggest that "these findings inform educators about how to improve student achievement and attitudes by giving greater emphasis to learning environment aspects correlated positively to outcomes and less emphasis to dimensions negatively correlated with outcomes" (p. 222). Such a conception suggests proper teacher training for those utilizing SBI.

Yet Thompson (2009) makes a suggestion in support of that which is claimed by Akiva, Chiu, and Zhuang (2008), namely, that it is not enough to merely rely on teacher reports of their use of SBI in the classroom. Thompson submits that more is needed than just training teachers on the implementation of SBI to see it carried out in the classroom. She offers the standards-

based *Preparation, Practice and Performance* model wherein teachers are prepared through training, practice their training in the classroom, and empirically assess the effectiveness of SBI through the measure of student performance. In order for such an empirical assessment to be acceptable, the actual use of SBI in the classroom must be validated. Thompson uses direct teacher observation of SBI, or the lack of SBI, in her study for this validation to come to fruition. Such observations are limited however in that they are time consuming, provide an imposition on the classroom environment by the observer, and do not provide a day-to-day account of actual teacher classroom practices, but rather a one-time snap-shot of what is taking place, which may or may not be indicative of actual SBI practices of the teacher.

Bacon (1999) purports that "the changes that occur in instructional practices and school organizations as a result of [the SBI] reform effort should be observable and measurable" (p. 53). Bacon offers a solution to the limitations of teacher classroom observations to determine the use of SBI practices of teachers. This solution comes in the form of student perceptions of the use of SBI practices. In his study involving over 1000 students observing the practices of their teachers day in and day out, each school day of the year, Bacon (1999) was able to determine "the presence, as viewed from a student perspective, of particular classroom instructional strategies, supporting structures, and attitudes that are associated in the literature with goal oriented, standards-based approaches to learning" (pp. 11-12).

Other studies have also supported the use of student observation to perceive changes in instructional strategies such as SBI. One such study, while the modern age of SBI implementation was still in its infancy, determined that students were knowledgeable about reform that they had directly experienced and were able to recognize and comment on the effect of new strategies on their learning (Coe, 1994).

Of a more recent investigation into student perceptions is one performed by Könings, Brand-Gruwel, and van Merriënboer (2010) who stated that "student perspectives are of crucial importance because they determine the quality of learning and motivational processes actually taking place during learning. If teachers are not well informed about those perspectives, this might undermine the achievement of educational goals" (p. 46).

A measure of student perspectives on a SBI type of teaching versus lecture-based teaching is provided by Struyven et al. (2008). In their study, the authors compared student perceptions of a lecture-based setting with that of a student-activated learning environment comparable to a SBI classroom. Their "results clearly demonstrate that the same educational setting was able to trigger (significant) diverse students' perceptions. In particular, students' perceptions about the activating teaching methods displayed widespread responses and contradictory opinions, possibly with different learning outcomes as a result" (p. 103). Struyven et al. (2008) explain that a part of this contradictory result may be due to some students that carry with them a preference toward a teacher-centered belief while other students have developed a learner-centered teaching preference. This suggests the need for further professional development that incorporates differentiation of teaching techniques in SBI, including addressing the affective domain.

Professional Development of SBI

One piece of research that posits teachers are not addressing the affective domain when creating SBI lesson plans is found in a study conducted by Kimmins and Chappell (2004). Their study was to determine the effectiveness of a teacher professional development program for fourth through eighth grade mathematics teachers on the implementation of SBI. While much was discussed on the teachers' use of cognitive tools such as interventions, technology, learning

indicators, and problem solving; nothing was discussed in reference to affective learning of students. Teachers who are being trained to utilize SBI in the classroom to increase student academic achievement in the cognitive domain, but not being taught how to address the affective domain as a part of their training may be a sign that the affective domain is being ignored when teachers react to student progress in their classroom as a part of SBI.

Malikow (2006) offers a strategy that teachers may use to address the affective domain in their lesson planning. He suggests the use of the acronym CRIER which stands for "complaining, responding, initiating, embedding, and recruiting." Malikow goes on to explain that

> Teaching in the affective domain provides students with an opportunity to progress from expressing reluctance or distress (crying) in response to a proposed activity or subject to recommending it to others (crying, in the old style of town criers, who loudly and enthusiastically proclaimed public announcements). (p. 37)

To assist in this process, Malikow (2006) provides four techniques that teachers can utilize as part of their day-to-day lesson planning. These techniques are just one example of how professional development can be used to help teachers address the affective domain in SBI.

The importance of students participating in teacher preparation programs that include the affective domain is emphasized by Shoffner (2009) from Purdue University. According to Shoffner (2009), "Pre-service teachers manage anger, frustration, excitement, giddiness and disbelief on a daily basis. With the affective domain insinuating itself throughout the preparation experience, teacher educators are encouraged to explore the importance of the emotional in

teacher preparation" (p. 788).

Buchanan and Hyde (2008), in discussing the dynamic between the cognitive dimension and affective and spiritual dimensions explored by teacher training services in a publicly funded university, warn against placing:

> an extensive emphasis on the cognitive dimension of learning, in which the intellect is favored as the way of knowing above other facets of an individual's ontology, particularly the emotions and intuition, that is, the affective and spiritual dimensions. Resulting in a separation of mind, body and spirit, such an approach is then far from holistic, and may result in a neglect of such non-cognitive dimensions of learning. (p. 310)

Buchanan and Hyde cite de Souza (2005), who developed a model for teachers in training in which the cognitive domain and affective and spiritual domains of learning can all be addressed in the educational process in order to go beyond superficial instruction so as to make education transformative.

De Souza (2004) studied the lesson plans of two teachers in training who were teaching students approximately 15 years old in age. Both teachers' lessons weighed heavily on the cognitive focus of learning, but exposed no significant evidence of the affective or spiritual dimensions of learning in their lesson planning. Said de Souza,

> there is a real need for professional development programs for teachers where they are offered appropriate learning models which may assist them to develop new perspectives about engaging students by incorporating the different aspects of learning: cognitive, affective, and spiritual; and the associated processes: perceiving, thinking, feeling and intuiting. (2004, p. 37)

An article on the implementation of SBI revolves around music and provides a direct application to lesson planning wherein no significant evidence of the affective domain of learning is addressed. Fallis (1999) provides an implementation strategy for music teachers to develop lesson plans for SBI. Much of the lesson plan suggestions are centered on standards that students are expected to learn, but no suggestions are provided for student development in the affective domain.

Lubienski (2004) offers a different perspective to SBI. Her research tried to establish the reasons that students and parents choose one type of mathematics instruction over another. At one point in the discussion, the issue of student frustration in learning mathematics was addressed. It was suggested that teachers should acknowledge and students and parents should be made aware that "many students do get frustrated learning in Standards-based environments, explaining why some amount of frustration tends to be a necessary part of genuine mathematical activity and developing strategies for addressing such frustrations" (p. 364). Dealing with frustrations is considered an affective domain topic wherein SBI mathematics teachers should include such instruction in their lesson planning.

Summary

Before students enter the school system, their parents and community have impressed upon them ways to deal with things emotionally, such as their attitudes, values, enthusiasms, appreciations, motivations, and feelings. Some of these affective domain impressions are taught purposefully while others are learned by following the example set by others including older children (Gmitrová & Gmitrov, 2004).

As students continue their education, their knowledge in the affective domain continues to evolve with experiences and teachings from parents, peers, and educators (Boyle, 2011;

Hoppe, 2004). A side effect of children who do not learn appropriate ways to deal with emotions are young adults who become a hindrance to society rather than contributing members of that society (Stiff-Williams, 2010). Many professions are calling on educators to provide them with trained individuals prepared to meet the psychological challenges that arise in their respective professional fields (Lynch et al., 2009). While SBI shows promise of providing society with students ready to take on the cognitive demands they will face (Thompson, 2009), whether or not those individuals will be able to carry the emotional strains placed upon them remains in question. Knowing if educators are preparing lessons that address the affective domain, wherein the management of emotional components of student behaviors such as feelings, beliefs, attitudes, values, and motivation or engagement, in the learning process while using SBI practices at a high level, will help answer such concerns.

Researchers have made the call for additional studies to be conducted that will reveal further knowledge into the use of the affective domain. Bolin, Khramtsova, and Saarino (2005) advocate for more research that will help determine effective ways students can learn within the affective domain. Carter and Horner (2007) call for more studies into the value of adding function-based supports to established social skill curricula and the integration of effective independent behavioral interventions to increase time in academic engagement. Research conducted by Kiener and Weaver (2011) into the *Scholarship of Teaching and Learning* model, which shares many traits as those found in SBI, suggest that additional research into what teachers are thinking and the affective shifts of students needs to be conducted. Similarly, Eisner (2010) makes a direct plea for research that can assist in determining if teachers are interested in facilitating the need to build the affective attributes in students that employers are looking for in today's competitive job market. The research provided in this study will help determine the

attitude of high school teachers towards the affective domain, the importance placed on affective objectives, and classroom applications of the affective domain of those teachers who employ SBI at a high level compared to those teachers who employ SBI at a low level.

To assist in determining how this research fills the gap in the literature noted above, the next chapter will provide details on the methodology to be carried out in this study including a description of the participants in this research along with the setting wherein the research takes place. The instrumentation will also be explained. The design and data analysis will be made clear.

CHAPTER THREE: METHODOLOGY

Standards-based instruction is helping to meet the cognitive needs of many students, but whether or not the affective needs of students are being addressed is unknown. This study attempts to answer the question: Do high school teachers who use standards-based instruction practices at a high level address affective domain objectives less than those who utilize standards-based instruction practices at a low level?

In this chapter, the participants of the study will be described, as well as the setting that the study utilizes. This will be followed by a look at the instrumentation that was employed. The details necessary to conduct the study are outlined in the procedures set forth. The research design will be explained and data analysis procedures will be clarified.

Design

This study employs a causal-comparative research design to determine if teachers who utilize SBI practices at a high level address the affective domain less than those teachers who utilize SBI practices at a low level. The causal comparative design was employed because it tries to discover possible causes between an independent variable and a dependent variable wherein the independent variable cannot be controlled by the researcher (Chen & Popovich, 2002). Schenker and Rumrill (2004, p. 121) point out that

> rather than drawing cause-and-effect inferences regarding the relationships between grouping variables (the independent variables) and…outcomes (the dependent variables) causal-comparative studies examine group differences as they occur-without manipulation or intervention. As such, these types of studies have brought to the field a steady deepening understanding of the ways in

which…outcomes may be related to the core attributes of consumers, researchers, and service providers.

Causal-comparative research has some limitations in that it is non-experimental and, ergo, conclusions about cause-and-effect relationships cannot be justified. Conclusions of causal-comparative research can suggest however, that cause-and-effect relationships may exist and repeated causal-comparative research with repeated similar results can provide a greater basis to make claims of cause-and-effect relationships.

Another limitation of causal-comparative research is in its internal validity. This can be reciprocated by increasing the external validity by randomly selecting as large a sample as is reasonable that is representative of the larger population.

Causal-comparative research is often associated with being *ex post facto* research, or research that takes place retroactively or after the behavior has already taken place. This is not always the case, however. There are many examples of research that utilizes a causal-comparative design without being retroactive or *ex post facto.* Examples include research done by Groomes and Leahy (2002) who studied the distinguishing impact that types of coping capabilities had on stress evaluation and acceptance of disability. Another example is found in Loo (2001) who examined attitudes toward persons with disabilities by comparing four different categories of management undergraduates.

The design of this research uses nonequivalent groups that are not randomly assigned. To assist in achieving equal groups, the matching method will be based on demographic data obtained in part one of the instrument, which will help account for a lack of randomized groupings in this causal-comparative study. Matching pairs reduces the likelihood that extraneous variables will disrupt the study. Extraneous variables can disrupt a study by

providing an alternative explanation or possible cause to the relationship in the variables other than that which is being investigated. Bicak (2003) matched groups in his study based on subject taught, grade level taught, and gender. This study will attempt to match groups using the same criteria.

The extreme groupings technique was used in this research which "involves selecting the extremes of a score distribution on one variable" (Gall et al., 2007, p. 312). That is, the 20 highest and 20 lowest levels of SBI were used in this study, while those found to be in the middle range were eliminated from the data analysis. Placing the teachers into a high SBI group of 20 and a low SBI group of 20 while eliminating the middle teachers ensured that the highest level of ranked teachers were in the top half of each ranking and the lowest level of ranked teachers were in the bottom half of each ranking taken from the CReaTE expert evaluation, the student evaluation, and the teacher self-report of SBI. Splitting the participants into 30 high and 30 low SBI groups, for example, would have created a situation in which some teachers would have been ranked in the high group under one evaluation or evaluator and the same teachers could have been ranked in the low group under one of the other evaluations or evaluators. Creating two groups of 20 ensured those teachers in the high group were actually ranked as high SBI teacher and those teachers in the low group were actually ranked as a low SBI teacher in each of the evaluations and by each of the evaluators. This creates a scenario in which "the two extremes are more likely to reveal differences on the other variable of interest" or a high level of SBI practices (Gall et al., 2007, p. 312). The top 20 teachers considered to be using a high level of SBI practices comprised one group and the bottom 20 teachers considered to be practicing SBI at a low level comprised the other group. Teachers measured in the low level category of SBI practices were used as the control group for this research.

This study also utilizes a correlational design to determine a relationship between the level of SBI as perceived by students and the level of SBI as self-reported by their teachers. A Spearman' Rank Correlation Coefficient (rho) statistic was used to determine the relationship. Spearman's rho shows the degree of monotonic relationship between two variables set in ordinal fashion and measures the association between the two ranked variables (Chen & Popovich, 2002). The Spearman rho indicates if the students and teachers agree to each other's view as to the level of SBI taking place in the classroom.

Questions and Hypotheses

This study asks the following research questions:

1. Do high school teachers who utilize a high level of standards-based instruction practices apply the affective domain in their lessons less than those teachers who utilize a low level of standards-based instruction?
2. What are the attitudes towards the affective domain of high school teachers who utilize a high level of standards-based instruction practices compared to those teachers who utilize a low level of standards-based instruction practices?
3. What are the affective domain applications of different grade levels of high school teachers who utilize a high level of standards-based instruction practices compared to those teachers who utilize a low level of standards-based instruction practices?
4. Do teachers' years of experience with a high level of standards-based instruction practices influence the level of importance teachers place upon affective goals compare to the level of importance that teachers place upon affective goals of teachers that use a low level of standards-based instruction practices?

5. Is there a relationship between the level of standards-based instruction practices in high school classrooms as perceived by students and the level as self-reported by their teachers?

The null hypotheses for this research are as follows:

1. There is no statistically significant difference in the amount of application of the affective domain between high school teachers who utilize a high level of standards-based instruction practices compared to those teachers who utilize a low level of standards-based instruction practices as shown by a 57 item instrument that has been tested for validity and reliability.
2. There is no statistically significant difference in the attitudes towards the affective domain of high school teachers who utilize a high level of standards-based instruction practices compared to those teachers who utilize a low level of standards-based instruction practices as shown by a 57 item instrument that has been tested for validity and reliability.
3. There is no statistically significant difference in the affective domain applications for different grade levels between high school teachers who utilize high levels of standards-based instruction practices compared to those high school teachers who utilize low levels of standards-based instruction practices as shown by a 57 item instrument that has been tested for validity and reliability.
4. There is no statistically significant difference in the level of importance teachers place upon affective goals between teachers that utilize high levels of standards-based instruction practices and those teachers who utilize low levels of standards-based

instruction practices in terms of their years of experience as shown by a 57 item instrument that has been tested for validity and reliability.

5. There is no statistically significant relationship between the perceptions of students on the level of standards-based instruction practices in high school classrooms to that which is self-reported by their teachers as shown by a 42 item instrument and a teacher self-report analysis that have been tested for validity and reliability.

Participants

The participants in this study were public secondary high school teachers working in the suburbs of the Seattle, Washington, metropolitan region of the Pacific Northwest. Teachers typically teach five class periods a day and are provided with one class period to prepare lesson plans and materials for teaching, along with grading and other duties as assigned under contract. The total number of teacher participant candidates equaled approximately 190. Of these, 60 elected to participate, for a 31.6 percent participation rate. The mean years of teacher experience ranged from 5.1 to 13.9 years. Fifty six percent of the teachers had at least a Master's Degree and 100% of the teachers were considered to be highly qualified under the Elementary and Secondary Education Act (Office of the Superintendent of Public Instruction, 2013).

Table 1

Teacher Demographic Data for Participating High Schools

	High School **A**	High School **B**
Classroom Teachers	61	120
Mean Years of Experience	13.9	8.3
Bachelor's Degree	34.4%	60.3%
Master's Degree	62.4%	38.9%
Doctorate Degree	3.2%	0.8%
Teach Core Academic Classes	42	70
Meet ESEA Highly Qualified Definition	100.0%	100.0%

The extreme groupings technique to separate the independent variables was used with 20 teachers considered to be using the highest level of SBI practices comprising one group and 20 teachers considered to be practicing SBI at the lowest level comprising the other group. This number of participants is consistent with the sample size needed to satisfy a power level equal to 0.80 (α=0.80) and is discussed in further details in the data analysis section below.

The students of the aforementioned teachers took part in this study by completing an assessment designed to confirm the level of SBI that their teacher utilizes in the classroom. Parental consent as well as student assent to take part in the assessment was obtained before data was used. Students were made up between 51.9 to 54.7% male and 45.3 to 48.1% female. The black student population ranged from 0.7 to 1.9%, while the Hispanic population ranged from

16.8 to 17.6%. White students made up 61.7 to 63.7% of the population from school to school. Asian students accounted for 3.2 to 5.5% of the population and Native American students ranged from 2.8 to 3.8% of students. Free and reduced lunch numbers varied from 35.8 to 39.3% of students. Nine to 13.5% of students were categorized as special education.

Table 2

Student Demographic Data for Participating High Schools

	High School **A**	High School **B**
Enrollment	1,152	1,451
Male	51.9%	54.7%
Female	48.1%	45.3%
Asian/Pacific Islander	3.2%	5.5%
Black	0.7%	1.9%
Hispanic	17.6%	16.8%
White	63.7%	61.7%
Free/Reduced Lunch	35.8%	39.3%
Special Education	13.5%	9.4%
ELL	13.5%	2.7%

Setting

The instrument results from high school teachers and their students of a public school district 35 miles North of Seattle, Washington were used in this study. The district contains high schools that are accredited by the Office of the Superintendent of Public Instruction of the state

of Washington. The high schools ranged in size from approximately 1,150 to 1,450 students. Typical high school classes in this region contain approximately 25 to 35 students each.

Instrumentation

The Teacher Assessment Form

Participants will complete the *Teacher Assessment Form*—a self-report survey to help determine the level of SBI practices being utilized by each teacher in their classroom (Thompson, 2009). The *Teacher Assessment Form* was adapted by Thompson (2009) from items developed using information from the NCTM and NSTA standards and the TIMSS survey which was thoroughly field tested to ensure reliability and validity of the data. This assessment was taken online by participating teachers through the *Surveygizmo* website. Participants completing the instrument rated on a Likert scale from one to ten on whether they "strongly agree" or "strongly disagree," are "very unfavorable" or "very favorable" toward a statement, spend "no Time" or "all of the time" for which the statement describes, or are "not at all prepared" or "very prepared" for that which the statement describes. The teachers were ranked according to their scores on the instrument to help determine the highest level of SBI teachers and the lowest level SBI teachers.

This instrument is divided into four subscales, each with its own internal consistency reliability coefficient. The first subscale, *instructional considerations,* has a reliability level of 0.87. The second subscale, *preparation considerations*, has a reliability level of 0.95. The *time considerations* subscale has a reliability level of 0.92. *Assessment Considerations* is the fourth subscale and has a reliability level of 0.91. The overall reliability coefficient for the entire assessment, based on internal consistency, is 0.93 (Thompson, 2009). This level of reliability falls well above that which is recommended by Gall et al. (2007) to be adequate for research.

The CReaTE Evaluation Rubric Matrix

To help determine the level of SBI practices being utilized by each participating teacher in the classroom, the *CReaTE Evaluation Rubric Matrix* (Maxwell, Stobaugh, & Tassell, 2014) was employed. The developers of the CREaTe evaluation form prepared the rubric into a matrix that is divided into four components: (a) Cognitive Complexity, (b) Real World, (c) Engagement and (d) Technology Integration. Each component is separated into a lower cognitive complexity category and a higher cognitive complexity category. Each of these two categories is subdivided into levels. The lower cognitive complexity has two levels: knowing and practicing; while the higher cognitive complexity has three levels: investigating, integrating, and specializing; creating five levels of cognitive complexity for each of the four components. The two levels for lower cognitive complexity are scored with either a one or two and the higher cognitive complexity levels are scored with a three, four, or five. Each cell of the matrix, aligned with the components across the top and the lower and higher cognitive complexity levels down the side, provides a description which equates to the definitions of SBI provided by Thompson (2009), Green (2007) and Bacon (1999). A copy of the CReaTE evaluation rubric can be seen in appendix B.

As classroom learning activities were evaluated, they were scored according to the level at which each activity was matched from each cell of the CReaTE matrix in a Likert scoring fashion. The score for each classroom learning activity from each component was tabulated and an overall score was created for each teacher from each evaluator. A high level of inter-rater reliability between these three experts was paramount as raters scoring the same phenomenon under the same conditions consistently are quality signals of the measurement reproducibility of this research (Gwet, 2012). The educational experts were given the same instructions and each made their respective evaluations independently of one another. The participating teachers were

then ranked from high to low SBI level according to the score assigned from each of the three evaluators. A Spearman rho was calculated between each of the three experts' rankings of the 67 teachers being evaluated for their classroom learning activities. After the evaluators' initial rankings were correlated, Spearman's rho was found to be at a moderate level of correlation (Dancey & Reidy, 2004) with r=0.36 to 0.45 suggesting a limited agreement between the evaluators' assessment of the participating teachers' SBI level.

The evaluators were reinstructed on the use of the matrix and clarifying questions with regard to some general examples on how to score certain types of classroom learning activities were discussed between each evaluator and the researcher. Three weeks after the first evaluations, a second evaluation of the classroom learning activities of the participating teachers were completed with newly assigned rankings. When the Spearman's Rank Correlation Coefficient was calculated for the second evaluation, the relationship between each of the evaluators' rankings was found to be very strong with r=0.81 to 0.88 (Dancey & Reidy, 2004). A correlation level no less than 0.80 is suggested to be sufficient for research by Gall et al. (2007). The rankings of the participating teachers from high to low level of SBI of the three evaluators were then placed in rank order based on their total score to create an overall list of teachers' level of SBI according to classroom learning activities. A table with each evaluating experts' ranking of teachers is found in Appendix B.

The Student Confirmation of SBI Practices Assessment

An assessment to confirm the level of SBI that each teacher utilizes in the classroom was completed by students and is an instrument made up of 42 items (See Appendix C). Students of those teachers participating in the research completed the assessment at home after their parent or guardian had the opportunity to review the instrument and sign for consent to have their

student participate in the study. The students returned the consent form and the completed instrument to the schools' office. The assessment was collected by an office secretary who assured that there were no identifying marks made on the answer sheet that allowed for the researcher to determine which student had provided the answers to the instrument. It was estimated that the assessment would take between 20 and 25 minutes to complete.

A Spearman Correlation Coefficient statistic assesses the relationship between two sets of ranked scores (Chen & Popovich, 2002). The scores from the *Student Confirmation of SBI Practices Assessment* were ranked and Spearman's rho was used to determine the relationship between the level of SBI that teachers self-reported and that which had been experienced by their students with respect to: (a) teachers and students knowing the standards and how they align to assignments, (b) students knowing how to reach standard and/or the use of scoring rubrics, (c) the teacher providing differentiated instruction and interdisciplinary activities, (d) students being given flexible use of their time and students being re-taught and redoing assignments, and (e) students working cooperatively in groups. Along with working cooperatively in groups, there are seven other items on the instrument that can be used to measure affective traits of students which are categorized as student self-esteem and responsibility.

The student confirmation for classroom level of SBI is a 42 item assessment for which participants are given the opportunity to respond with a code indicating that they "strongly disagree," "disagree," are "neutral," "agree," or "strongly agree" with each statement on the instrument. The items are grouped by category according to SBI characteristics. Table 3 summarizes the categories and provides the item numbers used to assess each corresponding category.

Table 3

Instrument Items Assessing Categories of SBI

Category	Item #s
Teachers/Students know the standards and how they align to assignments	1, 2, 11, 22, 23
Students know how to reach standard/Use of scoring rubrics	3, 5, 8, 12, 37
Differentiated instruction and Interdisciplinary activities provided	4, 6, 7, 13, 15, 19, 28, 34, 39
Students have flexible use of time	14, 18, 30
Students relearn/redo assignments	17, 21, 27, 40
Students work cooperatively in groups	10, 29 ,41
Teachers care for students/Students have high self-esteem and take responsibility	9, 16, 20, 24, 25,26, 27, 31, 32, 42

Each response to the instrument items is assigned a value that was analyzed in order to determine a score for each aspect of SBI in a Likert-Scale fashion. Instrument validity was determined by Bacon (1999) through expert content analysis of each item. Bacon also conducted a pilot study on the instrument to ensure criterion related validity via concurrent performance means. Instrument reliability was established through the use of a panel of experts to determine inter-rater reliability and Cronbach's alpha to measure the internal consistency. The total reliability scale of all 42 items on the student instrument has an alpha coefficient of 0.90 (Bacon, 1999). This coefficient value is above that which is suggested by Gall et al. (2007) to be desirable for research. Bacon (1999) also made a call for research that would include a means to affirm teachers' use of SBI practices in the classroom which is what this study entails as part of a

triangulation effort to establish actual teachers' level at which they use SBI practices in their classrooms.

The Teacher Attitudinal Assessment toward the Affective Domain

The *Teacher Attitudinal Assessment Toward the Affective Domain* (Bicak, 2003), found in Appendix D, was completed by the 20 teachers who utilize the highest level of SBI practices and the 20 teachers who utilize the lowest level of SBI practices. As such, this instrument was evaluated after the other instruments had confirmed these extreme levels.

The attitude of teachers towards the affective domain, the importance placed on affective objectives, and classroom applications of the affective domain are the dependent variables in this study that were measured through the use of a 57 item instrument that has been tested for validity and reliability by its author. The total test reliability coefficient was found to be 0.90, which involved an inter-rater type of reliability measure while the internal consistency between the items on the overall instrument was calculated to be at a high level of 0.98. Validity was established through (a) expert content analysis performed by three professors from the University of Arizona—two of the professors specialized in testing and measurement, and the other in teacher education; and (b) convergence of methods wherein the instrument was concurrently validated by the relationship between the instrument and individual coded interviews of the participants. A correlation analysis showed a near perfect relationship (i.e., $r = 0.98$) between the response scales on the instrument and that which was obtained by the interview questions (Bicak, 2003).

The categories of the analysis were determined through the first portion of the instrument which is comprised of 11 questions to determine background information about the participant. This includes questions about subject taught, grade level, class size, college attended, and level

obtained, years of teaching experience, gender, age, and a self-assessment question on experience of the application of the affective domain.

The second part of the instrument is made up of 37 questions designed to determine the teachers' awareness level of the affective domain, their attitudes about the affective domain, planning and application of affective goals in their lessons, and their beliefs on the importance of the affective domain. Participants are given the option of choosing between "Always," "Very Often," "Often," "Sometimes," or "Never," as a response to each item of the instrument in part two. Each of these responses was assigned a value that was analyzed in order to determine a score for each aspect of the affective domain in a Likert-Scale fashion.

The third part of the instrument is made up of 20 questions that provide the same options for participants to answer each item as those options found in part two of the instrument. Responses to this part of the instrument will be analyzed using Likert-Scale scoring identical to that which will be used in part two. The items found in part three of the instrument is specific to teachers' application of the affective domain in their teaching practices.

Procedures

Upon receiving IRB approval, research necessary to this study commenced. Permission from the school district to use their employees and students for this research was ascertained. The principals of the schools were made aware of the exact nature of the research, but asked not to divulge this information to the teachers. After receiving permission from the school district, an email, like that which is found in appendix E, was sent to each of the 181 potential participant teachers. The email explained the opportunity they and their students had to participate in educational research by volunteering the learning activities used in their classrooms over a five day period. The explanation in the email also notified the teacher that their students would be

requested to complete a 10-15 minute questionnaire and for the teacher to participate in two online surveys as well, taking approximately 15 minutes each. The email explained that all participants, teachers and students, would remain anonymous. The exact nature of the evaluations for the classroom learning activities was not disclosed so that teacher participants would be less likely to alter the content of their classroom learning activities. A general description of the evaluations of the classroom learning activities was included, which suggested that the purpose of the evaluation was to determine student response to instruction. Teachers were also notified in the email of their entrance into a drawing for a $100 gift certificate to a local teaching supply store if they chose to participate. An affirmative response to the email constituted the participant's consent.

After a two week period, in which seven teachers volunteered to participate in the study, a follow-up email was sent to each teacher reminding and asking them to participate in the research if they had not already chosen to do so. This was met with five more teachers volunteering to participate, providing a 6.6% response rate. The researcher then received permission from the principals of each high school to visit their respective school campuses to recruit teacher volunteers in person during their planning periods. Before the day of the visit by the researcher, the principals emailed the prospective teachers notifying them of an impending visit during their planning periods. This effort proved more productive in recruiting volunteers as an additional 63 teachers agreed to participate in the study resulting in an overall response rate of 41.4%.

The principals assisted in finding a convenient time for the researcher to collect the participating teachers' classroom activities and to distribute *The Student Confirmation of SBI Practices Assessment* to students. The schools' main office secretaries provided a place and a

person for *The Student Confirmation of SBI Practices Assessment* to be returned by students after completing the questions so as to not provide teachers with access to student responses and to maintain anonymity. The schools' principals also agreed not to access student responses. The assessments were collected from the school offices after a two week period for analysis.

Students did not receive monetary compensation for their participation in the study. Teachers who participated in the study did not receive monetary compensation, but each teacher participant was entered into a drawing for a $100 gift certificate to a local teachers' supply store.

Classroom Learning Activities

Participating teachers submitted the classroom learning activities conducted in their classroom with their students for five consecutive days in the form of lesson plans or by providing a list with a description of each learning activity conducted. Participating teachers did not know the exact criteria of how the classroom learning activities would be evaluated, but were told that a general assessment was being made in regards to how students respond to instructions and directions.

The classroom learning activities were then evaluated by experts in the education field. The participating teachers' names remained anonymous to the expert evaluators. Two of these experts hold doctorate degrees and the other a master's degree in education. Combined, these three experts have over 90 years of experience in secondary education, including teaching and administrative work. The evaluation of classroom learning activities set an initial level of SBI that each teacher utilizes in relation to the other participating teachers and in accordance to Thompson (2009), Green (2007), and Bacon (1999).

The inter-rater reliability of the educational experts was monitored. This inter-rater reliability was set at a minimum coefficient score of 0.80 or above as suggested by Gall et al.

(2007). In addition to the initial training, evaluators were assessed on their inter-rater reliability coefficient once evaluations had been returned to help prevent the evaluators from making large discrepancies between one another. This practice was used to help maintain internal validity. Additional training was administered as needed to ensure a strong level of inter-rater reliability. Once all teacher participants' classroom learning activities had been evaluated, their level of SBI in relation to the other participants was determined.

Heafner, Petty, and Hartshorne (2011) evaluated student teachers with four observations each over a six month period of time. Thompson (2009) evaluated the teachers in her study with a mean of less than one class period of observations per teacher, but suggested that additional observations may produce a more valid confirmation. Repeatedly sending an observer into a classroom can be a distraction to students. To minimize this potential, and taking the other research into consideration, this study attempted to evaluate each teacher's classroom learning activities over a five day period to establish their foundational level of SBI practices. While classroom observations provide an exact portrayal of the instruction taking place, only an extremely narrow sample of the overall teaching and learning practices are being assessed. Lesson plans, even if only in the form of classroom learning activities with brief descriptions, offer a more general and broad view of the overall teaching and learning practices being provided in the classroom and produce a more accurate overall analysis of the level of SBI practices (Ferrell, 1992).

Student Perceptions of SBI

After the completion of the classroom learning activities evaluations, teachers were ranked into high and low levels of SBI. The students of the teachers participating in the study continued the research. Students received *The Student Confirmation of SBI Practices*

Assessment and were asked to take the assessment home for parental permission, to complete the questions per the provided instructions, and to return the assessment to the school office. Specific instructions were given to students not to return the assessment to their respective teachers and teachers were asked not to accept any assessment and to remind students to return the assessment to the office. The assessment contained a letter to parents and students explaining the study, as found in Appendix F. Assessments turned in without a parent's and student's signature offering consent and assent to participate were destroyed.

Besides an explanation of the study, the letter to parents and students provided assurance that the students would not be harmed while participating, the student's identity would remain anonymous, and the student would not be penalized for not participating. Students and parents signed the letter offering consent to participate and students then completed the assessment and returned it to the school office. The school secretary personally assured that no identifying marks had been written on the assessment answer sheet.

The classroom teacher then completed *The Teacher Assessment Form of SBI* online. This allowed for the teacher to complete *The Teacher Assessment Form of SBI* without the teacher knowing ahead of time the specific details of the study and allowed for a more authentic assessment. The estimated time to complete *The Teacher Assessment Form for SBI* was approximately 15-20 minutes.

The *CREaTe Evaluation Rubric Matrix* initially identified the 20 highest and lowest level teachers of SBI. Once those teachers were confirmed by *The Student Confirmation of SBI Practices Assessment,* and *The Teacher Assessment Form of SBI,* the data were triangulated to establish the level of SBI for each teacher. The *CREaTe Evaluation Rubric Matrix* correlated

with the results of *The Student Confirmation of SBI Practices Assessment* and *The Teacher Assessment Form of SBI,* as explained in the findings and discussions of chapters 4 and 5.

Affective Assessment

The final step in gathering data for this research was for the participating teachers to take part in *The Teacher Attitudinal Assessment toward the Affective Domain* instrument. This assessment determined the difference in attitudes of teachers towards the affective domain, the application of the affective domain, and the level of importance teachers place upon affective goals between teachers who are at a high level of SBI compared to those who are at a low level of SBI. An email was sent to each of these teachers requesting that they take part in this one last portion of the research. If any teachers were non-respondent, a second email was sent to help remind the teacher to complete the assessment. If teachers remained un-respondent and did not complete the research study, the next lowest or highest level teacher of SBI was used in place of the teacher who had dropped out. After all of the instruments were complete, the data analysis took place. It was estimated that *The Teacher Attitudinal Assessment toward the Affective Domain* instrument would take approximately 15 minutes to complete and was taken online.

Data Analysis

Analysis of the data was conducted for each of the research questions and hypotheses. The first two null hypotheses are as follows:

1. Teachers who use high levels of standards-based instruction practices do not apply the affective domain more than those teachers who use low levels of standards-based instruction practices.

2. The mean attitudes towards the affective domain of teachers who use high levels of standards-based instruction practices are not higher than those teachers who use low levels of standards-based instruction practices.

These hypotheses were analyzed using a two-tailed independent sample *t*-test for the dependent variable. This test is appropriate for these hypotheses because the independent variables are dichotomous or categorical with participants being assigned to either a high or low level of SBI practices. The outcome variables, the application of the affective domain, and the attitude of those teachers towards the affective domain, are interval variables. Data were prescreened for violations of assumptions of normality and homogeneity of variance. Using a Levene's test, the data were found to be normally distributed and the variances between the groups are the same (see Tables 7 and 9). If the assumptions for parametric testing had not been met, then the Mann-Whitney *U* Test, which can be utilized as a nonparametric statistic in place of the *t*-test, would have been used (Howell, 2011).

The third and fourth null hypotheses are as follows:

3. The application of the affective domain by teachers who use high levels of standards-based instruction practices does not differ by grade level.
4. An increased number of years in teaching with high levels of standards-based instruction practices do not increase the importance teachers place upon affective objectives.

A two-way analysis of variance (ANOVA) was utilized to analyze the data for these hypotheses. An ANOVA was appropriate for these hypotheses because there exists more than one independent variable: high and low-levels of SBI practices; with four sub-factors for each hypothesis: grade levels 9, 10, 11, and 12. An ANOVA's versatility allows for testing the

statistical significance of group differences on each factor (Iversen & Norpoth, 1987). Bicak (2003) used a one-way ANOVA to compare grade level, number of years teaching, and the application of the affective domain between three different categorical subjects taught. If any mean differences are statistically significant, a Tukey's Honestly Significant Difference Test will be conducted. In the event that the data do not meet the parameters for an ANOVA, the Kruskal-Wallis Test will be performed, which is an appropriate nonparametric replacement for the ANOVA.

The fifth null hypothesis is as follows:

5. There is not a statistically significant relationship between the perceptions of students on the level of standards-based instruction practices in high school classrooms to the level of standards-based instruction practices as self-reported by their teachers.

Data from all 60 participants in the study were used to conduct the analyses necessary for Hypothesis 5, as opposed to the 20 highest and 20 lowest level teachers of SBI. The data collected for these variables were placed in rank order. The correlation between the perceptions of students on the level of standards-based instruction practices in high school classrooms to the level of standards-based instruction practices as self-reported by their teachers was determined through the use of a two-tailed Spearman's Rank Correlation Coefficient. This statistic was appropriate for this research question because it assesses the degree of relationship between two sets of ranked scores that are derived by ranking an ordinal variable. The null hypothesis could be rejected if the two ranks are found to have a significant dependent relationship.

A power analysis takes into consideration four variables: (a) the probability of a Type I error (α), or level of significance; (b) the difference between the null hypothesis and an

alternative hypothesis, or effect size (□); (c) the size of the sample (*n*); and (d) the test to be utilized and if it will be a one-tailed or two-tailed test (Howell, 2011). An acceptable level of significance for α for this research was 0.05 and is the level at which most research is conducted (Gall et al., 2007). Because this study compared the differences between high levels of SBI practices with low levels of SBI practices with regards to the affective domain, the effect size for this study was estimated *a priori* to be at a high level with □ = 0.80 based on Jacob Cohen's conventions (Howell, 2011). This study utilized an independent sample, two-tailed *t*-test. Taking these variables into consideration, the optimal number of participants in this study for a two-tailed sample *t*-test with a power equal to 0.80 and a large effect size equal to 0.80 was 40. A power level equal to 0.80 suggests that the null hypothesis will be rejected correctly 80 percent of the time this study is conducted. This number of participants also satisfied the conditions for conducting an ANOVA as well.

The number of student participants taking *The Student Confirmation for Classroom Level of SBI Assessment* was determined by the classroom size of the teacher participants. This was estimated to be between 25 and 30 students for each teacher. As such, the number of participants could have been up to 1500 students. However, it was anticipated that a much smaller number of returned surveys from each teacher's class would be returned by the students. Nonetheless, even only a few surveys coming from each class provided a number that would fall well within the number of participants needed to establish a high power level. A smaller number of returned surveys also created a lower number of instrument results to be processed. This enabled the researcher to tabulate the answers for each item and enter the results onto a computer for analysis. Computer analyses returned a mean, median, mode and standard deviation.

Conclusion

This chapter described the participants in the study, including teachers and students, as well as the setting that the study utilized. This was followed by a look at the instrumentation that was employed. The details necessary to conduct the study were outlined, the research design was explained, and data analysis procedures were clarified. These methods enabled the research portion of this study to take place, which is the next step in answering the question: Do high school teachers who use standards-based instruction practices at a high level address affective domain objectives less than those who utilize standards-based instruction practices at a low level? The findings of the research will be discussed in the next chapter.

CHAPTER FOUR: FINDINGS

The general purpose of this causal-comparative study is to address the question of whether teachers who use a high level of Standards-Based Instruction practices neglect the application of the affective domain in their classrooms. The study compares the attitudes towards, the importance placed on, and the classroom applications of the affective domain of teachers who utilize a high level of SBI practices in their classrooms with teachers who utilize a low level of SBI practices in their classrooms. The data of this research are presented and analyzed in the following pages. The chapter begins with an overview of the triangulation of data, commencing with the expert inter-rater ranking agreements, to determine the level of SBI of each participating teacher in relation to each other. This is followed by the prescreening of data to ensure alignment with the assumptions for statistical analyses. Results for research hypotheses one through five are addressed by either retaining or rejecting the corresponding null hypotheses.

Teacher Level of Standards-Based Instruction

The CReaTE Teacher Evaluation Tool

The participating teachers' classroom learning activities were evaluated with the CReaTE evaluation tool using a scale from one to five, one being low and five being considered a high level of SBI in four main categories: (a) Cognitive Complexity of the activity; (b) Real World application of the learning content; (c) Technology Integration; and (d) Engagement with other students and/or collaboration with the teacher or outside experts. The scores for each category were added together to create an overall total from each evaluating expert. The total scores were then used to rank each teacher from high level of SBI to low level.

The participating teachers in this study were ranked according to their level of SBI as evaluated by three experts in the field of education. Table four summarizes the values of central tendency and standard deviation for each of the three experts' rankings.

Table 4

Measures of Central Tendency and Standard Deviation from the Rankings of Participating Teachers by Educational Experts.

	Mean	Median	Mode	Standard Deviation
Expert #1	34	35.5	11.5	19.3
Expert #2	34	35	27	19.5
Expert #3	34	33.5	20.5	19.2

Since the study called for the teachers to be ranked, a Spearman's rho was calculated between each evaluating expert's rankings of the participating teachers to determine the inter-rater reliability of the CReaTE instrument as utilized in this study. As identified by the line of fit, each scatterplot suggests a definite positive correlation. This was confirmed by conducting the Spearman's Rank Correlation. The relationship between evaluating expert #1 and evaluating expert #2 was found to be a very strong, positive correlation of $r = 0.82$ (see figure 1 below). The relationship between evaluating expert #2 and evaluating expert #3 was found to be the strongest, positive correlation of $r = 0.89$ (see Figure 2 below). The relationship between evaluating expert #3 and evaluating expert #1 was also found to be a very strong, positive correlation as well with $r = 0.86$ (see Figure 3 below). All of these values fall above the 0.8 minimum level for reliability acceptable for research (Gall et al., 2007). In analyzing the results between the three experts, the following scatterplots were examined:

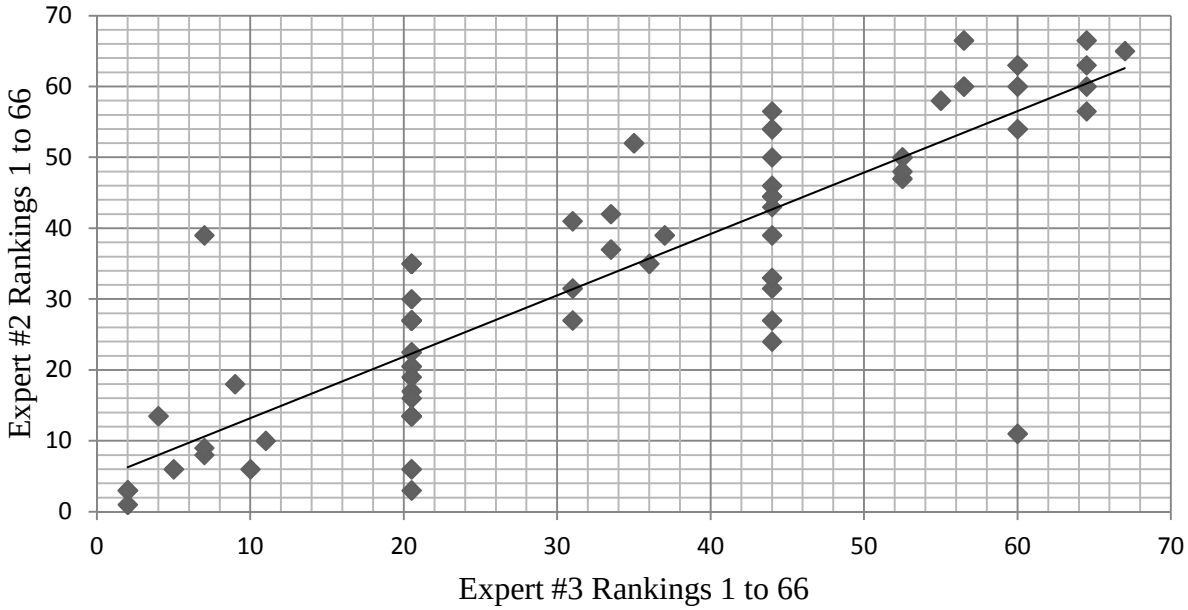

Figure 1. Scatterplot analysis of rankings of teachers from high to low level of SBI between expert #1 and expert #2 using the CReaTE evaluation rubric. $r = 0.81$, $N = 66$.

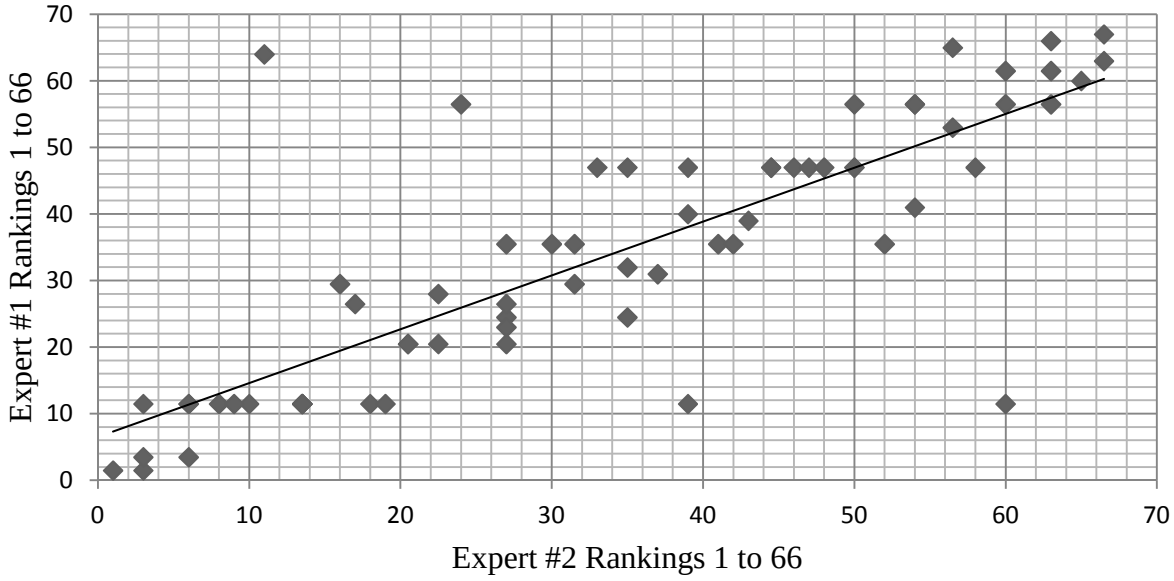

Figure 2. Scatterplot analysis of rankings of teachers from high to low level of SBI between expert #2 and expert #3 using the CReaTE evaluation rubric. $r = 0.88$, $N = 66$.

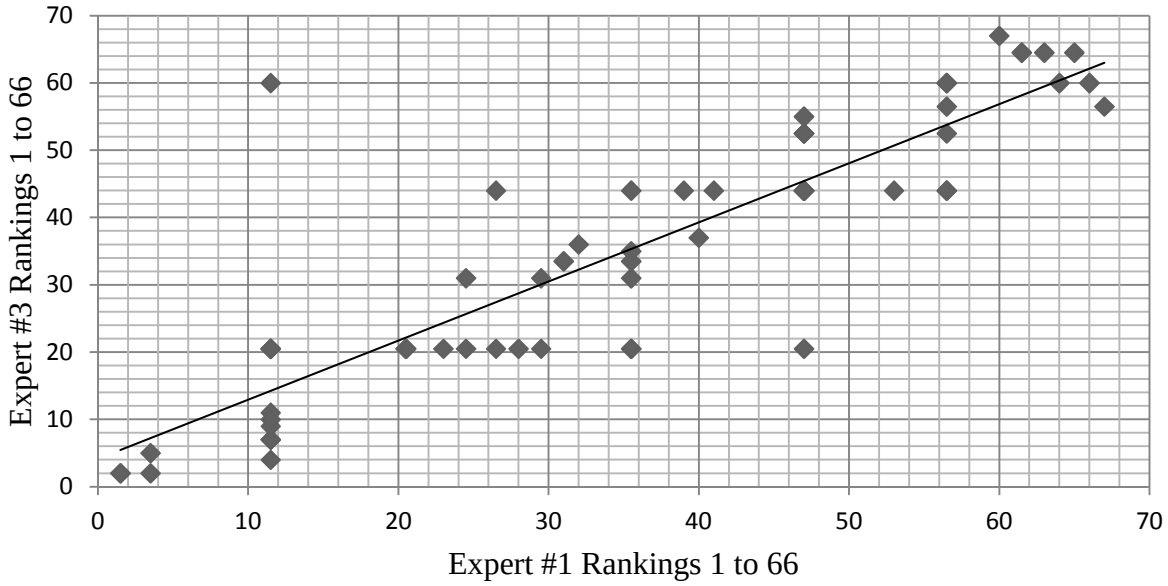

Figure 3. Scatterplot analysis of rankings of teachers from high to low level of SBI between expert #3 and expert #1 using the CReaTE evaluation rubric. $r = 0.85$, $N = 66$.

The Student Confirmation of SBI Practices Assessment

The students of the participating teachers were then asked to complete *The Student Confirmation of SBI Practices Assessment.* Each item of the assessment was answered with a five point Likert scale wherein "Always" = 4 points, "Often" = 3 points, "Sometimes" = 2 points, "Seldom" = 1 point, and "Never" = 0 points. None of the item stems were negative making a higher score represent a higher level of SBI for that teacher. Since not every student answered every item on the assessment, scores from each assessment were averaged so that instruments with items left unanswered would not have a negative effect on the overall results for whom the assessment had been completed.

The total number of *Student Confirmation of SBI Practices Assessment* forms returned was 409. The average number of students responding to the assessment and returning results with parent permission to the school office was approximately six per teacher. With the average class size of 27 students per teacher the return rate of *The Student Confirmation of SBI Practices*

Assessment fell at 22 percent. Those teachers from whom no students returned an assessment were left out of the rankings for only *The Student Confirmation of SBI Practices Assessment.*

Each student completing *The Student Confirmation of SBI Practices Assessment* was given the option to skip questions on the instrument that they did not want to answer on their own accord. As such, not all students answered every question on the instrument. Ergo, the scores on the instrument from each student was averaged to take into account those questions not answered on the instrument which would result in a lower overall score from students not answering every question as compared to students who did answer every question. Descriptive statistics are found in Appendix C. Teachers were then ranked for SBI based on their mean scores from *The Student Confirmation of SBI Practices* as completed by their students.

The Teacher Assessment Form

After *The Student Confirmation of SBI Practices Assessments* were collected, the participating teachers were administered *The Teacher Assessment Form* to self-evaluate their SBI practices. Sixty-six teachers completed the instrument out of the original 72 teachers who began the study for a return rate of 91.7 percent. A higher score on the instrument represented a higher level of SBI practices for that teacher. Items on the instrument were scored with a ten point Likert scale. Teachers were placed into rank order from high to low depending on their overall score on the instrument. The 20 lowest ranked teachers were placed in the low level SBI group and the 20 highest ranked teachers were placed in the high level SBI group.

Correlating the Teacher Ranks of SBI

Upon ranking the teachers based on the CReaTE Evaluation, *The Student Confirmation of SBI Practices Assessment* and *The Teacher Assessment Form*, the relationship between *The Student Confirmation of SBI Practices Assessment* and the CReaTE Evaluation result was calculated using Spearman's rho. The scatterplot shown in Figure 4 below suggests that a strong relationship exists between the CReaTE Evaluation and *The Student Confirmation of SBI Practices Assessment.* A Spearman rank correlation between the student and teacher instruments resulted in a coefficient of $r = 0.72$. The critical value of Spearman's rho for a sample size of 58 is $r = 0.26$ ($p = 0.05$) which suggests a strong relationship exists.

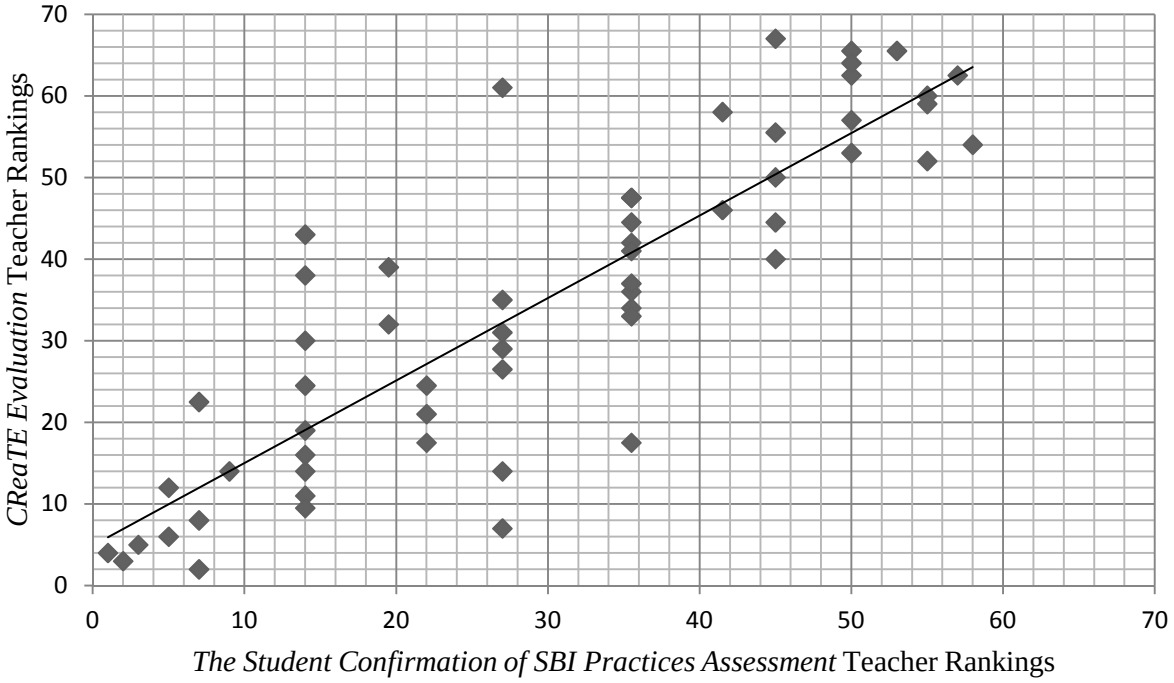

Figure 4. Scatterplot correlation analysis between *The Student Confirmation of SBI Practices Assessment* and the *CREaTe Evaluation*. $r = 0.72$

The Student Confirmation of SBI Practices Assessment was also related to *The Teacher Assessment Form* using Spearman's rho. The following scatterplot, Figure 5 below, reveals

another strong relationship between these two instruments. The results of the Spearman's Rank Correlation will be disclosed when the fifth hypothesis is discussed.

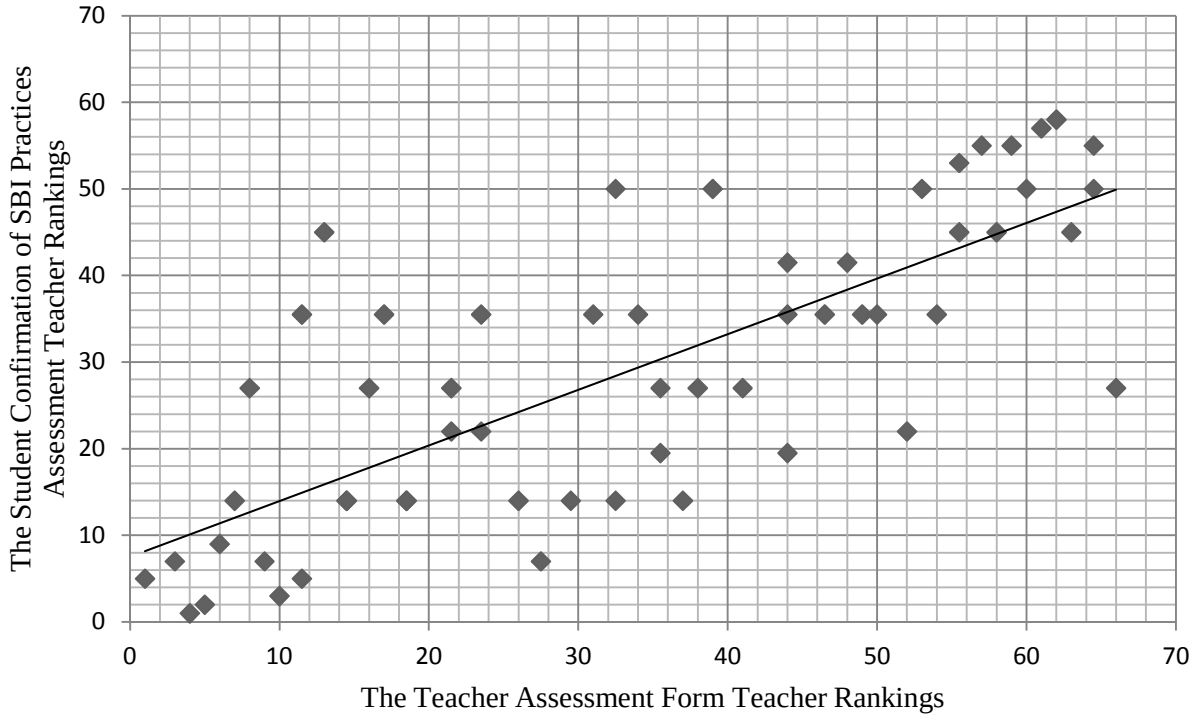

Figure 5. Scatterplot correlation analysis between *The Teacher Assessment Form* and *The Student Confirmation of SBI Practices Assessment.*.

A third analysis of association was calculated using Spearman's rho between the CReaTE Evaluation and *The Teacher Assessment Form.* The results of the Spearman's Rank Correlation reveal that $r = 0.85$, as seen in the Figure 6 scatterplot below, confirming that this is a strong relationship when compared to the 0.24 critical Spearman's rho value with a sample size of 67 ($p = 0.05$) and provides a foundation whereon the triangulation of data from all three sources support the rankings of participating teachers in regards to SBI.

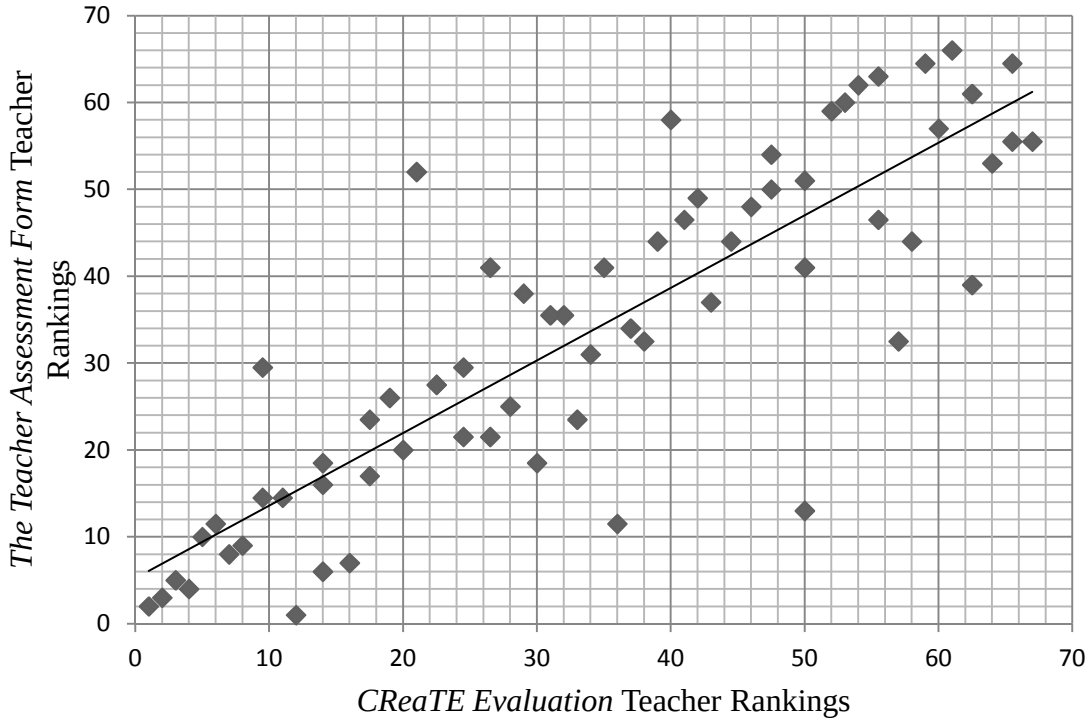

Figure 6. Scatterplot correlation analysis between the *CREaTe Evaluation* and *The Teacher Assessment Form. r* = 0.85

The rankings of the participating teachers from these three instrument sources were averaged to form an overall ranking of high to low SBI. The highest 20 and lowest 20 ranked teachers were used to complete the final assessment for this research: *The Teacher Attitude toward the Affective Domain Inventory.*

The Teacher Attitude toward the Affective Domain Inventory

Table 5 provides summary data of *The Teacher Attitude toward the Affective Domain Inventory* for parts I, II and III of the instrument.

Table 5

Summary Data: Parts I, II and III of The Teacher Attitude toward the Affective Domain Inventory

	Subscales		
	Part I Experience/Practice	Part II Awareness/Attitude/Belief	Part III Application
Item ID	9-18	20-56	57-70
Number of Items	10	37	14
Mean	9.25	126.6	34.32
Median	10	126.5	33
Mode	11	136	27
Standard Deviation	1.62	9.43	10.33
Cronbach's Alpha	0.72	0.90	0.77

Note: $N = 60$.

Data collected in this study was prescreened by a Levene's test using SPSS to determine if it violated parametric assumptions for conducting a *t*-test and ANOVA. The assumptions required for a *t*-test and ANOVA are: (a) The data are continuous; (b) the data follow the normal probability distribution; (c) the variances of the two populations are equal; (d) the two samples are independent; and (e) both samples are simple random samples from their respective populations (Pallant, 2010). The Levene's test determined that the variances of the high and low level SBI groups were equal for both the *t*-test (i.e., $p = 0.30$, no significant difference) and the ANOVA (i.e., $p = 0.49$, no significant difference).

A chi-square goodness-of-fit test indicated there was no significant difference in the proportion of high level SBI application assessment scores within one standard deviation of the mean identified in the current sample (70%) as compared with the value of 68.26% that is obtained in a normal distribution, X^2 (3, n=20) = .66, p < .88. In addition, a chi-square goodness-of-fit test indicated there was no significant difference in the proportion of low level SBI application assessment scores within one standard deviation of the mean identified in the current sample (65%) as compared with the value of 68.26% that is obtained in a normal distribution, X^2 (3, n=20) = .33, p < .96. Therefore, a two-tailed independent sample t-test necessary to assess the hypothesis of Research Question 1 could be carried out if the sample variance was also found to be within an acceptable range.

Table 6

Data for Normal Distribution in High and Low levels of SBI: Application

	High Level SBI: Application	Low Level SBI: Application
Mean	43.8	44
Standard Error	2.15	2.51
Median	42.5	44.5
Mode	36	53
Standard Deviation	9.62	11.24
Sample Variance	92.59	126.32
Range	35	39
Minimum	29	26
Maximum	64	65
Sum	876	880
Count	20	20
Confidence Level (95.0%)	4.50	5.26

Table 7 below shows the statistical summary of a Levene's test that was conducted to determine if the sample variance was found to be within an acceptable range. With $p < 0.05$, the critical F score ($F = 2.168$) is greater than the obtained F score ($F = 1.254$) and the significant level ($p = 0.30$) is greater than $p = 0.05$ indicating that the variances are essentially equal.

Table 7

Levene's Test: Two-Sample for Variances

	Low Level SBI: Application of the Affective Domain	High Level SBI: Application of the Affective Domain
Mean	44	43.8
Variance	126.32	92.59
Observations	20	20
df	19	19
Levene's Test for Equality of Variances	0.30	
F	1.25	
P(F<=f) one tail	0.25	
F Critical one-tail	2.17	

A chi-square goodness-of-fit test indicated there was no significant difference in the proportion of high level SBI attitude assessment scores within one standard deviation of the mean identified in the current sample (70%) as compared with the value of 68.26% that is obtained in a normal distribution, X^2 (3, n=20) = 3.30, $p < .35$. In addition, a chi-square goodness-of-fit test indicated there was no significant difference in the proportion of low level SBI. Attitude assessment scores were within one standard deviation of the mean identified in the current sample (70%) as compared with the value of 68.26% that is obtained in a normal distribution, X^2 (3, n=20) = .95, $p < .81$. Therefore, a two-tailed independent sample *t*-test

necessary to assess the hypothesis of Research Question 2 could be carried out if the sample variance was also found to be within an acceptable range.

Table 8

Data for Normal Distribution in High and Low levels of SBI: Attitude

	High Level SBI: Attitude	Low Level SBI: Attitude
Mean	130.15	120.2
Standard Error	3.33	3.01
Median	134.0	120.5
Mode	134	119
Standard Deviation	14.90	13.45
Sample Variance	222.03	180.91
Range	54	56
Minimum	101	85
Maximum	155	141
Sum	2,603	2404
Count	20	20
Confidence Level (95.0%)	6.97	6.30

Table 9 shows the statistical summary of a Levene's test that was conducted to determine if the sample variance was found to be within an acceptable range. With $p < 0.05$, the critical F score ($F = 2.17$) is greater than the F score ($F = 0.50$) and the significant level ($p = 0.49$) is

greater than $p = 0.05$ indicating that the variances are essentially equal and a two-tailed independent sample *t*-test was carried out.

Table 9

Levene's Test: Two-Sample for Variances

	Low Level SBI: Attitude of the Affective Domain	High Level SBI: Attitude of the Affective Domain
Mean	130.15	120.2
Variance	228.03	180.91
Observations	20	20
df	19	19
Levene's Test for Equality of Variances	0.49	
F	0.50	
P(F<=f) one tail	0.33	
F Critical one-tail	2.17	

Hypothesis 1

Research Question 1 is: *Do high school teachers who utilize a high level of standards-based instruction practices apply the affective domain in their lessons less than those teachers who utilize a low level of standards-based instruction?*

The null hypothesis associated with Research Question 1 is: *There is no statistically significant difference in the amount of application of the affective domain between high school teachers who utilize a high level of standards-based instruction practices compared to those*

teachers who utilize a low level of standards-based instruction practices as shown by *The Teacher Attitudinal Assessment toward the Affective Domain instrument* that has been tested for validity and reliability.

Table 10 below gives an overview of the summary statistics.

Table 10

Two-sample t-Test: Application of the Affective Domain

Group	n	M	SD	*t*	*p*
Teachers with High SBI Level	20	43.8	8.65		
				-0.06	0.95
Teachers with Low SBI Level	20	44	10.38		

Concerning the application of the Affective domain in classrooms, the 20 highest ranking SBI teachers had only slightly lower scores on the *Teacher Attitudinal Assessment Toward the Affective Domain* (M = 43.8, SD = 9.62) than the 20 participants categorized as low ranking SBI teachers (M = 44, SD = 11.24). As a result, the mean difference was not significant, $t(37)$ = -0.06, $p < 0.47$. The obtained alpha-level did not meet or exceed the criterion of $p < 0.05$; therefore, the null hypothesis for Research Question 1 was retained.

Hypothesis 2

Research Question 2 is: *What are the attitudes towards the affective domain of high school teachers who utilize a high level of standards-based instruction practices compared to those teachers who utilize a low level of standards-based instruction practices?*

The null of hypothesis concomitant with Research Question 2 states: *There is no statistically significant difference in the attitudes towards the affective domain of high school teachers who utilize a high level of standards-based instruction practices compared to those teachers who utilize a low level of standards-based instruction practices as indicated by The Teacher Attitudinal Assessment toward the Affective Domain instrument that has been tested for validity and reliability.* The total score from part II of *The Teacher Attitude toward the Affective Domain Inventory* addresses the attitude of teachers toward the Affective domain and were all scored positively to provide a sum total on the attitude subscale.

Table 11 below provides a summary of the statistics.

Table 11

Two-sample t-Test: Attitude Towards the Affective Domain

	Teachers with High SBI Level	Teachers with Low SBI Level
Mean	130.15	120.2
Variance	222.03	180.91
Standard Deviation	14.90	13.45
Observations	20	20
df	38	
t Stat	2.22	
P(T ≤ t) two-tail	0.03	
t Critical two-tail	2.02	

In regards to the attitude towards the affective domain by teachers, high ranked SBI teachers had higher scores on the *Attitudinal Assessment Toward the Affective Domain* (*M* = 130.15, *SD* = 14.90) than the teachers categorized as low ranked SBI teachers (*M* = 120.2, *SD* = 180.91). As such, the mean difference was significant, $t(38) = 2.22$, $p = 0.03$. The obtained alpha of .03 exceeded the criterion cut-off of $p < 0.05$. The magnitude of the differences between sample means was = 9.95, 95% *CI*: 0.863 to 19.037. The effect size for the results of Research Question 2 is moderately large, $d = 0.70$ (Cohen, 1988). As a result of these analyses, the null hypothesis for Research Question 2 was rejected.

Hypothesis 3

Research Question 3 states: *What are the affective domain applications of different grade levels of high school teachers who utilize a high level of SBI practices compared to those teachers who utilize a low level of SBI practices as indicated by The Teacher Attitudinal Assessment toward the Affective Domain instrument that has been tested for validity and reliability?*

Table 12

Descriptive Statistics for Two-Way ANOVA

	N	SD	Mean
High Level SBI	20	9.62	43.8
Low Level SBI	20	11.24	44.4
Grade 9	10	13.45	45.7
Grade 10	14	8.71	41.6
Grade 11	7	10.98	42.9
Grade 12	9	9.11	46.2

Concerning the affective domain applications of different grade levels, teachers had very similar scores on the *Teacher Attitudinal Assessment Toward the Affective Domain* between grades 9-12, with grade 9 (M = 55.7) being the highest score and grade 12 (M = 36.0) returning the lowest score. High SBI: grade 11 (M = 42.3) and Low SBI: grade 11 (M = 43.3) were the closest scores within grade levels.

Figure 7 below provides a representation of the level of application of the affective domain by grade level and the interaction between high versus low level SBI. Notice that in grades 9 and 10, the application of the affective domain is higher in classrooms with a lower level of SBI. In grade 11, the application of the Affective domain is nearly the same for both high and low levels of SBI, while in grade 12 the application of the Affective domain is higher in classrooms with a higher level of SBI.

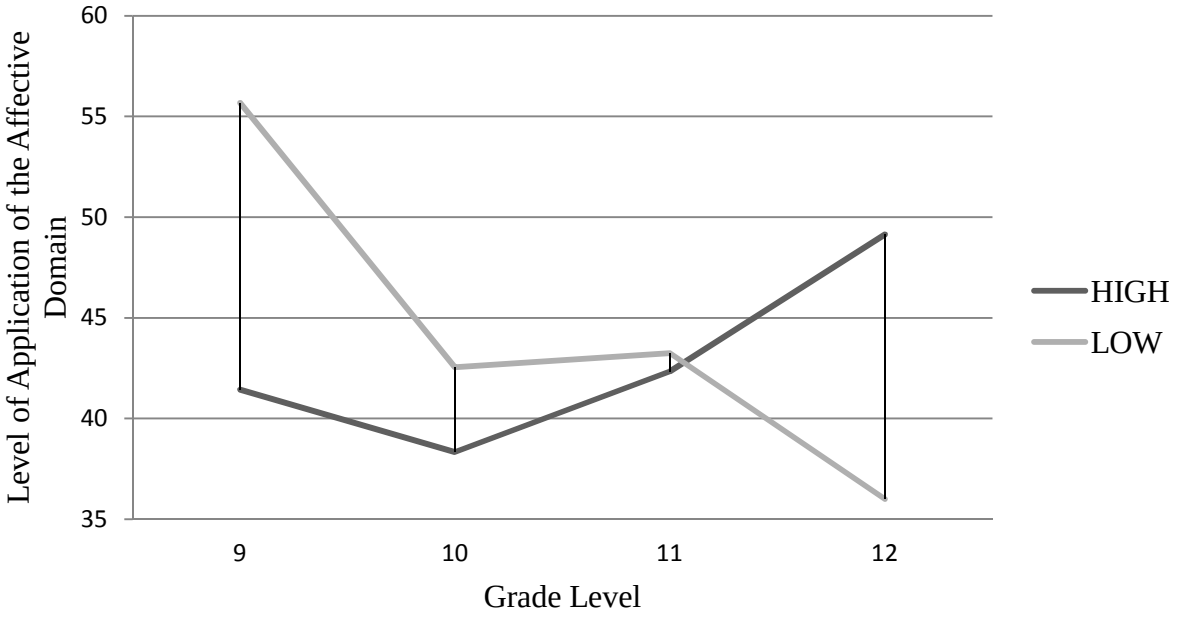

Figure 7. Level of application of the Affective domain between grade levels 9, 10, 11 and 12 comparing high versus low level of Standards Based Instruction.

Table 13 shows the results of the two-way between-groups analysis of variance to explore the impact of teachers' level of SBI and grade level on their application of the affective domain. Participants were divided into four groups according to the grade level they teach (Grade levels 9-12). The interaction effect between teachers' level of SBI and grade level was not statistically significant, F (2, 32) = 2.23, p = 0.10. The main effect for grade level, F (2, 32) = 1.02, p = 0.40, and level of SBI, F (2, 32) = 0.18, p = 0.68 did not reach statistical significance

as was reflected in a Tukey Honestly Significant Difference test. Consequently, the null hypothesis is retained: *There is no statistically significant difference in the affective domain applications for different grade levels between high school teachers who utilize high levels of standards-based instruction practices compared to those high school teachers who utilize low levels of standards-based instruction practices as shown by The Teacher Attitudinal Assessment toward the Affective Domain instrument that has been tested for validity and reliability.*

Table 13

Two-Way Between Groups ANOVA

	SS	*df*	*MS*	*F*	*P-value*	*Partial r* ^{2}
High/Low SBI	18.22	1	18.22	0.18	0.68	0.01
Grade Level	310.87	3	103.62	1.02	0.40	0.09
Interaction Effect	680.85	3	226.95	2.23	0.10	0.17
Error	3262.05	32	101.94			
Total	81248	40				
Corrected Total	4159.60	39				

Hypothesis 4

Research Question 4 is: *Do teachers' years of experience with a high level of standards-based instruction practices influence the level of importance teachers place upon affective goals compared to the level of importance that teachers place upon affective goals of teachers that use a low level of standards-based instruction practices?*

The null hypothesis associated with Research Question 4 is: *There is no statistically significant difference in the level of importance teachers place upon Affective goals between teachers that utilize high levels of standards-based instruction practices and those teachers who utilize low levels of standards-based instruction practices in terms of their years of experience as shown by The Teacher Attitudinal Assessment toward the Affective Domain instrument that has been tested for validity and reliability.*

Descriptive statistics for Hypothesis 4 are presented in Table 14. According to Table 14, high level SBI teachers with 21 to 25 years of experience show the highest mean (M = 142.0) and teachers with over 25 years of experience in the low level SBI group show the lowest mean (M = 109.5) in terms of the importance teachers place upon Affective goals.

Table 14

Descriptive Statistics for Two-Way ANOVA

	N	SD	Mean
High Level SBI	20	14.9	130.2
Low Level SBI	20	13.5	120.2
1 to 5 years of experience	3	8.1	127.7
6 to 10 years of experience	5	10.0	126.6
11 to 15 years of experience	15	16.9	128.4
16 to 20 years of experience	6	11.0	123.7
21 to 25 years of experience	3	17.0	125.0
Over 25 years of experience	8	18.5	118.5

These data are also represented in Figure 8 below where the level of importance teachers place on Affective goals is categorized by teachers' years of experience and the interaction between high versus low level SBI.

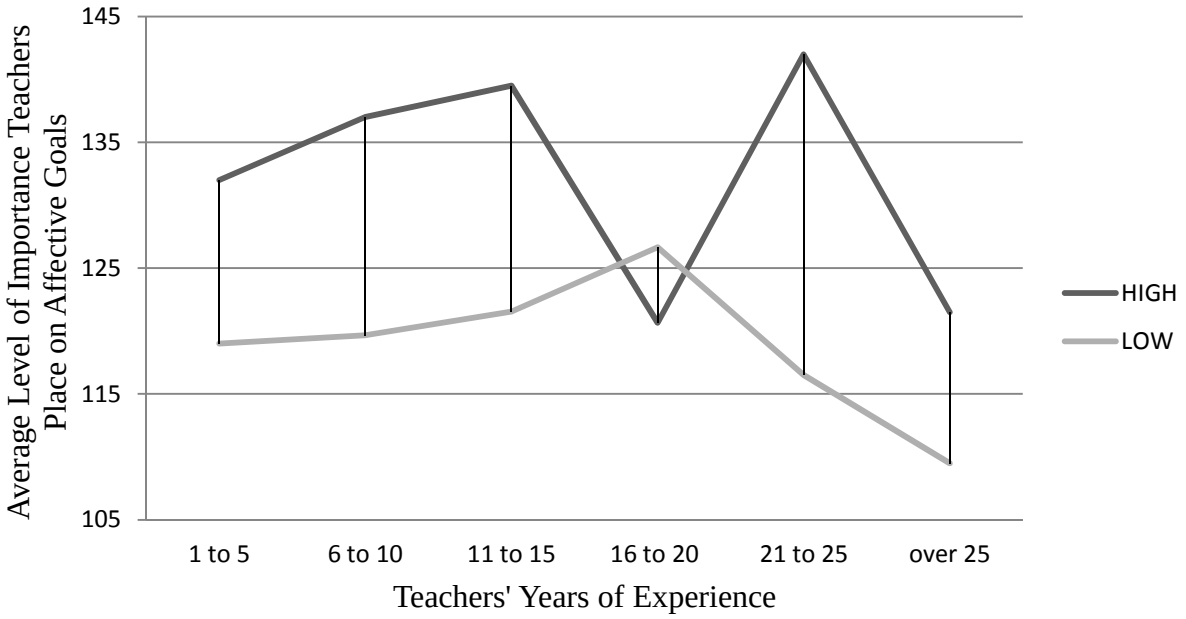

Figure 8. Level of importance teachers place on Affective goals and the teachers' years of experience in comparing high versus low level of Standards Based Instruction.

A two-way ANOVA determined the statistical significance of differences in terms of years of experience revealing that there is not a significant difference between high levels of SBI versus low levels of SBI. Table 15 shows summary statistics for the fourth hypothesis.

Table 15

Two-Way Between Groups ANOVA

	SS	*df*	*MS*	*F*	*P-value*	*Partial r* ^{2}
High/Low SBI	1144.69	1	1144.69	5.47	0.03	0.16
Years of Experience	992.50	5	198.50	0.95	0.47	0.15
Interaction	730.24	5	146.05	0.70	0.63	0.11
Error	5860.06	28	209.29			
Total	635397.00	40				
Corrected Total	8645.78	39				

Since the main effect for high and low SBI level, F (1, 28) = 5.47, p = 0.03, demonstrates statistical significance of Research Question 2: *What are the attitudes towards the affective domain of high school teachers who utilize a high level of standards-based instruction practices compared to those teachers who utilize a low level of standards-based instruction practices?*; the rejection of hypothesis 2 is confirmed. Nonetheless, in addressing Research Question 4, after the participants were divided into six groups according to their years of teaching experience (Group 1: 1-5 years; Group 2: 6-10 years; Group 3: 11-15 years; Group 4: 16-20 years; Group 5: 21-25 years; Group 6: over 25 years), the interaction effect between level of SBI and years of experience was not statistically significant, F (5, 28) = 0.70, p = 0.63. The main effect for years of teaching experience was also statistically insignificant F (5, 28) = 0.95, p = 0.47. Post-hoc

comparisons using the Tukey honestly Significant Difference test verified the results of the two-way ANOVA and the null hypothesis for Research Question 4 is retained.

Hypothesis 5

The null hypothesis for Research Question 5 is: *There is no statistically significant relationship between the perceptions of students on the level of standards-based instruction practices in high school classrooms to that which is self-reported by their teachers as shown by The Student Confirmation of SBI Practices Assessment and the Teacher Assessment Form which were tested for reliability and validity*. Hypothesis 5 directly addresses the question of: "Is there a relationship between the level of standards-based instruction practices in high school classrooms as perceived by students and the level of SBI as self-reported by their teachers?"

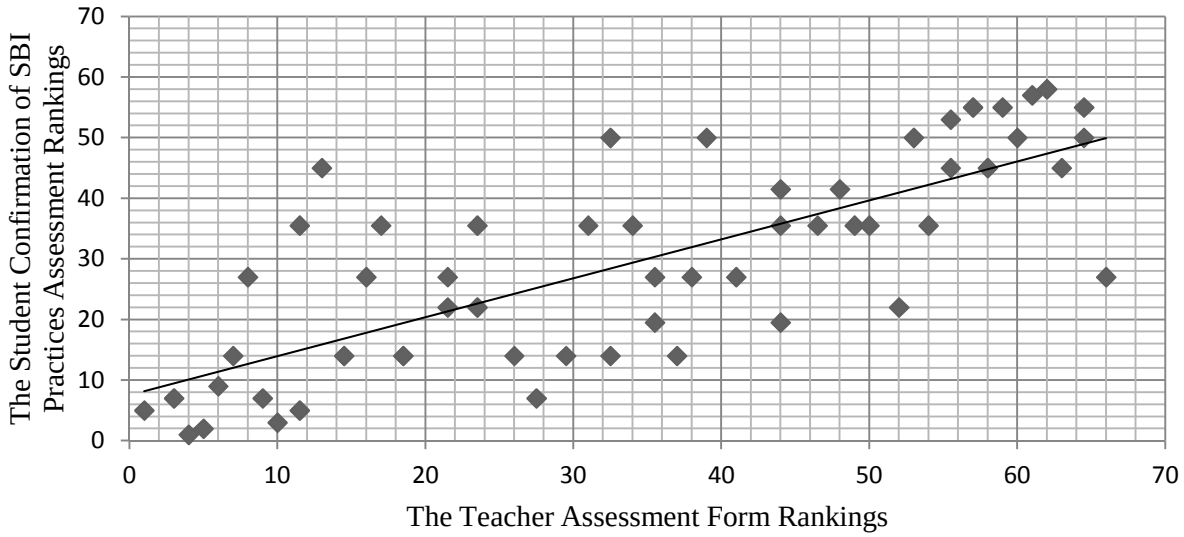

Figure 9. Scatterplot correlation analysis between *The Teacher Assessment Form* Rankings and *The Student Confirmation of SBI Practices Assessment* rankings.

A significant Spearman's rho of $r = 0.71$ was obtained between the level of standards-based instruction practices in high school classrooms as perceived by students and the level of SBI as self-reported by their teachers, $r(56) = p < 0.01$, two-tailed. The value of $r = 0.71$

suggests that a strong relationship does exist between the correlated variables (Gwet, 2012). The null hypothesis for Research Question 5 is therefore rejected.

An *r* of 0.71 suggests a large effect size. The square of the *r*-value (i.e., 0.71) is the percentage of variance explained between the self-reported level of SBI by teachers and the level of SBI as perceived by their students. The coefficient of determination value, or r^2 , in this case is 0.50 ($0.71^2 = 0.50$), meaning that 50% of the variance between the variables is explained or accounted for by the relationship between the self-reported level of SBI by teachers and the level of SBI as perceived by their students. The 95% confidence level ($p = 0.05$) for scores related to the level of SBI as perceived by students ranges from 29.52 to 33.83. For the SBI teacher self-report measure, the confidence interval ranges from 28.33 to 37.67.

Conclusion

Data supporting the rankings of the participating teachers and the formation of a high level of SBI group and a low level of SBI group was triangulated and correlated. Data was examined to find group differences using the independent two sample *t*-test and ANOVA. The data analysis led to the rejection of the null hypothesis for Research Question 2 and 5. The null hypothesis was retained for Research Questions 1, 3, and 4. A summary of the data findings, their interpretations, their implications in light of the current literature and theory, an outline of the study limitations and recommendations for future research of these findings will be discussed in the next chapter.

CHAPTER FIVE: DISCUSSION

This causal-comparative study sought to address the question of whether teachers who use high level of Standards-Based Instruction practices apply the Affective domain as a part of their classroom teaching strategies. The study compared the attitudes towards, the importance placed on, and the classroom applications of the affective domain of teachers who utilize a high level of SBI practices in their classrooms with teachers who utilize a low level of SBI practices in their classrooms. Differences in grade levels and years of teaching experience were an additional area of focus for the study. Perceptions of students on the level of teachers' standards-based instruction practices in relation to that which is self-reported by their teachers were also examined. The design and methodology of the study was shown to be an effective means in attaining the data required to successfully perform the study with the target population.

Participants in the study were grouped into high and low levels of standards-based instruction by triangulating data collected from three different instruments. Participating teachers were asked to submit their classroom learning activities for five consecutive days of teaching. These activities were evaluated by three experts in the field of education to produce a ranking of participating teachers from highest to lowest standards-based instruction practices. A very strong Spearman's rho correlation was found between the expert evaluations ranging from 0.82 to 0.88.

A second data source for ranking the SBI of participating teachers was taken from a student completed instrument shown to have high internal consistency/reliability between items ($r = 0.90$). Concurrent validation of the student instrument with the expert evaluation rankings resulted in a strong Spearman rho coefficient of 0.72.

A third data source for ranking the SBI of participating teachers was gathered from a self-report instrument completed by the participating teachers of the study. Teachers completed this instrument by reporting the types of instructional practices they use in their classrooms on a regular basis. The teacher instrument was found to have internal consistency with a reliability coefficient of 0.93. The teacher self-report instrument was correlated with both the expert evaluation rankings and the student completed instrument rankings. A very strong Spearman's rho correlation 0.85 was obtained between the teacher self-report instrument and the expert evaluations rankings. A strong Spearman rho correlation of 0.62 was obtained between the teacher self-report and the student instrument.

This triangulation of data formed the basis for ranking the 60 participating teachers into two groups: the 20 highest ranking teachers of SBI and the 20 lowest ranking teachers of SBI. Placing the 60 teachers into a high SBI group of 20 and a low SBI group of 20 while eliminating the middle 20 teachers ensured that the highest level of ranked teachers were in the top half of each ranking and the lowest level of ranked teachers were in the bottom half of each ranking taken from the CReaTE expert evaluation, the student evaluation, and the teacher self-report of SBI. Splitting the participants into 30 high and 30 low SBI groups would have created a situation in which many teachers would have been ranked in the high group under one evaluation or evaluator and the same teachers could have been ranked in the low group under one of the other evaluations or evaluators. Creating two groups of 20 ensured those teachers in the high group were actually ranked as high SBI teachers and those teachers in the low group were actually ranked as low SBI teachers in each of the evaluations and by each of the evaluators. This created a scenario in which "the two extremes are more likely to reveal differences on the

other variable of interest" or the difference between a low level of SBI practices in relation to a high level of SBI practices (Gall et al., 2007, p. 312).

Participants of these two groups then completed the *Teacher Attitudinal Assessment Toward the Affective Domain.* The results of this instrument were used to answer four of the five research questions addressed in this study. The following section summarizes the full findings presented in Chapter 4.

Summary of the Findings

Research Question 1

Do high school teachers who utilize a high level of standards-based instruction practices apply the affective domain in their lessons less than those teachers who utilize a low level of standards-based instruction?

Null Hypothesis 1 ($H_0 1$): There is no statistically significant difference in the amount of application of the affective domain between high school teachers who utilize a high level of standards-based instruction practices compared to those teachers who utilize a low level of standards-based instruction practices as indicated by *The Teacher Attitudinal Assessment toward the Affective Domain* instrument that has been tested for validity and reliability.

In order to answer the null hypothesis, an independent sample *t*-test ($p < 0.05$, two-tailed) was conducted to determine if mean differences between the level of SBI and application of the affective domain was statistically significant or not. The results indicate there was no statistically significant difference between level of standards-based instruction and the application of the affective domain ($t = -0.06$, $p = 0.95$) as self-reported through *The Teacher Attitudinal Assessment toward the Affective Domain*. Thus, the null hypothesis for Research Question 1 was retained.

Research Question 2

What are the attitudes towards the affective domain of high school teachers who utilize a high level of standards-based instruction practices compared to those teachers who utilize a low level of standards-based instruction practices?

Null Hypothesis 2 ($H_0 2$): There is no statistically significant difference in the attitudes towards the affective domain of high school teachers who utilize a high level of standards-based instruction practices compared to those teachers who utilize a low level of standards-based instruction practices as indicated by *The Teacher Attitudinal Assessment toward the Affective Domain* instrument that has been tested for validity and reliability.

Statistical testing using a two-tailed sample *t*-test was conducted to determine the difference between level of SBI and attitude towards the affective domain. Results indicate there was a statistically significant difference between high and low levels of SBI and the teachers' attitude towards the affective domain ($t = 2.22$, $p = 0.033$). Furthermore, the magnitude of the differences in the means indicated a moderately large (Cohen, 1988) effect size with $d = 0.70$. Because a significant difference was found between the groups, the null hypothesis for Research Question 2 is rejected.

Research Question 3

What are the Affective domain applications of different grade levels of high school teachers who utilize a high level of standards-based instruction practices compared to those teachers who utilize a low level of standards-based instruction practices?

Null Hypothesis 3 ($H_0 3$): There is no statistically significant difference in the affective domain applications for grade levels between high school teachers who utilize a high level of standards-based instruction practices compared to those teachers who utilize a low level of

standards-based instruction practices as indicated by *The Teacher Attitudinal Assessment Toward the Affective Domain* instrument that has been tested for validity and reliability.

Research question 3 was tested by performing a two-way ANOVA to determine whether an effect existed between high versus low-level SBI on 9th through 12th grade students' teachers' application of the Affective domain. The result of this analysis shows that there is no statistically significant interaction between high and low-level SBI on 9th-12th grade students' teachers' Affective domain implementation, $F(1, 7) = 0.07$, $p = 0.80$. The main effect for grade level, $F(2, 32) = 1.02$, $p = 0.40$, and level of SBI, $F(2, 32) = 0.18$, $p = 0.68$ did not reach statistical significance as was reflected in a Tukey Honestly Significant Difference test. The results suggest that across 9th through 12th grade, no particular grade level applied Affective domain instruction more or less differently than any other teacher across the same grade levels. As such, the null hypothesis for Research Question 3 is retained.

Research Question 4

Do teachers' years of experience with a high level of standards-based instruction practices influence the level of importance teachers place upon affective goals compare to the level of importance that teachers place upon affective goals of teachers that use a low level of standards-based instruction practices?

Null Hypothesis 4 ($H_0 4$): There is no statistically significant difference in the level of importance teachers place upon affective goals between teachers that utilize high levels of standards-based instruction practices and those teachers who utilize low levels of standards-based instruction practices in terms of their years of experience.

Research question 4 was tested using a two-way ANOVA to determine whether differences exist between high and low SBI teachers' years of teaching experience and the level

of importance they gave to Affective goals. The result of this analysis indicates that there is no statistically significant difference between teachers' years of experience in high and low levels of SBI and the importance they place on Affective goals $F(1,11) = 6.82$, $p = 0.47$. Years of teaching experience did not lead to a difference in the importance teachers place upon the goals/purpose of the Affective domain. Thus, the null hypothesis for Research Question 4 is retained.

Research Question 5

Is there a relationship between the level of standards-based instruction practices in high school classrooms as perceived by students and the level as self-reported by their teachers?

Null Hypothesis 5 ($H_0 5$): There is no statistical significant relationship between the level of standards-based instruction practices in high school classrooms as perceived by students and the level as self-reported by their teachers.

A Spearman's rank-order (i.e., rho, two-tailed test) correlation was conducted to assess the concurrent relationship between variables related to (a) students' perceived level of SBI practices in high-school classrooms, and (b) the level of SBI as self-reported by their teachers. A correlation for the data revealed a significant positive relation between students' perceived level of SBI practices in their classroom and teachers' self-reported SBI level, $r(58) = 0.71$, $p = 0.01$. The coefficient of determination is 50.4% meaning that over half of the variance between the students' perceived level of SBI in high school classrooms and the level of SBI as self-reported by their teachers is shared. The confidence interval for the level of SBI as perceived by students with a 95% confidence level that the interval calculated contains the true population mean ($p = 0.05$) is from 25.21 to 33.83. The 95% confidence interval for the teacher self-report of SBI was

found to be from 28.33 to 37.67. Because a significant relationship was found between the variables, the null hypothesis for Research Question 5 is rejected.

Conclusions and Implications

The results of the statistical analysis for Research Question 1 indicate there was no statistically significant difference between level of standards-based instruction and the application of the affective domain. This implies that teachers teaching at a high level of SBI and those who teach at a low level of SBI have no meaningful differences in the way they teach to the Affective domain.

The literature suggests that students taught by teachers who utilize a high level of SBI obtain higher cognitive development than those students who are taught by teachers who utilize a low level of SBI (Johnson, 2002; McCaffrey, et al., 2001; Thompson, 2009). Middle School students, like those found in Ohio, were positively influenced on science achievement tests by teachers who use standards-based teaching practices increased mean scores from 45% to 61%, are just one example (Kahle, Meece, & Scantlebury, 2000). Johnson (2002, p.7) points out that "Formerly low-achieving schools that have embraced these principles are demonstrating dramatic gains in student achievement." However, according to the findings in this study in relation to Research Question 1, students in high level SBI classrooms are not receiving a greater amount of application of the affective domain in their classrooms from their teachers than students in low level SBI classrooms. While this research does not indicate the behaviors of students in low level SBI classrooms as compared to students in high level SBI classrooms, this research does give us cause to pause when considering the statement by Theodore Roosevelt, who once said, "To educate a person in mind and not in morals is to educate a menace to society" (Morris, 2009, p. 195). As teachers improve their abilities to educate students on a

cognitive level through high levels of SBI, it may work to society's detriment if the ability of teachers to address the affective domain is not improved upon as well. Another source of hesitation for the lack of application of the affective domain results from Charles Haynes of the First Amendment Center who stated that for democracy to flourish, public education must play a central role in promoting responsible moral action that serves the common good (Essex, 2012).

The teachers in this study were asked to classify themselves on their experience in the application of affective objectives in the classroom. Fifty percent of teachers from the low level group of SBI classified themselves as being "expert," 45% classified themselves as being "novice," and 5% classified themselves as having "no experience." Of those teachers in the high SBI group, 60% classified themselves as being "expert," 35% classified themselves as being "novice," and 10% classified themselves as having "no experience." Research also shows that teachers who receive training in character education and implement character education in the classroom results in higher academic performance for students (Elias, DeFini, & Bergmann, 2010; Hough, 2011). Seventy-seven percent of 30 Midwest schools wherein 50% or more of the teachers of those schools had completed character education training and had implemented that training in their classrooms over a two year period met their respective annual yearly progress goals (Hough & Schmitt, 2011).

The implication here is threefold. First, the results of this study would lead one to posit that the effectiveness of SBI is not the result of affective domain application since higher academic performance is associated with SBI and this research indicates that the application of the affective domain is not significantly different between high and low levels of SBI. Secondly, perhaps a higher application of the affective domain in SBI would result in an even higher academic performance by students than that which has been verified by studies such as those

referred to above. And finally, third, many of the teachers in this study self-report that they may not even know how, or are aware of—according to their "novice" or having "no experience" classification—best evidence-based practices for teaching Affective skills.

What seem to contradict the findings of Research Question 1 are the statistical analysis results of Research Question 2. There is a statistically significant difference in the attitudes towards the affective domain of high school teachers who utilize a high level of standards-based instruction practices compared to those teachers who utilize a low level of standards-based instruction practices. However, while the findings were statistically significant to reject the null hypothesis ($p = 0.03$) and the effect size was found to be moderately large ($d = 0.70$), there is reason to question the measure of the differences between the group means (i.e., 9.95) in terms of the confidence interval (95% $CI = 0.86$ to 19.03). This large confidence interval could result from measurement error associated with *The Teacher Attitude toward the Affective Domain Inventory*, using a small sample size, or heterogeneity in the sample (Higgins, 2011). With a confidence interval range of 19.95, the likely reasonable values for the target population are great wherein duplicate studies could very well find results with *p*-values above 0.05, thus making the findings insignificant.

Assuming the results of Research Question 2 are statistically significant, the implication could be that teachers utilizing higher SBI levels in their classrooms have a more positive attitude towards the affective domain than teachers who utilize a lower level of SBI in their classrooms; yet, as discussed for Research Question 1, the application of the Affective domain between the two groups was found to have no statistical difference. This may reflect an assortment of affective standards of what the teacher perceives as useful so long as it seems to cover what's outlined in the standards. Another possibility is that teachers like the idea of

teaching to the Affective domain, but lack the ambition to put it into practice. Since both high and low level SBI teachers were employing affective based instructional practices at the same level, according to what they self-reported on *The Teacher Attitude toward the Affective Domain Inventory*, the assumption could be made that cognitive development may be taking priority over affective development by those teaching at a higher level of SBI while those teaching at a low level of SBI have prioritized neither domain. As referenced earlier, the cause of this may be due to the number of teachers (45%) in this study self-reporting that they feel they are "novice" or have "no experience" in affective domain application and may not have the tools to apply best evidence-based practices for teaching Affective skills.

Adding to the contradiction is research asserting that the implementation of social skill and classroom management programs such as *First Step* (Carter & Horner, 2009; Walker, 2000), *Second Steps* (Neace & Muñoz, 2012), *Positive Behavioral Interventions and Supports* (Simonsen et al., 2012), *Functional Behavioral Assessment-Based Interventions* (Gage, Lewis, & Stichter, 2012) and the *Good Behavior Game* (Leflot et al., 2010) experience a decrease in behavior problems and classroom disruptions and an increase in academic commitment. A possible reason behind the lack of a significant increase in the application of the affective domain by teachers of higher level SBI is provided in other research literature. For example, findings by Erişti and Tunca (2012) claim that teachers feel their schools are not funded properly to look beyond placement tests suggesting that only the cognitive development of the student is what matters exclusive of affective development.

Harriman (2005), Neill (2006), and Weaver (2004) speculated that NCLB would lead students to learn the curriculum, but would not lead students to affectively appreciate its value. The combined findings for research question 1 and 2 give support to their speculation. Brimi

(2009) discusses the need for teachers to strike a balance between acting as academic instructors for students and moral guides for young people in an historical context reaching back beyond the modern era of education. As schools, administrators and teachers intently focus on the cognitive learning of students in order to meet the requirements of NCLB, affective programs or other activities that emphasize the affective domain are not being used in the classroom to improve student affective skills. The questions of, "What about the affective domain?", "Is the whole child being taught?", and "Are students being prepared with a proper attitudinal focus to be successful in the world of today and tomorrow?" should arise in the minds of legislatures, administrators, teachers and parents. The results of this study help determine if teachers who use a high level of SBI are taking into account the affective domain as they prepare to teach children in their classrooms. It appears in accordance to the findings of Research Questions 1 and 2 that the balance Brimi (2009) hoped for is not being met as teachers of higher levels of SBI weigh more heavily on applying academic needs of students than that of their affective needs.

Assuming the findings of Research Question 2 are insignificant according to the wide confidence interval range of 0.86 to 19.03, wherein the likely reasonable values for the target population are great and duplicate studies could very well find results with *p*-values above 0.05, thus making the findings insignificant; then those teachers who have adapted to meet cognitive needs of students by incorporating high levels of SBI into their curriculum have the same attitude towards the Affective domain as teachers who teach at a low level of SBI.

Research Question 3 addresses grade level and the application of the affective domain between high and low levels of SBI. The findings suggest that there is no statistically significant difference in the affective domain applications for grade levels between high school teachers who utilize a high level of standards-based instruction practices compared to those teachers who

utilize a low level of standards-based instruction practices. This implies that, regardless of grade level, students are being taught similarly in regards to the affective domain in both high and low level SBI classrooms. This phenomenon may be taking place due to teachers' lack of a specific, research validated curriculum or by simply doing and teaching whenever and whatever they feel addresses affective outcomes. A study by Kelly (2008) indicates that teachers reward positive student behaviors most often when those behaviors have positive cognitive results suggesting a lack of a specific, research validated curriculum. In another study (Collett, Kelly, & Sobolewski, 2010), teachers used what they thought would benefit students the most.

Grade level is seen as an indicator of cognitive ability in students. The result of Question 3 suggests that as students progress cognitively from one grade to the next, it is possible that their affective progression may not be keeping pace. Whether or not Affective learning is keeping pace with cognitive progress and the reasons that teachers are addressing the cognitive domain and not addressing the affective domain are possible topics for future research. If teachers are not directing student progression in the affective domain then it is up to the alternative, namely, parents, peers, or media sources.

The results of the statistical analysis for the fourth question indicate there is no statistically significant difference in the level of importance teachers place upon affective goals in terms of years of experience between teachers that utilize high levels of standards-based instruction practices and those teachers who utilize low levels of standards-based instruction practices. This implies that teachers' years of experience do not impact the degree to which they apply the affective domain in their classrooms or their attitudes towards the affective domain. The overall mean score on *The Teacher Attitudinal Assessment Toward the Affective Domain* instrument revealed a general positive reflection of the application and attitude towards the

affective domain by both high and low level SBI teachers. Regardless of years teaching teachers find the need to teach affective skills socially valid and important.

Bicak (2003) hypothesized that younger teachers would have a more positive attitude toward the affective domain due to their more recent teacher training which may have exposed them to the benefits of teaching to the affective domain more so than teachers with more teaching experience. However, as with Bicak's (2003) findings, the results of this study indicate that as teachers in training enter the teaching field; their attitude towards the affective domain is similar to teachers who have many years of experience. Supporting this indication is research by De Souza (2004), in which the lesson plans of two teachers in training, who were teaching students approximately 15 years old in age, weighed heavily on the cognitive focus of learning, but exposed no significant evidence of the affective or spiritual dimensions of learning in their lesson planning. Buchanan and Hyde (2008, p. 310), in discussing the dynamic between the cognitive dimension and affective dimensions explored by teacher training services in a publicly funded university, warn against placing "an extensive emphasis on the cognitive dimension of learning." Their warnings are played out as state-testing focuses more on academic skills and less on affective skills (Hall, 2011). State tests that annual yearly progress calculations are factored off of do not assess affective skills. It is reasonable to think, therefore, that teachers would teach to academic outcomes rather than affective outcomes and their attitude would reflect that focus.

Much of the research examining the effective use of affective instructional practices in the classroom has been identified through student perceptions or knowledge gained by students within the affective domain (Bacon, 1999). Research Question 5 attempts to determine if the student perception of SBI is associated with what teachers believe they address in their

classrooms. The results of Research Question 5 suggest that there is a statistically significant relationship between the level of standards-based instruction practices in high school classrooms as perceived by students and the level as self-reported by their teachers. This implies that student perception and reporting of classroom SBI is a viable source of information for such purposes as those warranted by educational research needs, school administrative evaluations, or other foundational requirements wherein the characterization of classroom learning activities are essential.

Though the participating teachers' self-reports of SBI was found to be related significantly to that which was reported by their students, it is important to recall that the participating teachers in this study were unaware of the true intent of the questions on the *Teacher Evaluation Form.* It is unknown if teachers who are aware of the true intent of the questions would provide feedback that would accurately portray the level of SBI in their classrooms. It would seem that teachers under an evaluation process from an administrator would have motivation to characterize their classroom learning activities at a higher level of SBI from that which it may actually be if they knew what the questions were seeking out. However, as is the case with this study, teachers completing the *Teacher Evaluation Form* for purposes such as educational research who are unaware of the true intent of the questions would seem to provide accurate feedback on the level of SBI.

Study Limitations

This study utilized a causal-comparative research design. A causal-comparative design was employed because it tries to discover possible causes between an independent variable and a dependent variable wherein the independent variable cannot be controlled by the researcher (Chen & Popovich, 2002). Causal-comparative research has some limitations. Such a design is

non-experimental making conclusions about cause-and-effect relationships unjustified. However, conclusions of causal-comparative research can hint towards possible cause-and-effect relationships that may exist. Repetitive causal-comparative research with recurring results provide for a greater foundation to make assertions of cause-and-effect relationships (Gall et al. 2005). Bacon (1999) suggested that additional replicative research be conducted on teachers' use of SBI. This study replicated a portion of the research conducted by Bacon strengthening the cause-and-effect relationships suggested by both Bacon and those posed in this study regarding classroom practices and climate as perceived by students. Bacon also made an appeal for research that would include a way to validate teachers' use of SBI practices in the classroom which is what this study entailed as part of a triangulation effort to establish actual teachers' level at which they use SBI practices in their classrooms.

External validity is another limitation of this causal-comparative research. The external validity was compromised by using a nonequivalent, non-randomly selected sample. While the sample does represent a portion of the larger population, demographic data shows that the sample population was most representative of white suburban America in a single geographic location. The attitude of teachers towards the affective domain in other parts of the country and the world may differ and populations of schools located in inner cities or more rural populations may not be represented in this research.

This study used a nonequivalent groups design, meaning that participants were not randomly assigned to groups. While both the high and low level SBI groups contained 20 participants each, those participants could have been influenced by a number of nuisance factors that could have played a role in a causal relationship that this study tries to discover. Nuisance or extraneous variables can disrupt a study by providing an alternative explanation or possible

cause to the relationship in the variables other than that which is being investigated (Gall et al., 2005). Bicak (2003) matched groups in his study based on subject taught, grade level taught, and gender in order to control for extraneous variables. Matching groups would have potentially and most likely lowered the sample size of this study by requiring those subjects with no match to be dismissed from the study (Breaugh & Arnold, 2007).

This research used the extreme groupings technique which "involves selecting the extremes of a score distribution on one variable" (Gall et al., 2007, p. 312). The 20 highest and 20 lowest levels of SBI were used in this study. Those found to be in the middle range were eliminated from the data analysis. This created a situation in which "the two extremes are more likely to reveal differences on the other variable of interest" or a high level of SBI practices (Gall et al., 2007, p. 312). As suggested by Gall et al. (2007), using extreme groups can increase the power of the data set, but while doing so the effect size and practical significance are brought into question (Preacher et al., 2005). Effect size and practical significance were discussed in the summary of the findings along with their implications.

This study also utilized a correlational design to determine a relationship between the level of SBI as perceived by students and the level of SBI as self-reported by their teachers. A Spearman' Rank Correlation Coefficient (rho) statistic was used to determine the relationship. The Spearman's Rank Correlation Coefficient indicated if the students and teachers agreed on each other's view as to the level of SBI taking place in the classroom. Spearman's rho showed the degree of monotonic relationship between two variables set in ordinal fashion and measured the association between the two ranked variables.

A limitation in the correlational portion of this research is that the rankings were determined through an instrument of questions answered by students and teachers who may have

manipulated their answers either purposefully to try and make classroom learning activities seem other than what is really rendered on a day-to-day basis; or inadvertently by falsely remembering what actually took place in the classroom. Actual observance of teachers teaching concepts and behaviors related to the Affective domain did not take place. In addition, teachers were not evaluated on their knowledge of best practices and approaches for teaching social and emotional skills and awareness and use of validated curriculum or interventions for improving affective behaviors. Such an undertaking would have proven to require over 350 hours of observations in schools and classrooms and yet another instrument for teachers to complete beyond the two they completed for this study or would have required an increase in the amount of time to complete a longer instrument had questions been added to the existing instruments. This does not include the time teachers spent to report their classroom learning activities over a five day period. It was decided that observations and the additional time for teachers to answer supplementary questions would have been too much of an intrusion on the educational environment. Therefore, a choice was made to limit this threat by not relying on any one source for the level of SBI provided by each participating teacher. Data from teachers, students, and experts in the field of education was triangulated before determining a final ranking of high to low level of SBI.

Recommendations for Future Research

As discussed in the review of literature, children who do not learn appropriate ways to deal with their emotions can develop into young adults who become a burden to society rather than contributing members of it. Professions are asking that educators provide them with trained individuals prepared to meet the psychological challenges that arise in their respective professional fields. This study suggests that while teachers who are practicing effective cognitive building techniques, in the form of higher levels of SBI, have a significantly better

attitude towards the affective domain than their counterparts who practice SBI at a lower level; there is not a significant difference in the application of the affective domain between those teaching groups. The question of why there exists a disconnect between attitude and application of the affective domain is an important area for additional research. Further research should strive to qualitatively allow for teachers to discuss the reasons behind their lack of affective domain application in the practice of high levels of SBI.

Another possible area for future research lies in the development of affective domain practices for high school teachers and teacher professional development programs to incorporate into their classroom learning activities. Most affective programs incorporated into schools are geared toward elementary and middle school students but such programs are limited in their maturity appropriateness at the high school level. As De Souza (2004) who, after studying the lesson plans of two teachers in training who were teaching students approximately 15 years old in age, suggests; "there is a real need for professional development programs for teachers where they are offered appropriate [affective] learning models" (p. 37).

Related to professional teacher development is a need for research to be conducted at the highest levels of educational policy making. It is undetermined if state policy makers are cognizant of the need for student development in the affective domain. National and state policy makers have driven the continued development and widespread use of SBI by raising cognitive standards. Do these same policy makers have any intention of raising the affective standards for today's students?

A difficult aspect of this research was the process of finding school districts willing to allow the request of their teachers to be made to submit classroom learning activities over a five day period and to complete two 20 minute surveys. Even after a district allowed for the research

to take place, there was further difficulty in finding teachers willing to volunteer to participate in the study. Teachers seemed to be under a considerable amount of stress to meet the demands of new state mandated evaluations being adopted by their district. Future research may examine a comparison in the amount of stress teachers of high SBI experience in relation to that which is experienced by teachers of low SBI.

Perhaps research in the future that is less intrusive on teachers' time will be more welcomed by school districts and acceptable to teachers' time availability. This study indicates a significant relationship between student perceptions of SBI practices in high school classrooms and the level of SBI as self-reported by their teachers. Könings et al.'s (2011) study set out to investigate the extent to which students' perceptions of lessons match with their preferences about different aspects of contemporary education. Those results indicated that the perceptions of students about what takes place in the classroom can be used and are of great influence in determining what can be done to improve lessons. Both the Könings et al. (2011) study and this study support future research in many areas of education where a need to rely only upon the use of student perceptions to determine what takes place in the classroom is warranted rather than asking teachers to give up a significant portion of their valuable time.

Future research could also look at the correspondence between teachers' reported level of Affective domain instruction and students' rated social or emotional skills as another indicator for comparison. It is comprehensible that as high or better affective-based instruction takes place, students might have more positively rated social or emotional competence than students in low SBI classrooms. A part of this future research could analyze what explicit teaching strategies are teachers employing, what skills or concepts are teachers actually teaching in the

classroom, and what differences in social or emotional skills exist between students of high versus low SBI teachers.

Conclusion

Federal, state, and local school districts have driven educational reform in an attempt to raise academic achievement for all students. Since the passage of the No Child Left Behind Act schools, administrators, and teachers have attempted to meet the stringent requirements of Adequate Yearly Progress for students' cognitive achievement (McColskey & McMunn, 2000). The No Child Left Behind Act necessitates that educators choose scientifically based research programs and practices for use in their classrooms (Beghetto, 2003). Race to the Top and Common Core State Standards continue the push for higher cognitive development in children from all backgrounds. While teachers are successfully responding to the cognitive needs of students through the use of SBI, they must attempt to address the affective needs of students as well.

The purpose of this causal-comparative research was to address the question of whether teachers who use a high level of standards-based instruction practices neglect the application of the affective domain in their classrooms. The study compared the attitudes towards the affective domain of teachers who utilize a high level of SBI practices in their classrooms with teachers who utilize a low level of SBI practices in their classrooms. The study also compared the application of the affective domain of these two teacher groups. The results indicated that while a statistically significant difference in the attitude towards the affective domain in teachers who teach at a high level of SBI compared to teachers who teach at a low level of SBI exists, the difference in the application of the affective domain between these two groups was found to be statistically insignificant. Also statistically insignificant were differences in grade level and

years of experience between high and low levels of SBI. Lending to the plausibility for future research to be conducted based solely on student perceptions of what takes place in the classroom was a statistically significant comparison between student perceptions and that which is self-reported by their teachers.

Other recommendations for future research include a call for the development of affective domain practices for high school teachers and teacher professional development programs to incorporate the affective domain into their lesson plans. This development could be driven by research to be conducted at the highest levels of educational policy making. Additional research opportunities of a qualitative nature should address the question of why there exists a disconnect between teacher attitude and the application of the affective domain between teachers who teach at a high level of SBI compared to teachers who teach at a low level of SBI.

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APPENDICES

Appendix A: Permission to Use the Teacher Assessment Form of SBI

To: CThompson1@uwf.edu; Saturday; July 21, 2012; 2:38 pm

University of West Florida,

From: WRumbaugh@Auburn.wednet.edu;

Dr. Thompson,

My name is Wayne Rumbaugh and I am a doctoral student at Liberty University in Lynchburg, Virginia working on my dissertation proposal. The topic of my dissertation is the use of the affective domain in standards-based instruction compared to non-standards-based instruction. Currently I am trying to find a quality tool that identifies the degree of SBI implementation by teachers (high level of SBI practices vs. low level of SBI practices). I recently read your article titled *Preparation, practice, and performance: An empirical examination of the impact of standards-based instruction on secondary students' math and science achievement* (2009) and I am interested in the instruments that you used for assessing teachers' classroom instructional practices; specifically the Teacher Assessment Form and the Classroom Observation Form.

I am writing to ask your permission for the use of those two instruments. Of course, you will receive full credit and if you'd like, I will share the results of my research with you as well.

I appreciate your time and consideration,

Sincerely,

Wayne D. Rumbaugh

Liberty University

RE: Permission to Use Instrument Saturday, July 28, 2012; 1:28 pm

To: WRumbaugh@Auburn.wednet.edu;

From: CThompson1@uwf.edu; University of West Florida

Hello Wayne,

Please forgive the late reply to your message. I have been traveling a great deal this summer and have been behind in email.

This message is will serve as documentation for my approval and permission for you to use the instruments from the study you have cited: *Preparation, practice, and performance: An empirical examination of the impact of standards-based instruction on secondary students' math and science achievement* (2009).

I would be interested in receiving a short message concerning the results of your study upon completion.

Thank you for your request and best of luck as you move forward in your dissertation journey.

Carla

Appendix B: Permission to Use and Access to the *CReaTE* Excellence Rubric Matrix for Evaluation of Classroom Learning Activities

The CReaTE Excellence Rubric Matrix is located at: http://create-excellence.com

To: marge.maxwell@wku.edu; Saturday, February 1, 2014

rebecca.stobaugh@wku.edu;

janet.tassell@wku.edu;

From: WDRumbaugh@Liberty.edu; Liberty University

Professors Maxwell, Stobaugh, and Tassell,

I am a doctoral student at Liberty University located in Lynchburg, Virginia working on my dissertation. The topic of my dissertation is Teachers who teach at a High Level of Standards-based Instruction and their Attitude Toward the Affective Domain.

In my research I came across an article you wrote titled: *Analyzing HEAT of Lesson Plans in Pre-Service and Advanced Teacher Education* that appeared in the *Journal of the Research Center for Educational Technology* in the May 9, 2011 issue. In that article, you introduce an instrument to measure the level of HEAT/CReaTE integration into teacher's lesson plans. I am contacting you to ask your permission to use this instrument in my dissertation research as one of three means to determine teachers level of standards-based instruction (the characteristics of standards-based instruction I have defined in my dissertation background and theoretical framework are nearly identical to that used in the HEAT/CReaTE analysis tool) as a way to triangulate my data.

I do not intend to use the HEAT/CReaTE analysis tool beyond the needs of my dissertation, nor do I intend to profit in any way from its use other than the completion of my research for the purpose of completing my dissertation. Of course, you will receive full credit in my dissertation for producing the instrument and I would be more than happy to share the results of my research with you at the completion of my dissertation if you are interested. If you have any questions prior to granting your permission I would be happy to answer them.

Thank you for your time and consideration,

Wayne Rumbaugh

Liberty University

To: WDRumbaugh@Liberty.edu; Liberty University Sunday, February 2, 2014

From: marge.maxwell@wku.edu;

RE: Permission for use of HEAT/CReaTE Lesson Plan Analysis Tool

Hi, Wayne, you are welcome to use our instrument. You can find our more updated information and instrument on our website at http://create-excellence.com. We are about 80% finished writing a book about the instrument that will have many teacher tips and sample lessons or projects. Let me know if you have further questions. We will be happy to assist you!

Marge Maxwell, Ph.D.

1906 College Heights Blvd. #61030

Bowling Green, KY 42101

Ph: 270-745-2435

Fax: 270-745-6435

Table B1

Teacher Rankings on Evaluations of Classroom Learning Activities Using the CReaTE Matrix

Participating Teacher	Expert #1 Ranking	Expert #2 Ranking	Expert #3 Ranking
1	47	50	52.5
2	28	22.5	20.5
3	29.5	31.5	31
4	11.5	13.5	20.5
5	47	46	44
6	1.5	3	2
7	11.5	8	7
8	67	66.5	56.5
9	35.5	31.5	44
10	56.5	54	60
11	64	11	60
12	31	37	33.5
13	1.5	1	2
14	66	63	60
15	65	56.5	64.5
16	61.5	60	64.5
17	35.5	30	20.5
18	47	35	20.5
19	35.5	41	31
20	56.5	50	52.5
21	26.5	17	20.5
22	47	50	44
23	11.5	6	20.5
24	24.5	27	31
25	56.5	54	44
26	23	27	20.5
27	47	44.5	44
28	20.5	27	20.5
29	11.5	39	7
30	35.5	42	33.5
31	47	39	44
32	20.5	22.5	20.5
33	39	43	44
34	61.5	63	64.5
35	3.5	3	2
36	47	47	52.5

37	20.5	20.5	20.5
38	11.5	13.5	20.5
39	11.5	3	20.5
40	40	39	37
41	56.5	63	60
42	47	44.5	44
43	56.5	60	56.5
44	3.5	6	5
45	56.5	24	44
46	47	58	55
47	20.5	20.5	20.5
48	63	66.5	64.5
49	41	54	44
50	11.5	13.5	20.5
51	11.5	10	11
52	11.5	60	60
53	47	33	44
54	24.5	35	20.5
55	47	48	52.5
56	32	35	36
57	11.5	9	7
58	60	65	67
59	11.5	18	9
60	35.5	27	20.5
61	26.5	27	44
62	11.5	13.5	4
63	29.5	16	20.5
64	11.5	19	20.5
65	11.5	6	10
66	53	56.5	44
67	35.5	52	35

Appendix C: Permission for Use of the Student Confirmation of SBI Practices Assessment

To: MCMHens@aol.com; Cheryl Hensley Friday, July 20, 2012; 7:02 pm

From: WDRumbaugh@Liberty.edu; Liberty University

Hi,

My name is Wayne Rumbaugh and I am a doctoral student at Liberty University in Lynchburg, VA. I am working on my doctoral dissertation and I am trying to get in contact with Dr. Marc Bacon who completed his doctorate degree at the University of Denver. I would like to ask his permission to use an instrument that he developed while completing his dissertation research. While doing a "Google" search I somehow came across your resume which lists Dr. Marc Bacon as a reference. At the time of the resume he was the principal at Falcon Bluffs Middle School but it appears from the school's website that he is no longer with that school at that position. If you have any information that you can give me on how I might be able to contact him I would greatly appreciate it. Or if you don't feel comfortable forwarding that information to me, if you'd like to forward this email to him so that he can contact me directly, that would be appreciated also.

Thank you for your time and assistance,

Sincerely,

Wayne Rumbaugh

Liberty University

To: WDRumbaugh@Liberty.edu; Liberty University Friday, July 20, 2012; 9:46 pm

From: MCMHens@aol.com; Cheryl Hensley

Hi Wayne

I will forward your email to him.

Cheryl

To: WDRumbaugh@Liberty.edu; Liberty University Friday, August 3, 2012; 3:29 pm

From: MCWBacon@Comcast.net; Dr. Marc Bacon; Ph.D.

I am granting my permission for you to use the survey I developed for my 1999 Ph.D. dissertation for the University of Denver. This permission extends only to the use of my survey as a data gathering tool for your own doctoral dissertation.

Marc W. Bacon, Ph.D.

Table C1

Descriptive Statistics for The Student Confirmation of SBI Practices Assessment

	Mean	Median	Mode	Standard Deviation
Scores for Participating Teachers	2.76	2.8	2.9	0.49

Note. The possible range of scores was from 0 to 4 reflecting the Likert-scale used for the assessment. The actual range of the scores was between 1.16 and 3.9.

Appendix D: Permission for Use of

The Teacher Attitudinal Assessment toward the Affective Domain

To: BayramBicak@yahoo.com; Saturday, July 28, 2012; 10:43 pm

Akdeniz University

From: WDRumbaugh@Liberty.edu; Liberty University

Dr. Bicak,

My name is Wayne Rumbaugh and I am a doctoral student at Liberty University in Lynchburg, Virginia, USA. I hope I have found the right person to send this email. I am looking for Dr. Bayram Bicak who received his doctorate degree from the University of Arizona. If this is you, I am writing to ask for your permission to use the instrument that you used in your dissertation research titled: *Affective Domain Applications in the Junior High Schools in Turkey* (2003). I am working on my dissertation proposal in which I hope to compare the affective domain applications of teachers who teach with a high level of standards-based instruction practices to those teachers who use a low level of standards-based instruction practices.

Of course you will receive full credit for granting permission for the use of the instrument and I would be happy to send you the results of my research as well.

Thank you for your time and consideration in this matter,

Sincerely,

Wayne Rumbaugh

Liberty University

RE: Permission to Use Instrument

To: WDRumbaugh@Liberty.edu; Liberty University Sunday, July 29, 2012; 2:28 pm

From: BayramBicak@yahoo.com; Akdeniz University

Dear Mr. Rumbaugh,

You can use my instrument to collect your data. If you share your findings with me, I will be glad.

Best wishes.

Yrd. Doç. Dr. Bayram Býçak

Akdeniz Üniversitesi
Eðitim Bilimleri Bölümü
Ölçme ve Deðerlendirme Ana Bilim Dalý

Assistant Professor
Akdeniz University
Faculty of Education
Department of Educational Sciences
Measurement and Evaluation in Education

Appendix E: Letter of Recruitment to Potential Teacher Participants

February 1, 2014

Dear Educator,

You are receiving this email with permission from the _____ School District for you and your students to be candidates for educational research. If you choose to participate in this research, you and your students will remain anonymous and the results of the study will not be specific to you or the school, but will be cumulative to all other teachers and students in the study. This research will include two classroom observations by a retired, volunteer teacher or administrator, not associated with your district or school, to analyze general student responses to instruction. No one from your school or your school district will have access to the observation results of your classroom.

From these observations, select groups of teachers and students will be chosen to continue in the study. These chosen groups of teachers will complete two relatively short online surveys to finish their portion of the research. In addition, the students of the selected groups of teachers will be asked to complete a survey taking approximately 20 minutes. The parents of the students will be asked for their permission for their son or daughter to participate before the survey is administered. Parents or students who choose not to participate will not be required to do so and will not be punished for choosing not to participate. You will not be responsible for administering the survey to your students. The student survey will be proctored by a contact person from your school. During this time you will be given the opportunity to complete the two teacher surveys mentioned previously.

This study has the potential to benefit the school district and individual students by leading to better instruction and increased student achievement. As an additional incentive to participate in this study, you will be entered into a drawing for a $100 gift card to a local teacher supply store for use at your discretion. If you choose to participate in this study, please reply to this email with “Yes. I’d like to participate in this study”, and further instructions will be sent to you shortly. If you would not like to participate, please reply with “No thank you” and you will be dropped from consideration without further contact.

Thank you for your time,

Appendix F: Student Assent/Parent Consent Form

STUDENT ASSENT/PARENT Consent Form

FOR PARTICIPATION IN EDUCATIONAL RESEARCH

Wayne D. Rumbaugh

Liberty University

School of Education

Your student has been invited to be in a research study to determine their teacher's level of standards-based instruction. Your student was selected as a possible participant because their teacher has agreed to participate in educational research. The Marysville School District has granted permission for you to be included in the study if you so choose. I ask that you read this form and ask any questions you may have before agreeing to be in the study.

This study is being conducted by Wayne D. Rumbaugh; School of Education; Liberty University.

Background Information: The purpose of this study is to determine whether or not teachers who use different styles of instruction; know the standards and how they are aligned to assignments; use scoring rubrics; allow for flexible use of time; re-teach lessons; and allow for students to work cooperatively in groups; (to varying degrees), address the way in which students learn to deal with things emotionally, such as attitudes, values, enthusiasms, appreciations, motivations, and feelings.

Procedures: If you agree to allow your student to participate in this study, I would ask him/her to do the following things: Participate in a 10-15 minute survey (with parent permission).

Risks and Benefits of being in the Study: Though every study has risks, the risks in this study are no more than that which you would encounter in everyday life. The benefits to participating

in the study are the potential for educators to provide better instruction and for students to enjoy greater academic achievement.

Compensation: You will not receive payment/compensation for participating in this study.

Confidentiality: The records of this study will be kept private. In any sort of report I might publish, I will not include any information that will make it possible to identify a subject. Research records will be stored securely and only researchers will have access to the records. All records stored on computer will be password protected. Hard copies of records will be kept locked in a file cabinet. Computer records will be deleted and hard copies of records will be shredded three years after the study is complete.

Voluntary Nature of the Study: Participation in this study is voluntary. Your decision whether or not to participate will not affect your or your student's current or future relations with Liberty University, the Marysville School District, MP/MG High School, your student's classroom, or their teacher. If you decide to allow your student to participate, they are free to not answer any question and can withdraw at any time without affecting those relationships.

Contacts and Questions: The researcher conducting this study is Wayne D. Rumbaugh. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact him at --- --- ---- or WDRumbaugh@Liberty.edu. Rollen C. Fowler is the research advisor and can be contacted at --- --- ---- or RCFowler@Liberty.edu.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher(s), **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd, Suite 1837, Lynchburg, VA 24502 or email at irb@liberty.edu.

You will be given a copy of this information to keep for your records upon request.

Statement of Consent:

I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

Student Signature: _____ Date: _____

Signature of parent or guardian: _____ Date: _____

Signature of Investigator:_____ Date: _____