

THE RELATIONSHIP OF MOTIVATIONAL VALUES OF MATH AND READING  
TEACHERS TO STUDENT TEST SCORE GAINS

by

DAVID ALLEN LOEWEN

B.A., Tabor College, 1978  
M.A., Mennonite Brethren Biblical Seminary, 1982  
M.A., Southwestern Oklahoma State University, 1987

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

Department of Curriculum and Instruction  
College of Education

KANSAS STATE UNIVERSITY  
Manhattan, Kansas

2013

## **Abstract**

This exploratory correlational study seeks to answer the question of whether a relationship exists between student average test score gains on state exams and teachers' rating of values on the Schwartz Values Survey. Eighty-seven randomly selected Kansas teachers of math and/or reading, grades four through eight, participated. Student test score gains were paired with teachers and averaged. The results of these backward stepwise entries of multiple regressions using SPSS software are reported. Significant relationships with large effect sizes are reported for teacher values and student test score gains in reading and math. Models of teacher values are found that account for thirty-two percent of the average student test score gains in reading and for forty-three percent of the average student test score gains in mathematics. The significant model of values with the greatest adjusted relationship with reading test score gains is described as the Relational Teacher Value Type. The valuing of True Friendship (close supportive friends) and the valuing of Sense of Belonging (feeling that others care about me) proved to be the most powerful indicators of student reading score gains within this type. The significant model of values with the greatest adjusted relationship with mathematics test score gains is described as the Well-Being Teacher Value Type. The valuing of Healthy (not being sick physically or mentally), the valuing of Reciprocation of Favors (avoidance of indebtedness), and Self Respect (belief in one's own worth) proved to be the most powerful indicators of student mathematics test score gains within this type. The significant value items within each of the above types' models are discussed regarding possible reasons for their relationships to student test score gains. A value that is found significant for both reading and mathematics teachers in accounting for student test score gains is Moderate (avoiding

extremes of feeling and action). Of the teachers in the study that taught mathematics and reading, their students' mathematics score gains did not correlate in a statistically significant way with their students' reading score gains, suggesting that a teacher's ability to teach math has little to do with a teacher's ability to teach reading.

THE RELATIONSHIP OF MOTIVATIONAL VALUES OF MATH AND READING  
TEACHERS TO STUDENT TEST SCORE GAINS

by

DAVID ALLEN LOEWEN

B.A., Tabor College, 1978  
M.A., Mennonite Brethren Biblical Seminary, 1982  
M.A., Southwestern Oklahoma State University, 1987

A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

Department of Curriculum and Instruction  
College of Education

KANSAS STATE UNIVERSITY  
Manhattan, Kansas

2013

Approved by:

Major Professor  
Dr. Michael F. Perl

# **Copyright**

DAVID ALLEN LOEWEN

2013

## **Abstract**

This exploratory correlational study seeks to answer the question of whether a relationship exists between student average test score gains on state exams and teachers' rating of values on the Schwartz Values Survey. Eighty-seven randomly selected Kansas teachers of math and/or reading, grades four through eight, participated. Student test score gains were paired with teachers and averaged. The results of these backward stepwise entries of multiple regressions using SPSS software are reported. Significant relationships with large effect sizes are reported for teacher values and student test score gains in reading and math. Models of teacher values are found that account for thirty-two percent of the average student test score gains in reading and for forty-three percent of the average student test score gains in mathematics. The significant model of values with the greatest adjusted relationship with reading test score gains is described as the Relational Teacher Value Type. The valuing of True Friendship (close supportive friends) and the valuing of Sense of Belonging (feeling that others care about me) proved to be the most powerful indicators of student reading score gains within this type. The significant model of values with the greatest adjusted relationship with mathematics test score gains is described as the Well-Being Teacher Value Type. The valuing of Healthy (not being sick physically or mentally), the valuing of Reciprocation of Favors (avoidance of indebtedness), and Self Respect (belief in one's own worth) proved to be the most powerful indicators of student mathematics test score gains within this type. The significant value items within each of the above types' models are discussed regarding possible reasons for their relationships to student test score gains. A value that is found significant for both reading and mathematics teachers in accounting for student test score gains is Moderate (avoiding

extremes of feeling and action). Of the teachers in the study that taught mathematics and reading, their students' mathematics score gains did not correlate in a statistically significant way with their students' reading score gains, suggesting that a teacher's ability to teach math has little to do with a teacher's ability to teach reading.

## Table of Contents

List of Figures .....	xii
List of Tables .....	xiii
Acknowledgements .....	xiv
Chapter 1 - Introduction .....	1
Background of the Study .....	1
Problem Statement .....	3
Research Question .....	3
Null Hypotheses .....	4
Professional Significance of the Study .....	4
Overview of Proposed Methodology .....	5
Delimitations of the Study .....	6
Geographical Boundaries .....	6
Grade Level Boundaries .....	7
Subject Area Boundaries .....	7
Definitions .....	7
Chapter 2 - Review of the Literature .....	12
The Theoretical Base .....	12
Teacher Values Promoted by Various Philosophies of Education .....	16
Essentialism .....	17
Perennialism .....	18
Progressivism .....	19
Reconstructionism .....	21
Perspectival Reconstructionism .....	23
Linking Teacher Values to Student Outcomes .....	25
The Impact of the Teacher on Student Learning .....	25
The Impact of Value Types on Behavior .....	25
The Impact of Teacher Behavior on Student Learning .....	26
The Impact of Teacher Values on Student Values .....	29
The Impact of Values on Teaching and Student Learning .....	30



Extrapolations .....	31
Value Added Assessment .....	32
Positives and Negatives of Value-Added Assessments .....	33
Reliability.....	34
Validity .....	36
Schwartz Values Survey .....	38
Introduction.....	38
Reliability.....	38
Validity .....	38
Chapter 3 - The Methodology.....	40
The General Perspective .....	40
The Research Context.....	40
The Research Question .....	42
Null Hypotheses.....	42
The Research Participants.....	42
Instruments Used in Data Collection .....	43
Procedures Used .....	44
Data Analysis.....	46
Preliminary Data Preparation and Statistical Procedures .....	46
Statistical Tests for Possible Intervening Variables.....	47
Statistical Tests for Determining Relationships between Teacher Value Types and Average Student Test Score Gains .....	48
Statistical Tests for Determining Relationships between Specific Value Items and Their Combinations and Average Student Test Score Gains .....	48
Summary of Methodology .....	48
Chapter 4 - Results of the Study .....	50
Tests for Possible Intervening Variables .....	50
Test Regarding Relationship between Grade Level and Test Score Gains .....	51
Test Regarding Relationship between Subject Area and Test Score Gains.....	52
Test Regarding Relationship between Gender and Average Test Score Gains .....	53
Descriptive Charts and Statistics .....	54

Tests Regarding Relationship between Test Score Gains and Teacher Value Types .....	57
Test Regarding Relationship between Reading Test Score Gains and Value Types.....	58
Test Regarding Relationships between Mathematics Test Score Gains and Value Types...	63
Tests Regarding Relationship between Test Score Gains and Teacher Responses to Specific Value Items on the Schwartz Values Survey .....	69
Tests Regarding the Relationship between Student Reading Test Score Gains and Teachers' Responses to Specific Value Items on the Schwartz Value Survey .....	70
Tests Regarding the Relationship between Mathematics Test Score Gains and Specific Value Items on the Schwartz Values Survey .....	77
Chapter Summary .....	83
Chapter 5 - Summary and Discussion of the Results.....	86
The Research Question Restated .....	86
Important Methods Used .....	87
Summary of the Results .....	87
Regression Predicting Average Math Score Gains Using Average Reading Score Gains ...	88
Descriptive Statistics.....	88
Relationship of Value Types to Average Reading Score Gains .....	89
Relationship of Value Types to Average Mathematics Score Gains .....	89
Relationship of Value Items to Average Reading Score Gains .....	90
Relationship of Value Items to Average Mathematics Score Gains.....	91
Why Models of Individual Value Items More Clearly Correlate to Teaching than do Value Types.....	93
Discussion of the Results .....	94
Interpretation of Findings .....	94
A Teacher Value Item that Positively Predicts Student Test Score Gains in Both Reading and Mathematics. ....	103
Different Values for Success in Different Subject Areas .....	103
Teacher Values in the Context of Standards Based Education.....	106
Relationship of the Current Study to Philosophic Viewpoints .....	107
Summary of Findings.....	111
Suggestions for Additional Research.....	111

References.....	113
Appendix A - Value Types, Items and Needs.....	121
Appendix B - Philosophers' Value Types .....	123
Appendix C - McBer's Teacher Characteristics and Schwartz Value Types .....	124
Appendix D - Australian Core Values and Schwartz Value Types .....	126
Appendix E - Reading Assessment Scaling.....	127
Appendix F - Mathematics Assessment Scaling.....	137
Appendix G - Schwartz Values Survey .....	138
Appendix H - Cover Letter to Administrators .....	147
Appendix I - Cover Letter to Teachers .....	149
Appendix J - Brad Neuenswander Letter to Administrators.....	151
Appendix K - Permission to Use Schwartz's Materials.....	153

## List of Figures

Figure 2.1 Value structure circle from Schwartz (1992) and Roccas, Sagiv, Schwartz, and Knafo (2002) used by permission from Schwartz, January 2, 2013 (See Appendix K).....	15
Figure 2.2 Hypothesized Sinusoid Curve .....	32
Figure 5.1 Reading value items from model 5 on value structure circle from Schwartz (1992) and Roccas, Sagiv, Schwartz, and Knafo (2002) used by permission from Schwartz, January 2, 2013.....	104
Figure 5.2 Math value items from model one on value structure circle from Schwartz (1992) and Roccas, Sagiv, Schwartz, and Knafo (2002) used by permission from Schwartz, January 2, 2013.....	105
Figure 5.3 Hypothesized sinusoid curve compared with the mean responses of the subjects....	108
Figure 5.4 Hypothesized sinusoid curve compared to reading betas on value types.....	109
Figure 5.5 Hypothesized sinusoid curve compared to math betas on value types.....	110
Figure A.1 Alignment of Value Types, Items and Needs.....	121
Figure B.1 Philosophers' Value Types Summary Chart.....	123
Figure C.1 Chart of McBer's Teacher Characteristics and Schwartz Value Types.....	124
Figure D.1 Australian Nine Core Values with Corresponding Schwartz Value Types.....	126
Figure E.1 Scaling Chart for Kansas Reading Assessments.....	127
Figure F.1 Scaling Chart for Kansas Mathematics Assessment .....	137
Figure K.1 Email Permission to Use Schwartz Values Survey .....	153
Figure K.2 Email Permission to Use Figure 2.1 .....	154

## List of Tables

Table 4.1 Regression Results for Predicting Test Gains Using Grade Level (N=87) .....	52
Table 4.2 Regression Results for Predicting Math Gains Using Reading Gains.....	53
Table 4.3 Descriptive Statistics for Reading and Math Teachers .....	55
Table 4.4 Regression Results for Predicting Reading Gains Using Values Type Responses .....	59
Table 4.5 Regression Results for Predicting Math Gains Using Values Type Responses .....	64
Table 4.6 Regression Results for Predicting Reading Gains Using Value Items .....	72
Table 4.7 Regression Results for Predicting Math Gains Using Value Items .....	79

## **Acknowledgements**

I wish to thank the many people that made this dissertation possible. Dr. Michael Perl has been enormously patient with me while data gathering became a game of hurry up and wait. Thanks Dr. Perl for spurring me on to make the extra phone calls, the suggestions concerning resources and helps, for pushing me to do revisions and for making me think more deeply about the results of this study. I thank Dr. Aaron Carlstrom who began on my committee but couldn't finish due to a move to Milwaukee. Dr. Carlstrom's help in leading me to truly invaluable resources has made this project possible. I thank Dr. Kay Ann Taylor for reminding me about the difference between learning theories and philosophies of education. Other committee members that I wish to recognize are Dr. Paul Burden, Dr. Karen Myers-Bowman and Dr. Sheryl Hodge. Thanks Dr. Hodge for being willing to step in and fill the spot on the committee that Dr. Carlstrom left.

I would like to thank Dr. Shalom Schwartz for being willing to share his survey and for taking an interest in this work. I wish to thank Michael Wallis at the state department for tolerating my contacts and phone calls as I pushed to get valuable test score data. I wish to thank the Deputy Commissioner of Education, Brad Neuenswander, who sent a letter to administrators in Kansas which made it possible for student test scores to be matched to the teachers in the study. I also wish to thank Dr. Tom Foster, chair of the Kansas State Department of Education Data Review Board, who encouraged my idea and believed in its worth.

I wish to thank the 182 teachers in the state of Kansas who took some time out of their busy lives to fill out the Schwartz Value Survey. I wish also to thank the many administrators who were willing to cooperate with this research.

I thank Dr. Brad Penn who took time to proof many of the pages in this document. I acknowledge Tena Loewen for help with data entry, stuffing envelopes and technology assistance. I also wish to thank David E. Loewen who served with technological advice. Thanks Joanne Loewen, for stuffing envelopes and for continuous support. Most of all, I thank the One who made it all possible and for the answers to my many prayers in this process.

# Chapter 1 - Introduction

This dissertation was an effort to determine if a relationship exists between basic human values and teacher effectiveness. The study was based on data collected from state assessments of grades four through eight students and their teachers' results on the Schwartz Value Survey. This first chapter presents the background of the study, discussion of the problem statement, the professional significance of the study, delimitations, and definitions.

## Background of the Study

Prior to the mid-1980s the emphasis on values in education was on teaching them to the student (Titus, 1994) and on developing a scientific framework for doing so (Maslow, 1959; Krathwohl, Bloom, & Masia, 1964). Also during this time Rokeach (1973) was examining the nature of human values.

After A Nation at Risk was published in 1983 the attention in education had clearly turned away from values toward competition in the world marketplace. "Many educators see the publication of the now-famous report *A Nation at Risk* (National Commission on Excellence in Education, 1983) as the initiating event of the modern standards movement" (McRel, n.d.). With the standards movement, the focus on education became clearly focused on content and performance standards.

In an odd sort of way A Nation at Risk (National Commission on Excellence in Education, 1983) gave rise to a new interest in values education. It was because of the standards movement, which came as a response to A Nation at Risk, that standards have been developed not only for K-12 education but also for teacher education programs. Since the early 90s a focus has been placed on pre-service educators. The Council of Chief State School Officers (2010), in



its draft standards by the Interstate New Teacher Assessment and Support Consortium and in the new proposed draft for public comment by the Interstate Teacher Assessment and Support Consortium, dispositions were included, which clearly implicated teacher values under each of its ten principles or standards. The National Council for the Accreditation of Teacher Education (NCATE), required that the teacher education unit, “systematically assess the development of appropriate professional dispositions by candidates” (2008, p. 22). In order to meet accreditation requirements, teacher education institutions were to teach and assess dispositions which include values.

Though the standards movement has been concerned about teacher values and other dispositions, its primary concern was with student performance in regard to knowledge and skills. Since the passage of the Elementary and Secondary Education Act (No Child Left Behind Act) (U.S. Department of Education, 2001) knowledge and skills have been measured by student scores on state assessments. Teachers and school districts have now been held accountable for student performance on these tests. This general climate of measuring teacher effectiveness could be typified by this quote from an E-School News article entitled “Gates Foundation: Teachers Trump Class Size” (2009):

The Bill and Melinda Gates Foundation spent billions of dollars exploring the idea that smaller high schools might result in higher graduation rates and better test scores. Instead, it found the key to better education is not necessarily smaller schools but more effective teachers. The above quote clearly implied that the measure of effectiveness in teaching was the production of “higher graduation rates and better test scores.”

In a recent government initiative, Race to the Top, the application of the Phase #1 winner for government funds, Delaware,(State of Delaware, 2010) outlined its efforts to insure quality

educators in the classrooms. Five different criteria were applied to determine teacher effectiveness: 1) Planning and preparation, 2) Classroom environment, 3) Instruction, 4) Professional responsibilities and 5) Student improvement. Student improvement was the one factor that was given the power to trump the other four in the measure of teacher effectiveness. Unless a teacher was able to be effective in producing student growth, as measured by a series of three tests administered during the year, the teacher was not be given an effective rating. If the teacher was measured as effective, as shown on the tests, in producing student growth, the teacher will not be given anything less than an effective rating (State of Delaware, 2010).

In this climate of measuring teacher effectiveness by student achievement on test scores other voices have been expressed. People like Nel Noddings (2005) presented a challenge to build schools and curricula around themes of care and Ron Miller (n.d.) shared his concern about holistic education. These voices were crying out for a values base to education, an evaluation of teachers based primarily on other things than test scores, and were concerned more with the education of the whole child and with a broader focus on developing decent and caring members of society.

It has been with this background of standards, which included pre-service educator dispositions, and the measurement of teacher effectiveness by state assessments that this dissertation was written.

#### Problem Statement

#### *Research Question*

Is there a significant relationship between teacher held basic motivational values as measured by the Schwartz Value Survey, and student gains on state assessments?

### *Null Hypotheses*

There is no significant relationship between teacher held basic value scores as measured by the Schwartz Value Survey, and student gains on state assessments.

There is no significant relationship between various combinations of teacher held motivational values scores as measured by the Schwartz Value Survey, and student gains on state assessments.

### Professional Significance of the Study

In this section two reasons are given as to why this study had significance to the educational community at large and three reasons as to why this study has professional significance for teacher education programs.

First, different educational philosophers have promoted different values for teachers. If it should hold that a certain value has risen to the top in relationship to producing greater student learning this study would then tend to serve as support for particular schools of educational philosophy that have held such values.

Second, for the larger educational community, according to Pajares (1992) teacher beliefs or their interrelationships (of which he believes teacher values to be a “substructure” [p. 318]) have not been tested in their relationship to student outcomes. In the literature search, nothing was found that attempted to correlate particular teacher values and student outcomes from Pajares’ writing to the present.

Concerning teacher education programs, according to Pajares (1992), pre-service educator values were often deeply held prior to their entrance into education programs and required concerted effort and time to alter significantly. Lappan et al. (1988) believe that interventions of at least two years were necessary to change teacher beliefs and Bai and Ertmer

(2008) suggest that changes in pre-service teacher beliefs may require long-term efforts throughout the entire teacher education program. Since pre-service educators often have come into teacher education programs with deeply held values, and since a significant amount of time and effort has been required to alter those values, it would make sense that teacher education programs focus on values that are positively related to student learning. If no such relationship is found to exist it would also make sense that teacher education programs not waste time and energy with teaching values but instead focus on effective teacher behaviors.

Also, a research basis for a set of prescribed values could add to pre-service educators' depth of reflection in the examination of their own values. Both Danielson (2007) and Yero (2002) have emphasized the importance of reflection for effective teaching. If indeed certain teacher values have been identified by this study as having a relationship to student learning they could be used as items for reflection to improve professional practice.

Lastly, Tatto and Coupland (2003) and Richardson (2003) have agreed that if programs seek to change pre-service educators' beliefs (of which values are a substructure) without a strong research base to give evidence that the beliefs being promoted do indeed improve student learning, then these types of changes present ethical problems.

#### Overview of Proposed Methodology

This section was written as a brief overview of the methodology for this study and has been discussed with more detail in chapter three. The quantitative research perspective was adopted for this study. The type of research conducted is correlational.

A sample of Kansas 4<sup>th</sup>-8<sup>th</sup> grade mathematics and reading teachers were the subjects of the study. Previous year scaled scores of the students on the state mathematics and reading assessments were paired with next year scaled scores to determine a numerical gain value that

students made in mathematics and reading tests scores under the instruction of each participating teacher. The mean gain of the class was then used as a value-added measure of a teacher's particular effectiveness.

The subjects participated further in the study by taking the Schwartz Value Survey (SVS) (See Appendix G). Scores on the basic human values scales were paired with the value-added measure of teacher effectiveness. Correlation coefficients were used to determine if correlations existed and also were used to determine the strengths of the correlations that exist. For those correlations that existed, a multiple regression analyses was performed to determine their nature. Results were displayed using charts, and diagrams. As possible confounding variables, effects of gender, subject area, and grade level were also tested.

#### Delimitations of the Study

The following boundaries of this study had the potential to impact the ability to generalize. Discussed were the researcher's rationale for setting geographic boundaries, grade level boundaries, and subject area boundaries. Following the rationale for these delimitations is a brief statement concerning how this may have impacted the ability to generalize.

#### *Geographical Boundaries*

This study was limited to the state of Kansas in order to remove unnecessary confounding variables. Since State assessments were used for the value-added assessment, it was more consistent for the scores from the same state's tests be used to do this assessment. Since values were found to be influenced by culture (Smith, Peterson, & Schwartz, 2002) and state standards which are measured on these assessments vary from state to state, it was thought that the values of an effective teacher may vary from state to state. It may have been possible that what was found to define an effective teacher in Kansas had some limitations concerning how the results

could then be applied to states with different cultures, different state standards, different state assessments, and different levels of coordination of state standards to their particular state assessments.

### *Grade Level Boundaries*

Grades four through eight were chosen because, unlike high school, state mathematics and reading assessments were given every year, which made it more likely that the value added to the student test scores were more directly attributed to the work of a particular teacher of mathematics or reading. If high school was to be chosen, it would allow for too many intervening variables to occur since tests have not been taken every year, and reading skills were to be learned from multiple teachers. Upper elementary and middle school were chosen over lower elementary because reading skills have been more similarly focused on comprehension rather than the decoding skills that have been used in the earlier grades. Though this removed some of the intervening variables that might be present at other grade levels, it may also have limited the ability to generalize the results regarding lower elementary or high school teachers.

### *Subject Area Boundaries*

Mathematics and reading were chosen as subject areas because they were the two areas assessed on Kansas State assessments and served as a source of data for a value-added assessment. Since the study was limited to reading and mathematics teachers, it may not be easily generalized to teachers of other content areas.

### Definitions

1.  $\alpha$  - the Greek letter alpha, representing the pre-determined level of statistical significance, normally set at .05 for social science and educational research.
2. Achievement – accomplishment, attainment, the arrival at what was aspired toward.

3. Achievement Value Type – a set of goals centrally motivated by personal success through demonstrating competence according to social standards (Schwartz, 2006, p. 1).
4. Adjusted R<sup>2</sup> - a statistic that theoretically represents the percentage of the dependent variable determined by the independent variable(s) that can be generalized from the sample to other populations.
5. B – a statistic that represents the amount of change in units of the dependent variable for every unit of change in the independent variable.
6. β - the Greek letter beta used for a statistic that represents the amount of change measured by standard deviations of the dependent variable for every standard deviation of change in the independent variable.
7. Beliefs – operational mental constructs based on evaluation and judgment and not on objective fact (Pajares, 1992, p. 313).
8. Behaviorism – a school of educational philosophy that emphasizes the importance of positive and negative reinforcements as the cause of learning.
9. Benevolence Value Type - a set of goals centrally motivated by preserving and enhancing the welfare of those with whom one is in frequent personal contact (Schwartz, 2006, p. 1).
10. Benevolent – characterized by acting with kindness or generosity toward others.
11. Conformity Value Type - a set of goals centrally motivated by restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms (Schwartz, 2006, p. 1).
12. Conservation Values – a broad range of transsituational goals characterized by the preservation of established ideas and practices.

13. Constructivism – a learning theory based on the concept that each individual builds meaning as they reflect on how prior knowledge is impacted by new knowledge.

14. Dispositions – values, beliefs and attitudes that give one a tendency to act in certain ways.

15. Essentialism – a philosophy of education which stresses a common core of knowledge as being of utmost importance for truly educated people to acquire.

16. Feminism – a philosophy that advocates for women to have rights, privileges and opportunities equal to those of men.

17. Hedonism Value Type - a set of goals centrally motivated by pleasure and sensuous gratification for oneself (Schwartz, 2006, p. 1).

18. Holistic educators – instructors who hold to a philosophy that emphasizes the development of all facets of the student.

19. Motivational Needs – action producing cravings, desires, or wants that are derived from perceived adequacy levels of essential physical, social or psychological sustenance.

20. Motivational Values – a subcategory of beliefs which are “transituational goals, varying in importance, that serve as guiding principles in the life of a person or a group” (Schwartz & Rubel, 2005, p. 1010).

21. Openness to change values - a broad range of transituational goals characterized by the willingness to accept new ideas and practices.

22. Perennialism - a philosophy of education which stresses a common core of knowledge obtained from great literary works of the past that all truly educated people should know.



23. Power Value Type – a set of goals centrally motivated by social status and prestige, control or dominance over people and resources (Schwartz, 2006, p. 1).

24. Pre-service educator – one who is enrolled in a program of study which leads to teacher licensure.

25. Progressivism – a philosophy of education that focuses on the inherent needs of the child and on the influences of social structures.

26. Perspectival Reconstructionism – a philosophy of education that focuses on a redesigning of formal education from a specific position (e.g. feminism, holistic education, etc.) in order to achieve pre-conceived and specific societal outcomes that the current framework of education is unable to adequately accomplish.

27. R – a statistic representing the effect size of the independent variable(s) on the dependent variable.

28. R<sup>2</sup> - a statistic representing the percentage of change in the dependent variable that can be accounted for by the change in the independent variable(s).

29. Reconstructionism – a philosophy of education that focuses on a redesigning of formal education in order to redesign society as a whole.

30. Security Value Type - a set of goals centrally motivated by safety, harmony, and stability of society, of relationships and of self (Schwartz 2006, p. 1).

31. Self-Direction Value Type - a set of goals centrally motivated by independent thought and action; choosing, creating, exploring (Schwartz, 2006, p. 1).

32. Self-enhancement values - a broad range of transsituational goals characterized by concerns that focus inwardly, upon one's own desires.

33. Self-transcendent values - a broad range of transituational goals characterized by concerns that focus outwardly, beyond one's own welfare.

34. Sinusoid curve – a curvilinear line of best fit described by the equation  $y = a \sin x$ .

35. State assessments – tests taken annually by U.S. school children, required by the Elementary and Secondary Education Act, as determined by the various state boards of education.

36. Stimulation Value Type – a set of goals centrally motivated by excitement, novelty, and challenges in life (Schwartz, 2006, p. 1).

37. Tradition Value Type - a set of goals centrally motivated by respect, commitment, and acceptance of the customs and ideas that established culture or religion provide the self (Schwartz, 2006, p. 1).

38. Transituational – spanning variation in locality, time and circumstance.

39. Universalism Value Type - a set of goals centrally motivated by understanding, appreciation, tolerance, and protection for the welfare of all people and for nature (Schwartz, 2006, p. 2).

40. Value-added assessment – appraisalment of performance based on the increase of worth produced toward a specified outcome.

41. Values – beliefs that focus on priority, importance or appraised worth that have become transituational goals.

## Chapter 2 - Review of the Literature

In this section, literature is reviewed which builds a theoretical base for the hypothesis that teacher held values do influence student outcomes. The theoretical base of the content and structures of human values is explained. The philosophical schools of thought that advocate various values for teachers are discussed. Linkages in research and theoretical literature that lead to the hypothesis that teacher values influence student outcomes are made. Finally a discussion is included concerning the use of a value-added method of assessment to determine teacher effect on student outcomes, as well as a discussion concerning the use of the Schwartz Value Survey to determine teacher value types.

### The Theoretical Base

The theoretical base for the content and structure of human values was built by Schwartz and Bilsky (1987), Schwartz and Bilsky (1990) and Schwartz (1992). Much of their work was built upon the work of Rokeach (1973), Rokeach (1979), Maslow (1959), and Maslow (1970).

In their first article, Schwartz and Bilsky (1987) test their theory that universal types of human values can be structured “on the basis of their similarities and differences” (p. 550), and that types of values can be predicted based on universal human requirements reflected in needs, social motives, institutional demands and functional requirements of social groups. Out of these requirements, Schwartz and Bilsky identified seven motivational domains for values: Enjoyment, Security, Achievement, Self-Direction, Restrictive-Conformity, Prosocial and Maturity. Four hypotheses were made and then tested using a survey made largely from items borrowed from Rokeach (1973). Two studies were performed using 455 Israeli first through ninth grade

teachers from urban schools and 331 German college students (155 of which were preparing to become teachers). Pearson correlation coefficients were used based on the value importance ratings served as the data matrix analyzed with the Guttman-Lingoes Smallest Space Analysis.

In their second article Schwartz and Bilsky (1990) added 479 first year Australian graduate students, a 1,409 representative sample of U.S. adults, 424 undergraduate students from Hong Kong, 441 undergraduate students from Spain and 184 adult residents of a small coastal village in Finland, and performed similar tests and interpretive analyses. Three items were added to the Rokeach Values Survey to check for the possibility of a Power domain in the Hong Kong sample bringing the number of motivational domains for values to eight. Schwartz and Bilsky (1990) found very similar results concerning the basic structure of the relationships of value domains as to what they found in 1987 in the resulting smallest space analysis maps.

In the third journal article Schwartz (1992) reported the development of a new tool called the Schwartz Value Survey (SVS) (see appendix G) and developed the theory of basic human values. In the series of studies represented in this article Schwartz answered questions concerning whether values form a universal set of types, whether a comprehensive set of value types can be identified, whether values have the same or similar meanings among the differing groups of people under study and if there are consistent conflicts and compatibilities among values.

In this series of studies Schwartz (1992) gave new labels. He re-labeled “value domains” as “value types”. In order to “sharpen the meanings of the types” (p.5) he modified the definitions and the contents of the enjoyment, maturity, prosocial and security domains. Schwartz maintained the power type that he tested in the previous study and attempted to add a spiritual value type. This brought the total number of value types to eleven.

The Schwartz Value Survey (SVS) became a modification of the old Rokeach Value Survey to which Schwartz (1992) added items to reflect power and spiritual value types. Another change to the Rokeach Value Survey was a change from a ranking of values to a numerical rating of values in the SVS.

To test his theory of values Schwartz (1992) drew samples from 20 different countries “on every inhabited continent, representing 13 different languages, and included adherents of eight major religions as well as atheists” (p. 18). “In each country, researchers were asked to collect data using the SVS from a sample of approximately 200 teachers in grades 4 to 10 in the type of school system that teaches the largest proportion of children”(p. 18). College students and other people from the general public were chosen as samples as well. A total of 9,140 subjects were sampled, of which 3,365 were teachers (pp. 25, 26).

As in the previous two articles (Schwartz & Bilsky, 1987, 1990), Schwartz (1992) applied Smallest Space Analysis of the data. As a result, each value type except Spiritual Values was defined in the analysis. The items representing Spiritual Values were not clearly bounded but were found spread among at least four of the other value types.

The results of Schwartz’ (1992) study regarding the structure and dynamic relationships between values can probably be most easily explained by figure 2.1, depicting the placement of value types and the four broader ranges of basic values produced from Schwartz’s smallest space analysis (Schwartz, 1992, pp. 24,45; Roccas, Sagiv, Schwartz, & Knafo, 2002, p. 791):

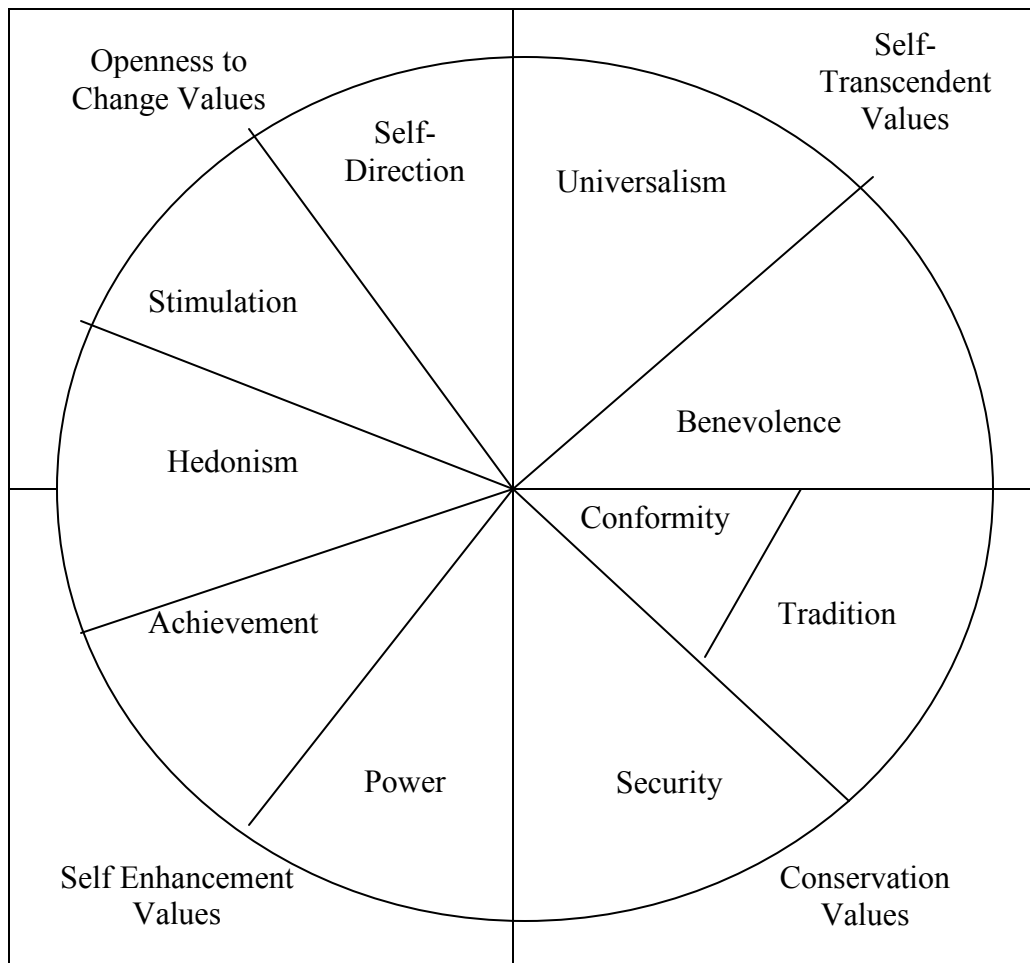


Figure 2.1 Value structure circle from Schwartz (1992) and Roccas, Sagiv, Schwartz, and Knafo (2002) used by permission from Schwartz, January 2, 2013 (See Appendix K).

Figure 2.1 shows the relationships between values (Schwartz, 1992). Values have been located opposite to one another in the circle represent conflicting values which are negatively correlated with one another. According to Schwartz, values located adjacent to one another represent values with compatible motivations which were positively correlated. For example, it is predictable that a person who rated the value type of benevolence high, would also rate universalism high and would rate the value type of achievement low. Schwartz found some Hedonism type values to be Self-Enhancement values and some to be Openness to Change

values. Though value types of conformity and tradition were both bounded by Security and Benevolence, they occupied separate space in Schwartz's smallest space analysis.

Rokeach (1973) claimed that values are relatively few in number but "attitudes number in the thousands" (p. 18). Rokeach argued that values are also limited by human needs which are relatively few in number. To this Maslow (1970) agreed. Therefore, when it came to motivational types of values, Schwartz (1992) and Schwartz and Bilsky (1987, 1990) attempted to create an exhaustive list. Schwartz (1992) proposed that his list of value types is "relatively comprehensive, encompassing virtually all the types of values to which individuals attribute at least moderate importance as criteria of evaluation" (p. 59). (See appendix A for a list of the value items with corresponding value types and motivational needs.)

In summary, the theory of basic human values has claimed that a comprehensive list of ten motivational value types exists. These types have been related to one another in a way that can best be represented in a circular fashion indicating their compatible and conflicting relationships. Individuals and cultures have tended to emphasize certain value types over others, and have created unique value patterns based on perceived needs (Schwartz 1992).

### Teacher Values Promoted by Various Philosophies of Education

This section sampled the philosophies of well-known educational philosophers in an attempt to discern the values that they have promoted for teachers. The following philosophies were examined: Essentialism as represented by Arthur Bestor (1985), TheodoreSizer (1984, 2004), and B.F. Skinner (1948), Perennialism as represented by Robert Hutchins (1964) and Mortimer Adler (1998), Progressivism as represented by John Dewey (1897, 1938), and Virginia Richardson (2003), Reconstructionism as represented by Paulo Freire (2000) and Theodore

Brameld (2000), and Perspectival Reconstructionism as represented by Ron Miller (2005), and Nel Noddings (2005). (A chart which represents the teacher values implied with each perspective was developed and can be found in appendix B.)

### *Essentialism*

As Bestor (1985) attacked the life adjustment emphasis of public education of the early 1950s he pulled out about every one of Schwartz's (1992) ten value types with the exception of Hedonism, as support for his arguments. Bestor most clearly exposed his values for education toward the end of the book in the following quote:

“We shall not produce them (referring to men and women with a general and liberal education) until we go back to first principles and create a college curriculum which, as a whole and in its interrelated parts, provides ordered and progressive training in the various forms of disciplined thought” (pg. 178).

Though Bestor advocated academic freedom for teachers, he clearly focused on achievement in content area and academic self-discipline as the most necessary qualities for a teacher to possess. The focus on achievement that Bestor advocated relied on external determination (standards), as to what that achievement will look like. This clearly implied an emphasis on Schwartz' (1992) Achievement value type. Bestor's emphasis on academic self-discipline pushed toward the self-restraint area of Schwartz' value wheel, implying conformity values.

In two of his books, Essentialist TheodoreSizer (1984, 2004) provided a somewhat different focus than Bestor (1985). Sizer (2004) clearly stated which values he believed effective teachers should hold. “The tone of the school should explicitly and self-consciously stress values



of unanxious expectation (“I won’t threaten you but I expect much of you”), of trust (until abused), and of decency (the values of fairness, generosity, and tolerance)” (p. 95). These are all values that line up with Schwartz’ value types of Benevolence and Universalism.

Skinner (1948) devised a utopian culture around the concept of operant conditioning. Skinner did not refer to teachers but rather relegated the teaching function to people he called trainers or controllers. Their role was to condition the residents of Waldon Two to conform to the mission of the controllers. The learning process was reduced to controlling positive and negative reinforcement. In his utopian culture, Skinner saw the head controller as a benevolent and powerful person who was interested in the security and well-being of the residents. However, this security and well-being was dependent on the residents’ conformity to the to the controller’s behavioral reinforcement. Thus we see that Schwartz’ (1992) basic values of Benevolence, Conformity, Security and Power were important values that Skinner placed on his trainers.

### *Perennialism*

In The University of Utopia Hutchins (1964) laid out an alternative focus for education in the United States and attempted to paint a picture of what that would look like. Hutchins stated that the strength of a democratic society “lies in the character of the citizens.” In saying this Hutchins defines “character” as “the moral, intellectual, aesthetic, and spiritual levels they have reached, their grasp of devotion to the hierarchy of values for which their country stands” (p. 14). Hutchins calls on Americans to rely on their “patriotism, moral fervor, and intellectual capacity,” which he believes “gives them the ability to meet any new situation with intelligence and decision” (p. 21). Of the three values mentioned in the above quote, Hutchins believed that the educational institution should focus in developing intellectual capacity. Hutchins did not differentiate between the values that teachers were to hold and those that were to be held by

society at large. He seemed to advocate for Schwartz' (1992) value types of Tradition, Benevolence, Universalism, Self-direction and Achievement. Within this broad range of values there are conflicting value types of Benevolence and Achievement and conflicting value types of Tradition and Self-Direction.

In his book, Adler (1998) focused on the values that he believed competent teachers should possess. Adler stated when writing about teachers, "To be truly educated is a state achieved by self-direction, usually long after schooling is completed, in the later years of life" (p. 58). Adler firmly believed that teachers need a "significantly strong motivation to carry on learning while engaged in teaching" (p. 59). The motivations for these values would definitely fall into Schwartz's (1992) value types of Achievement and Self Direction.

### *Progressivism*

Dewey (1938) wrote, "Hence the central problem of an education based on experience is to select the kind of present experiences that live fruitfully and creatively in subsequent experiences" (p. 28). The type of value needed in order to answer these types of problems implicates a teacher's need to be creative and self-directed which leads us directly to Schwartz' (1992) value type of self-direction. Dewey's (1897, 1938) emphases on democratic values in education continued to bring a strong focus toward values of individual freedom and choice. This clearly leads one to focus on self-direction in most of his writing.

However, when Dewey (1897) turned his attention to what he thought that teachers needed to value, there seemed to be a slight twist in emphasis. His attention focused on the social life of the child and the teacher's need to attend to it. Dewey (1897) said "I believe that only through the continual and sympathetic observation of childhood's interests can the adult enter into the child's life and see what it is ready for, and upon what material it could work most

readily and fruitfully.” This revealed a sense by Dewey that the teacher should be motivated by care and concern for the child. These teacher values can clearly be identified as representative of Schwartz’s (1992) Benevolence value type.

But this was not all. Dewey (1897) saw a bigger mission for the school than the educating of individuals. In the final article and at the very end of his pedagogical creed, Dewey called on the teacher to be the prophet who ushers in social progress and reform. This role of the teacher demands that teachers transcend the narrower focus of the classroom and the students to a larger cause in life described by Schwartz’s (1992) value type of Universalism.

Richardson (1997) represented a Constructivist approach to learning, though it is technically a learning theory it falls under the larger umbrella of Progressivism. Richardson charged that there are two different approaches to constructivist teaching. One she called “the psychological Piagetian approach to constructivism,” and the other she named “the situated social constructivist approach” (Richardson, 1997, p. 4). According to Richardson those from the Piaget school see the learning process to be more individualistic where the teacher “facilitates the environment in which students undergo a certain amount of cognitive dissonance” (p. 5) which would require students to reflect on their beliefs. To do this, the teacher would have to create an atmosphere which is non-threatening for the students (Richardson). “This approach to constructivism, then, focuses on the individual meaning making process” (pg. 7).

In order for a teacher to effectively teach a Piagetian approach to constructivism it would make sense that the teacher adopt values concerning the child’s curiosity and independent style of learning implicating the Schwartz’ (1992) motivational value type of Self-Direction.

According to the social constructivism approach the social is at least instrumental and at most “essential in the construction of knowledge” (Richardson, 1997, p.7). According to

Richardson the focus in this type of classroom would cast the teacher into more of an interactive role of facilitating relational learning experiences. This would implicate both Schwartz's (1992) value types of Universalism and Benevolence as important for the teacher to hold.

### *Reconstructionism*

Freire (2000) stated the importance of self-transcendent values of the Benevolence and the Universalism value types (Schwartz 1992) in his desire to humanize the dehumanized by means of honest dialogue. These values served as the means for what Freire considers the ultimate value type of self-determination which came through his writing in themes of freedom and creativity (Schwartz 1992). For example Freire states:

No matter where the oppressed are found, the act of love is commitment to their cause – the cause of liberation. And this commitment, because it is loving, is dialogical. As an act of bravery, love cannot be sentimental; as an act of freedom, it must not serve as a pretext for manipulation. It must generate other acts of freedom; otherwise it is not love. Only by abolishing the situation of the oppression is it possible to restore the love which that situation made impossible. If I do not love the world – if I do not love life – if I do not love people – I cannot enter into dialogue. (p. 89)

Mature love is one of the values found under the value type of Benevolence (Schwartz, 1992). Concern for the oppressed is a social justice value and is found under the value type of Universalism (Schwartz, 1992). Freedom is a value under the value type of Self-determination (Schwartz, 1992). Pedagogy of the Oppressed (Freire, 2000) was filled with discourse relating to these three value types.

In a more limited way Freire (2000) also wrote about the value of humility for the teacher (p. 90). Though this would seem to advocate for the value type of tradition (Schwartz 1992), his discussion of humility was very limited. Freire rather saw traditional education, which he refers to as “banking” pedagogy, as a tool of the oppressor and opposed to a pedagogy centered in dialogue (p. 72).

Brameld (2000) as indicated in the title of his book Education as Power was concerned with the value of power, however power as it was used in his book does not directly tie itself to power as a sought after value by teachers. Rather, Brameld saw education as a powerful force for the changing of society to become what he believed the ultimate goal of education should be, and that is “. . . the building of a world order of nations under the direction of the majority of peoples” (p. 46). Brameld saw education as a way to bring together peoples of various races, religions, and nationalities under a one world democratic system (p. 46). This view alluded to the value type of power as being necessary to bring about the goal value type of universalism.

Brameld (2000) saw educational philosophy as divided into two camps when it comes to values: Brameld saw the essentialists and perennialists as belonging to the value camp of transmission of tradition and the progressivists and reconstructionists as belonging to the value camp of modification and innovation (p. 62). Modification and innovation fall into the value type of self-direction. Other evidences of holding high the motivational value of self-direction lay in Brameld’s emphases on creativity (p. 91) and social-self-realization (p. 92). Under Brameld’s discussion on evolution he made the point that man is unique among the animals in that he can guide his own evolution, which again alluded to Schwartz’ value type of self-direction.

Brameld (2000) also alluded to the value type of universalism as he shared his concerns about social class and the control of a minority under a section entitled “Social Realism” (pp. 98-100).

Though Brameld (2000) discussed the need of the teacher to create an “atmosphere of mutual respect and integrity, of authenticity and honesty,” and the need to “feel continuously warm with them,” he saw this Benevolent value type as a means to creativity within the value type of self-direction (p. 102).

In conclusion Brameld more narrowly focused on the value types of self-direction and universalism than does Friere who more obviously included the value type of benevolence.

### *Perspectival Reconstructionism*

Miller (2005) clearly stated that values are inherent in holistic education, “. . . holistic educators are interested in cultivating spirituality, reverence for the natural environment, and a sense of social justice. They seek to inspire children’s creativity, imagination, compassion, self-knowledge, social skills and emotional health”(p. 1). Schwartz’ (1992) value types that were represented in this quote are Self-Direction, Universalism and Benevolence.

Noddings (2005) advocated for an educational system built around themes of care. In the system for which Noddings advocated, there were many motherly traits that she proposed for teachers to hold. This screams to the reader that the main teacher value type for teachers, according to Noddings, should be benevolence (Schwartz, 1992).

The research of Walls, Nardi, Von Minden, and Hoffman (2002, p. 45) confirmed Noddings view from the teachers’ perspective, “Caring about students was particularly prevalent in the descriptions of effective teachers. They were described as warm, friendly, and caring.”

In her book Noddings clearly revealed the values she promoted for education in the chapter 6-11 titles as she built her proposed school model around themes of care. The chapter six title, “Caring for Self” (p. 74), and chapter eleven title, “Caring for Ideas” (p. 150), implicated Schwartz’ value type of self-direction. The chapter seven title, “Caring in the Inner Circle” (p. 91), implicated Schwartz’ value type of benevolence. The chapters 8-10 titles, “Caring for Strangers and Distant Others” (p. 110), “Caring for Animals, Plants, and the Earth” (p. 126), and “Caring for the Human-Made World” (p. 139) implicated Schwartz’ value type of Universalism.

In summary, Schwartz’ (1992) compatible value types of Benevolence, Universalism and Self-Direction were well agreed upon as proposed motivations for teaching within the philosophical schools of Progressivism, Reconstructionism and at least two Perspectival Reconstructionists’ views. Motivational types that were proposed by Essentialists did not find total agreement within this school of thought being that Skinner supported value types of Power, Security, Conformity and the Conflicting value type of Benevolence, Bestor supported values of Achievement and Conformity and Sizer supported values of Benevolence and Universalism. The Perennialist camp held common values of Self-Determination and Achievement with Hutchins having supported Tradition, Benevolence and Universalism. According to Schwartz (1992), Benevolence and Universalism are conflicting value types with the value types of Power and Achievement. If one were to lump all of the educational philosophers together it would lead to the hypothesis that effective teachers hold strongly to compatible values of Benevolence, Universalism and Self-Direction while giving some emphasis to conflicting value types of Achievement, Power and Conformity. (See Summary Chart of Philosophers in Appendix B.)

## Linking Teacher Values to Student Outcomes

In this section the theoretical and research literature was reviewed which demonstrates linkages between teacher values and student performance. First, the link was established between the teacher and student learning. The following links were then explored: The link between teacher values and teacher behavior, the link between teacher behavior and student learning, the link between teacher values and student values, and the link between values, teaching and student learning.

### *The Impact of the Teacher on Student Learning*

The literature established that teacher effect could very well be the largest factor in student learning (Campbell, Kyriakides, Muijs, & Robinson, 2004; Darling-Hammond, 2000; Sanders & Rivers, 1996; Sanders & Rivers, 1999; Wenglinsky, 2002; Wright, Horn, & Sanders, 1997). In a report to the Council of Chief State School Officers Darling-Hammond and Ducommun (2007) wrote that “Every aspect of school reform ... depends on highly-skilled teachers” (p. 1). Sanders and Horn (1998) claimed that teacher effect determines student academic progress to a greater degree than race, socioeconomic level, class size, and classroom heterogeneity.

### *The Impact of Value Types on Behavior*

There was evidence in the literature that a correlation exists between value types and behavior. Bardi and Schwartz (2003) found that there is a significant relationship between college student behavior and value types. Bardi and Schwartz concluded that “values motivate behavior but that a relation between values and behaviors is partly obscured by normative pressures” (p. 1217).



Smith, Peterson, and Schwartz (2002) in a 47 nation study of mid-level managers found a connection between seeking guidance and value types as influenced by cultures.

Roccas, Sagiv, Schwartz, and Knafo (2002), used a sample of 246 students and with a five factor model, tested for the big five personality traits (Neuroticism, Openness to Experience, Extraversion, Agreeableness and Conscientiousness) and Schwartz's ten value types.

Correlations were found between value types and personality traits suggesting that "traits have stronger influence on behavior over which individuals have little cognitive control, values on behavior under more voluntary control" (p. 799).

In a study done by Feather and Rauter (2004), using regression analysis with work values and teacher behaviors on a sample of 154 school teachers from Victoria, Australia, they found that organizational citizenship behaviors (behaviors that help the organization but may not be directly or explicitly recognized in the organization's formal reward system) were impacted by the teachers' opportunity to satisfy work values. It would make sense that these types of behaviors (e.g. staying late to finish work, postponing days off to meet school needs, talking about work at lunch, and helping a co-worker who is having difficulty) on behalf of teachers would impact student outcomes.

### *The Impact of Teacher Behavior on Student Learning*

Lemov (2010) claimed to have found 49 specific techniques that work for teachers. Lemov's claim was that by performing these very well defined behaviors student academic progress will be increased. Lemov claimed that his methods are based on research. Lemov's research consisted of a compilation of field notes that he took on teachers whose students were experiencing a high level of success on test scores, while working in what he describes as the "toughest neighborhoods of our cities and towns" (p. 4). Though Lemov may have taken good

field notes, he did not clearly lay down his criteria of what a “great” teacher is. He does not report on the size of the sample and generally doesn’t report any observation protocol or explain how he categorized the data to come up with his “toolbox” of techniques. Though his book seems to be based on a qualitative approach it appears to lack the necessary rigor of proper research methodology.

Carter (2008) used a value-added measure to seek a correlation between teacher behaviors and student academic progress. In her study, Carter controlled for years of experience with a sample of 62 third through ninth grade teachers of mathematics, reading and language arts. The three teacher behaviors that were observed for were, teacher encourages a high level interaction, teacher follows appropriate lesson sequence and teacher assigns homework. No significant relationships were found between the three behaviors and the students’ academic progress. In reflecting on her research, Carter suggests that isolated behaviors may not correlate well with teacher effect on student learning, but that possibly a wider pattern of behaviors or grouping of behaviors may provide better correlation.

McBer (2000) in a report to the United Kingdom’s Department of Education and Employment claimed that classes of teacher behaviors, which he referred to as “professional characteristics” do impact student learning. McBer based his conclusions on research using a random sample of a broad range of teachers using a wide range of methodologies (classroom observations, in-depth interviews, questionnaires, focus groups, collection of personal and school data which included pupil progress data). McBer’s findings were that effective teachers used a broad range of teaching skills which they carefully matched to student needs; they created a positive classroom climate and displayed a set of professional characteristics. His “findings suggest that when taken together, teaching skills, professional characteristics and classroom

climate will predict over 30% of the variance in pupil progress” (p. 9). McBer listed a set of broad range behaviors that effective teachers exhibit: They “set high expectations for the pupils and communicate them directly to the pupils” (p. 11). They “are good at planning, setting a clear framework and objectives for each lesson” (p. 12). They “employ a variety of teaching strategies and techniques to engage pupils and keep them on task” (p. 13). They “have a clear strategy for pupil management” (p. 15). They “manage time and resources wisely” (p.16). They “employ a range of assessment methods and techniques to monitor pupils’ understanding of lessons and work” (p.16). Besides these broad range behaviors McBer found that teachers display a well identified set of professional characteristics which suggest ongoing behavior patterns. McBer included each of these professional characteristics in his “dictionary of characteristics” providing motivations behind each characteristic. (See Appendix C for alignment of McBer’s characteristics with Schwartz’s [1992] value types.)

Strahan (2008) reported on findings of a series of qualitative studies in which he was involved. His article reported a technique that effective teachers use to help students who are under-performing to gain academic momentum (part of which was gauged on their improvement on state tests). Building trusting relationships with students was determined to be the key that allowed the student the freedom to take the chances necessary to gain momentum. Strahan cited three specific teacher behaviors that effective teachers use to gain relational trust: 1) Discovery talk by the teacher with the student to understand the student’s personal life and to make sure that everything with the student is okay. 2) Delivering help for the student with personal problems and with academic problems that actually enabled the student to improve. 3) Friendly listening to discover students’ personal issues that impact the students’ classroom behaviors and

academic performance. The implication of Strahan's list of behaviors would clearly be supported by Schwartz' (1992) benevolence value type.

Marzano (1998) in his meta-analysis of research on education found an effect size for instructional techniques to be .65 across the knowledge domain and the three systems of cognitive, metacognitive and self. Marzano found that the effect size for the self system to be .92 and the effect size for the metacognitive system to be .75 suggesting that instructional behaviors that bolster students' ability to self-regulate their own learning and to strategize their own thinking to be highly effective. These systems fall in line with Schwartz' (1992) motivational value-type of self-determination.

### *The Impact of Teacher Values on Student Values*

“Debating whether or not teachers should teach values is the wrong question. Education is a values-infused enterprise (Narvaez & Lapsley, 2008, p. 156).” In their article Narvaez and Lapsley direct their discussion as to whether teachers should continue to impact student values with a hidden curriculum or whether moral values should become part of an intentional and deliberate task for which teachers prepare themselves.

In Australia, values education has been mandated by the state and intentional strategies for teaching values have been adopted (Lovat & Toomey, 2009). In their book, Lovat and Toomey presented six case studies in schools where values were intentionally taught, four in Australia, one in the United Kingdom and one in a charter school in the United States. In each of the six cases, all significant stakeholders (of which teachers were cited as the most important) chose to adopt the values that were taught. School procedures were analyzed and adopted that were consistent with the values being taught (in most cases this meant a change in classroom management procedures). The teachers' modeling of the values was viewed as absolutely

essential. It was agreed in all cases that the link between the stakeholders' own values and the students' values was the single most powerful link in the transmission of values. (Chapman, Cahill, & Holdsworth, 2009; Clement 2009; Lovat 2009; Macmullin & Scalfino, 2009; Hill & Vick, 2009; Netherwood, Buchanan, Palmer, Stocker, & Down, 2009; Hawkes, 2009; Shea & Murphy, 2009)

### *The Impact of Values on Teaching and Student Learning*

Campbell, Kyriakides, Muijs, and Robinson (2004) in their discussion of teacher effectiveness and values suggested that any model of teacher effectiveness should include an analysis of teacher values. Campbell et al. claimed that "There is a consensus in the classic sociology literature that the processes of education are suffused with values and moral purpose." (p. 453)

Krathwohl, Bloom, and Masia (1964) wrote clearly and extensively about the connection between the affective and cognitive domains, devoting a whole chapter to the relationship between the two. Since values are a part of the affective domain, according to Krathwohl, Bloom, and Masia, they too would be part of this connection.

The ability to organize and inter-relate values into systems must certainly call for the ability to 4.0 Analyze, as it is described in the cognitive domain, and the development of new values complexes also most likely involves the ability to 5.0 Synthesize. Further the ability to balance values against one another, which is implied by the very highest effect categories, implies the capability for 6.0 Evaluation as it is defined in the cognitive domain. (p. 51)

To sum up their chapter on the interrelationships between the two domains Krathwohl et al. stated, "This chapter really only scratches the surface of what is undoubtedly a very complex

relationship between objective and affective domains. We still have much to learn about it. But the fact should be clear that the two domains are tightly intertwined” (p. 62).

Toomey (2009) described the nature of the impact between student academic achievement and the learning of values as a “double helix effect”. Toomey writes:

In an environment where values like respect, tolerance, doing your best and others are constantly shaping classroom activity, and where the classroom activity is structured to consolidate the practice of values, quality teaching and learning come naturally. Children, adolescents and young adults alike all strive to do their best. Or ideally at least, they try to do their best. (p. 145)

Lovat and Toomey (2009) found this “double helix effect” to be in place in the six case studies that were performed. This study supported Australia’s national commitment to adopt and intentionally teach its nine core values. (See appendix D for the nine Australian core values, their definitions and the corresponding Schwartz (1992) value types.) Furthermore, Toomey (2009) claimed that giving values a more central role in education improves students’ “intellectual depth, communicative competence, capacities for reflection, self management and, most importantly, self knowledge.” (p. 141)

### *Extrapolations*

The literature seemed to indicate that teacher values have an impact on student learning, and that there may be several pathways by which this could occur. First, teacher values could impact teacher behaviors which in turn impacts student achievement. Second, teacher values could impact student values which in turn impacts student achievement. Lastly, teacher values could impact the classroom environment which would impact student achievement.

Schwartz (1992, pp 54-59) suggested that researchers should develop a model for developing hypotheses concerning value types using sinusoid curves. In figure 2.2 on page 40, the writer has developed this type of curve. From the literature, the following hypothesis concerning the content of effective teachers' values seems to emerge. According to this hypothesis, the more effective a teacher is, the closer their values will fit this value type pattern.

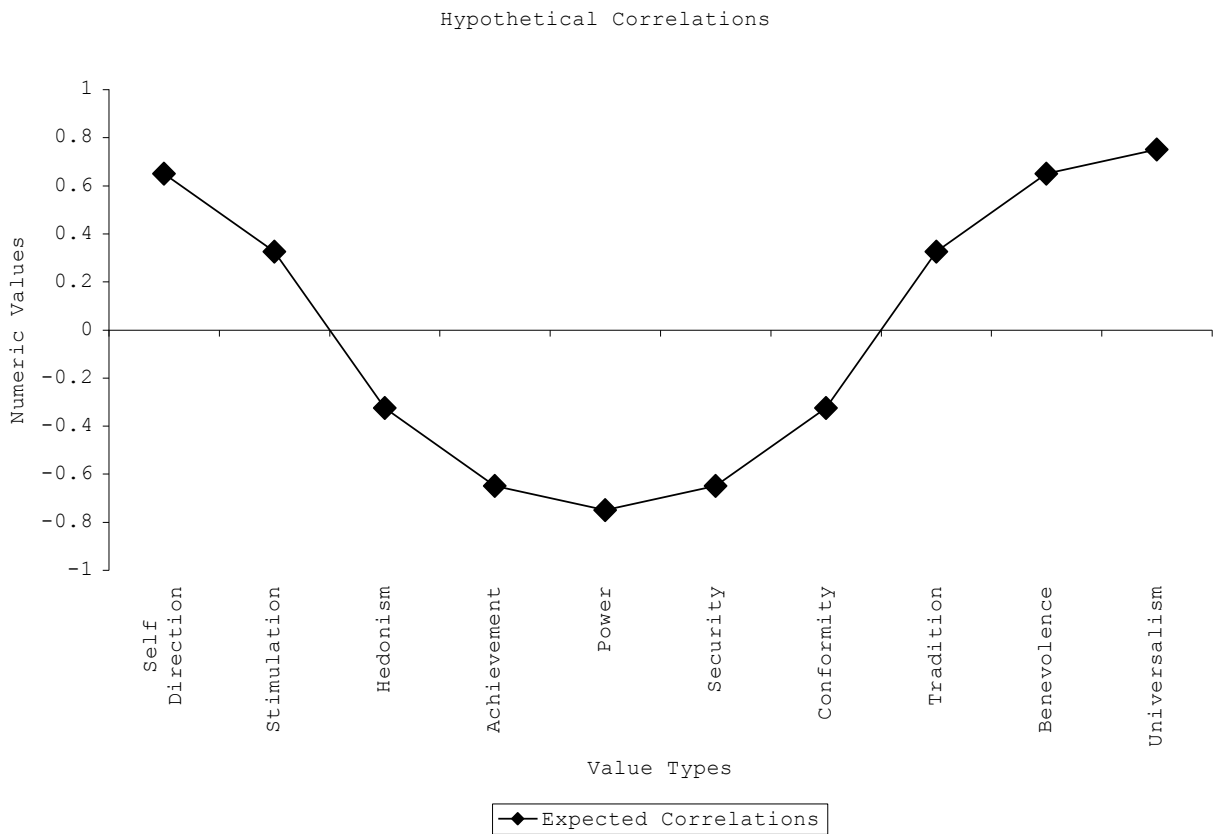


Figure 2.2 Hypothesized Sinusoid Curve

### Value Added Assessment

In this section the reliability and validity of using a value added assessment of student learning as an indication of teacher effectiveness is discussed. The literature concerning the positives and negatives of value-added assessment were first reviewed.

### *Positives and Negatives of Value-Added Assessments*

In agreement with Darling-Hammond and Ducommun (2007), in this study it was assumed that the student learning that takes place in class is what effective teaching is about. The real question of debate then was, “How is student learning best assessed?”

A value added measure of teacher effectiveness seeks to measure the effectiveness of a teacher by measuring the test score gains that the students have made under a specific teacher. Using a one-time test to measure teacher effect was considered inadequate, and, according to Braun, Chudowsky, and Koenig (2010), a single test gives only a snapshot of student performance which is then compared to an established target. However, value-added models measure the improvement, or student gains, that are made from one year to the next whether students have met or did not meet the established target. Sanders (2003) argued that value-added systems offer a more accurate system of assessing teachers than the meeting of adequate yearly progress targets because they take into account the academic growth of all levels of students not just those who could easily be pushed up in order to meet adequate yearly progress (AYP). Markley (n.d., p. 8) claimed that “Adequate measures of teacher effectiveness have been lacking. What evaluation methods exist are highly subjective and bear little connection to student achievement.” He went on to say that value-added models “offer the best hope for creating a truly useful evaluation measure.”

Many of the negatives that have been attached to these value-added systems are the same negatives that are made towards any system of teacher evaluation based on student tests. According to Braun, Chudowsky, and Koenig (2010) arguments against using tests as a measure of teacher effectiveness have been that: Tests are incomplete measures of student achievement, measurement error, non-random assignment of students and effects of more than one teacher



(pp.12,14). According to Braun et al.(2010) other problems that tests have created for value added measures include: The need for tests to use an interval scale if a regression model is employed. The need to be able to vertically link tests from one year to the next is required. Precision and stability problems come because the teacher has a relatively small number of students each year. Since more than one year of data is needed, missing data can be a problem. Braun et al. also listed the need for statistically complex models.

Viadero (2008) and Braun (2005) claimed that results of value-added assessments may be biased because students are, in many cases, not randomly assigned to teachers. In other words each teacher has not been dealt the same hand. Sanders and Horn (1994) claimed that these types of variables are blocked and that “each student serves as his or her own ‘control’ –or, in other words, each child can be thought of as a ‘blocking factor’” (p. 305) when it comes to variables that impact the students’ initial academic levels. Sanders and Horn (p. 305) claimed that three studies performed by Sanders indicate that these types of influences can be “filtered out, without having to have direct measures of all of the concomitant variables.” Sanders and Horn have indicated that effective teachers are teachers who have relatively consistent positive effects on student learning as indicated by the difference of pre-test and post-test measures regardless of the background of the students that they are assigned.

### *Reliability*

Sanders (2006) demonstrated how value-added measures vary in their stability based on the type of statistical model that is used. Sanders explored the following models: the class average score, the class average gain, ANOVA (analysis of variance), ANCOVA (analysis of covariance), ANCOVA using many previous scores as predictor variables, and the EVAAS (education value-added assessment system) univariate response model (URM) model (which is

essentially the same as the ANCOVA with multiple previous scores as predictors). Sanders demonstrated how the URM model is more reliable than the other models, regardless of the socio-economic status of the student populations.

Sanders (2003) claimed that for tests to have sufficient reliability for a value-added system they need to have 40+ test items. Sanders (p. 3) assert that “test scales must have sufficient stretch to measure the progress of both very low and very high achieving students.” According to Poggio, Yang, Irwin, Glasnapp, and Poggio (2007) the Kansas State assessments in reading and math for grades 3-8 have met the standards set forth by Sanders. These assessments from 2010 and 2011 had 58-86 test items on each assessment. Besides this, each score was reported as an adjusted percentage, which in reality is an equalizing score between test forms. According to Poggio et al. (2007) tests were vertically scaled between grade levels in five different categories ranging from “Academic Warning” to “Exemplary”. Within this scaling, spans of adjusted percentage scores were included within each category allowing for a more finely scaled comparison between scores at different grade levels. (See appendices E and F for scaling used in this study)

Poggio et al. (2007, p. 59) reported that score reliability for the Kansas assessments, using Cronbach alpha coefficients, range from .88 to .94 for all reading grade levels and range from .91 to .95 for all mathematics grade levels. Classification consistency and classification accuracy indices were used to accurately develop cut scores for each of the five classifications. Reported by Poggio et al. (p. 62) were that “For both mathematics and Reading, reliabilities of classification at a given cut point were generally high whereas probabilities of misclassifications were low.”

## *Validity*

It was found that, much of the concern surrounding value-added assessment as a measure of teacher effectiveness revolved around the use of the assessment. Questions concerning validity intensify when politicians and school boards have proposed using the assessment for determining teacher pay (McCaffrey, Han, & Lockwood, 2008; Viadero, 2008; Braun, Chudowsky, & Koenig, 2010). However, according to Braun et al. and Viadero value-added measures have been largely considered to be valid in their use as a research tool.

According to Sanders (2003, p. 2) in order for a value-added assessment system to be robust, “the data must come from tests that are highly correlated with curricular objectives.” The Kansas standards have been published for the public on the Kansas Education Resource Center (n.d.) (KERC) website and on the Kansas State Department of Education (n.d.) website. These websites have been available to teachers and the general public. On the KERK website the assessed indicators for each standard at each grade level in mathematics and reading have been marked with a solid triangle or square. The state assessments have been aligned with these indicators giving teachers guidance over which objectives to be taught in their lessons. This has given any teacher in the state of Kansas the necessary resources for the state assessments to correlate closely with the student learning that was expected. According to the Kansas State Department of Education (2010) reading assessment fact sheet, there have been four to six items per indicator on the reading assessments. The KSDE fact sheet on the mathematics assessment states that there are four to eight items per indicator on the mathematics assessments. This has substantially boosted criterion-related evidence of validity of the test scores to be used as measures of teacher effectiveness.

Poggio et al. (2007) reported on two evidences of validity sought in the Kansas assessments of reading and mathematics. Internal evidence of validity was sought through using full-information factor analysis and nonlinear factor analysis based on Item Response Theory models. Poggio et al. (p. 69) stated that for the mathematics assessments “average inter-item correlation ranges from .311 to .451, with an increasing trend toward upper grades.” Also stated concerning the mathematics assessments were that all distributions of inter-item correlations have positive kurtosis. For the state reading assessments Poggio et al. (p. 69) stated that “inter-item correlations range from .336 to .385” with most inter-item correlation distributions showing a negative skew, but smaller values of positive kurtosis than were present in the mathematics assessments.

In order to seek criterion-related evidence of validity Poggio et al. (2007) ran three studies. In a predictive validity study between formative and general assessments across all forms and grades of the mathematics assessments  $r$  values ranging between .71 and .87 were found. In the reading assessments  $r$  values ranging between .76 and .82 were found. In a “relationship of test scores across years given” study it was found that between years and between test modes  $r$  values between 0.70 and 0.80 were found. Additionally a study was performed that investigated the relationship between teacher ratings of students and student test performance. For reading  $r$  values of between 0.44 and 0.74 were found. For mathematics  $r$  values of between 0.44 and 0.80 were found.

Poggio et al. (2007, p. 81) conclude, “The results of these analyses provide evidence to support the validity of the 2006 Kansas Assessment scores.” These were the same versions of the tests used in this study.

## Schwartz Values Survey

### *Introduction*

In this section the reliability and validity of using the Schwartz value survey as a measure of teacher value types is discussed.

### *Reliability*

Spini (2003) compared the equivalence of Schwartz' 10 value types from the SVS across 21 countries. Spini's study demonstrated that it is possible for the SVS to indicate that the ten separate value types are reliable measures "across a large number of samples."

Lee and Soutar (2010) tested whether the SVS has true interval scales in its measurement of value types. Euclidean distance scales were used to measure the distances between the scale values of -1 and +7. It was found that the intervals on the low end of the scales were slightly larger than the intervals on the upper end of the scale. However, it was also found by Lee and Soutar (p. 81) that "little information is lost by using the SVS value-type scores in a correlational analysis, regardless of the lack of true interval scaling." Lee and Soutar's study suggested "that researchers can be confident using SVS value-type scores when examining structure issues and when estimating relationships between SVS value types and other constructs" (p. 83).

### *Validity*

According to the Interkulturelle Management-Und Organisationsberatung (n.d.) which manages the Schwartz Value Survey (SVS),

In order to avoid a cultural (ethnocentric) bias, values of all world-religions and items from cultural-specific questionnaires (e.g. Asia, Africa) were incorporated into its construction. The survey involved more than 60,000 individuals in 64 nations on all continents. The results contributed among other things to validate this instrument (p. 1).

Schwartz' value types were also validated by several multinational studies using the SVS which brought these values consistently into expected correlations with related concepts (Smith, Peterson, & Schwartz, 2002; Roccas, Sagiv, Schwartz, & Knafo, 2002; Bardi & Schwartz, 2003; Schwartz & Rubel, 2005).

Bilsky and Koch (2007) discussed validity of the Schwartz two-dimensional model of the relationships between values using two tools that differ from the SVS. According to the interpretation of their findings Bilsky and Koch concluded that on the condition that the instruments have the same motivational elements in common with the SVS, similar structures to Schwartz' model are produced, thus supporting the validity of SVS in the measurement of motivational value types.

## **Chapter 3 - The Methodology**

This chapter explains the methods that were used in carrying out the study. Emphasis is given to the procedure for the collection of the data and for the analysis of the data.

### **The General Perspective**

As a quantitative study the research presented here involved the testing of hypotheses concerning relationships between student gains on state assessments and the value types held by their teachers. This is an exploratory correlation study using backward multiple regression analyses to seek the nature of relationships between Schwartz' ten value types as held by teachers and average student test score gains.

### **The Research Context**

Prior to data collection, permission was sought from Shalom Schwartz for the use of the Schwartz Values Survey by emailing Dr. Schwartz (See Appendix K). He responded by sending a copy of the survey for this study along with scoring guides and instructions for administration (See Appendix G). Cooperation was sought from the Kansas State Department of Education (KSDE) for test score data. After an application for data was made, a meeting of the State Data Review Board (DRB) was attended by the researcher to explain the research and make a case for receiving student test score data matched to teachers. In January of 2011 the DRB agreed to cooperate and supply the test score data as requested. Application was then made to the Kansas State University Internal Review Board (IRB) to do survey research using human subjects. An amendment to the initial request was asked for which required a signed consent form from each teacher. The amended application was approved in May of 2011 and data collection began. The model as set up by Dillman, Smyth and Christian (2009) was followed.

On the day permission was received from the IRB, letters went out to 200 grade and middle school administrators requesting the names of 4<sup>th</sup> through 8<sup>th</sup> grade reading and mathematics teachers in their school for the study. As soon as names were received, surveys and consent forms were sent out to the individual teachers. By the end of July of 2011, 182 teacher responses had been received. The researcher was not able to receive consent forms or the identification of the teacher was not from the right grade level or subject area for ten of the responses. KSDE informed the researcher that student state test scores would not be finalized until November of 2011. In November, 172 teachers' names were sent to KSDE for matching to student test scores. In December of 2011, news was received from KSDE that they could not provide the quality of data that met up to their standards. KSDE was contacted by the researcher and a request to be put on the agenda of the Data Review Board's meeting in January of 2012 was made. At the meeting, the DRB agreed to allow the researcher to draft a letter to be sent by the Commissioner of Education to the building administrators requesting class lists from the 2011 classes of the teachers in the study to be sent to KSDE. The letter was drafted and was sent to KSDE in less than a week. No response was heard from KSDE for a month. In March of 2012 the researcher was able to make contact with the commissioner's secretary, and the letter could not be found. A suggestion was made by the secretary to have a deputy commissioner send out the letter. He was contacted and sent a new draft of the letter. He sent the letter to administrators via a list-serve communication. The letter was followed up by emails and phone calls to administrators by the researcher. By the end of July of 2012, 104 teachers' class lists had been sent in to KSDE. However, only 87 of the teachers' could be matched adequately by KSDE to two years of student test scores. This unfortunate series of events may have damaged the internal validity of the study by preventing the detection of small but potentially significant



effect sizes. The researcher received the data from KSDE in August of 2012. Data entry into SPSS was completed in the Fall of 2012 and statistical tests were run.

### The Research Question

Is there a significant relationship between teacher held basic motivational values as measured by the Schwartz Value Survey, and student gains on state assessments?

### Null Hypotheses

There is no significant relationship between teacher held basic value scores as measured by the Schwartz Value Survey, and student gains on state assessments.

There is no significant relationship between various combinations of teacher held motivational values scores as measured by the Schwartz Value Survey, and student gains on state assessments.

### The Research Participants

Participating in this study were 4<sup>th</sup> through 8<sup>th</sup> grade teachers of mathematics and reading from Kansas. A variety of district sizes were used and a minimal sample size of 150 was sought due to the number of regressions to be tested. This number was sought at the suggestion of Field (2005) in order to detect small effect sizes. By the end of August 2011, survey data had been collected from 182 4<sup>th</sup> grade through 8<sup>th</sup> grade randomly selected teachers of reading and mathematics. Due to the need for KSDE to seek additional information from building administrators and due to limitations regarding the Kansas State Department of Education's data base, the actual number of subjects used to run the regression analyses became 87. Of the 87 samples obtained 21 taught mathematics only, 21 taught reading only and the remaining 45 taught both reading and mathematics. Of the 87 samples obtained, 22 teachers taught an average grade of 4-4.5, 21 teachers taught an average grade of 5-5.5, 22 teachers taught an average grade

of 6-6.5, 11 teachers taught an average grade of 7-7.5, and 11 teachers taught an average grade of 8. Of the 87 teachers, 13 were males and 74 were females. The teachers in the final Sampling were largely dependent upon the researcher's ability to gain contact with teachers through the cooperation of their building administrators and on the willingness of administrators to send in class lists to the Kansas State Department of Education.

#### Instruments Used in Data Collection

Two different instruments were used in the data collection process. The Schwartz Value Survey (SVS) was used to collect data concerning teacher value type profiles. The survey contained three parts: two value lists and a set of demographical questions. 57 items representing specific value items were on the value lists. The items were rated on a scale of -1 to 7. Negative 1 represents a value to which one is opposed and 7 represents a value that is of supreme importance. The numbers 0-6 are ratings from not at all important to very important. As suggested in directions for scoring the instrument, individual scores were centered by using each subject's Mean Response to All Terms on the survey (referred to as their MRAT) (See appendix G).

The demographic section was used to collect information regarding the subject area taught, grade level taught, and gender of the subjects. The gender demographic was chosen because of the work of Schwartz and Rubel-Lifschitz (2009) and Schwartz and Rubel (2005) which showed that there is a small but significant effect between gender and values. Reading and Mathematics are chosen as demographics because a different test is used to predict teacher effect for reading than is used for math. The other reason that school subjects were chosen as a demographic is because of the possibility that different sets of values may be related to raising reading scores than were related to raising mathematics scores. Grade level was sought because

of an attempt to project if there was a significant change in test score gains as students move from elementary to middle school.

The Schwartz Value Survey data was collected primarily through the use of the U.S. Postal Service. Follow up e-mails and phone calls were made in order to encourage teachers to check their mail and return the surveys.

A second letter was sent to building administrators in order to collect information to help the Kansas State Department of Education match student scores to teachers (See appendix J). A preliminary test was performed on student scores to see if there is a significant difference between using scaled scores (See appendices E and F for scaling charts) or using the raw adjusted percentage scores to determine average test score gains. It was found that average teacher gains are significantly altered by using the raw scores verses the scaled scores. Therefore average scaled score gains were used in measuring teacher effect on student gains.

#### Procedures Used

After having received permission to do research using human subjects from the Kansas State University Institutional Review Board the following procedure was used to gain participants for the research. Using the 2009-2010 Kansas Educational Directory (Stewart, Lowe, Reinert, & Franklin, 2009), 200 public schools at the grade school and middle school level were selected by numbering the schools in the directory as listed and taking a computer generated list of random numbers. The model described by Dillman, Smyth & Christian (2009) for getting survey returns was used. Building administrators were contacted via U.S. Mail with a cover letter, a form for writing in potential teachers' names, two one dollar McDonalds gift certificates and a self-addressed stamped envelope for the return of the teacher list (see appendix H for copy of letter sent to administrators). After follow up telephone calls and emails, sixty-

seven administrators cooperated by returning lists of potential subjects for a response rate of 33.5%. 393 teachers' names and contact information were provided by the building administrators. A cover letter was sent to each of the teachers with an enclosed Schwartz Value Survey, informed consent document to be signed, two one-dollar McDonald's gift certificates and a self-addressed postage paid envelope (See appendix I for letter sent to teachers). A follow up phone contact or email was made to each teacher. Further emails and phone contacts were made if responses were delayed by more than two weeks. One hundred eighty-two teachers responded by sending back completed surveys, for a little better than a 50% return rate. Ten of the surveys were either incomplete, did not have signed informed consent documents to accompany them, or were from teachers that were not teaching math or reading in grades four through eight. This list of 172 teachers was then sent in to the Kansas State Department of Education (KSDE) for matching to student test scores. It was found by KSDE that matching of student test scores with specific teachers could not be done with sufficient quality to meet KSDE's standards. The inability of KSDE to adequately match teachers with their students' test scores resulted in a year's delay in obtaining the data and a loss of one half of the teachers from the study. To salvage the project a letter was then drafted and sent out from the office of Kansas Deputy Commissioner of Education, Brad Neuenswander via e-mail calling for building administrators involved to send class lists in to the Kansas State Department of Education so that matching could be successfully done (see appendix J). Follow up phone calls and emails were made to administrators in order to secure a response. By the end of June 2012, of the original list of 172 teachers that had validly participated, 104 teachers' class lists had been sent in to KSDE to be matched for an approximately 61% return rate from administrators. Of the 104 class lists, 87 could be effectively matched to two years' worth of test scores.

## Data Analysis

### *Preliminary Data Preparation and Statistical Procedures*

Test score data were prepared for statistical tests in the following way. Test score data were delivered from the Kansas State Department of Education linked to teachers in the study. Each student score was reported as a percentage score. 2010 and 2011 scores were paired for each student whose scores were used. The 2010 scores were averaged and then, using the scaling charts in appendices E and F, an equivalent grade level 2011 score was determined. The equivalent grade level score was then subtracted from the 2011 average score for an average test score gain. Test score gains of zero therefore represented an expected gain of a year's worth of learning, whereas gains of less than zero or more than zero represented less than or more than a year's worth of learning in the 2010-11 school year. For teachers who taught more than one grade level the average test score gains were weighted based on the number of students at each level and then averaged. For the 45 teachers who taught both reading and mathematics, separate mathematics test score gains and reading test score gains were entered. Also entered in their case were overall test score gains by averaging the two subject area gains. Students with missing data were excluded from the determination of test score gain averages.

Schwartz Values Survey score data was prepared for statistical tests by centering all scores based on each teacher's MRAT (Mean Response to All Terms). The MRAT was subtracted from each item's rating to render centered item rating scores. The MRAT was also subtracted from the average combined item ratings within each value type. Therefore, each value score with a negative designation indicated a ranked number below the mean response of that teacher. Likewise, each value score with a positive designation indicated a ranked number above the mean response.

Data were originally entered on Microsoft Excel spreadsheets with preliminary scatterplots, trend lines and R squared values run in the Excel format. Data were transferred to SPSS and analyzed with descriptive statistics, Pearson's correlations, and multiple backward stepwise regression analyses.

#### *Statistical Tests for Possible Intervening Variables*

Independent analyses of the possible intervening variables were run. A regression analysis was run using Grade level taught as the independent variable and average test score gain as the dependent variable to determine if it was necessary to hold grade level as a necessary variable when running multiple regressions on the value types.

Regression Analyses were run using average mathematics test score gains and average reading test score gains as the paired variables on the 45 teachers who taught both reading and mathematics. This was done to determine if a significant relationship existed between teachers' effects on mathematics test score gains and teachers' effects on reading test score gains. This test was also used to determine if separate statistical tests for reading teachers and math teachers were needed.

An independent T-test was run using gender as the independent variable and average test score gains as the dependent variable. Means were compared between the two genders to determine if there was a significant difference in the male and female genders when it came to producing average test score gains. This was done to determine if gender would need to be an independent variable in other statistical tests.

*Statistical Tests for Determining Relationships between Teacher Value Types and Average Student Test Score Gains*

Using average test score gains as the dependent variable and the ten value type scores as independent variables a backward stepwise method of multiple regression entry was used in order to obtain scores on the ten value types. The multiple regression was reported in table format showing the hierarchical regression, giving the constant as the average test score gain and different value types as the variables. Standardized betas, their significance values, betas and their standard error were reported. The R squared statistic was reported as well. An alpha of  $<.05$  was used to determine statistical significance.

Comparisons of descriptive statistics to the hypothesized sinusoid curve in chapter two, figure 2 were discussed. Also correlations and effect size of value types to the hypothesized sinusoid curve, as presented in chapter two, figure 2, were discussed.

*Statistical Tests for Determining Relationships between Specific Value Items and Their Combinations and Average Student Test Score Gains*

Eleven specific survey value items were chosen for their correlations with average reading test score gains and eleven specific survey value items were chosen for their correlations with average mathematics test score gains. Using mathematics and reading average test score gains as the dependent variables, separate Backward Stepwise Multiple Regression Analyses using SPSS were run for each.

Summary of Methodology

This is an exploratory correlational study using backward stepwise multiple regression models to analyze relationships between average test score gain by students as the dependent variable and teacher ratings of the ten value types and specific items on the Schwartz Values Survey as independent variables. Access to data was sought by approaching building

administrators as gatekeepers. After collecting paired data on state tests of reading and mathematics and results of the SVS from 87 fourth through eighth grade teachers of reading and mathematics in Kansas, data were analyzed. Analyses of regression models were displayed, discussed and compared to the hypothetical sinusoid curve in chapter two.



## **Chapter 4 - Results of the Study**

Chapter four presents the results of the study. Four main areas are addressed. First, data from tests for intervening variables are displayed and discussed serving as a basis for decisions on how to run other statistical tests. Secondly, descriptive statistics are displayed and discussed in order to give context for the multiple regressions that are displayed next. Third, the results of multiple regression analyses of teacher value types and their relationship to student test score gains are displayed and explained. Lastly, results of multiple regression analyses of specific value items from the Schwartz Values Survey are displayed and explained.

### **Tests for Possible Intervening Variables**

Three tests were run concerning possible intervening variables. Since the subjects in the study are both elementary and mid-level teachers, there was some concern on the part of the researcher that there may be a slump in test score gains as students changed learning environments by moving from elementary school into middle school. To prepare data for this test an average grade level taught by the teachers in the study was determined by using the number of students the teacher had in each grade level multiplied by those students' grade levels. The total was then divided by the total number of students. A single regression analysis was run, using average student test score gains as the dependent variable and average grade taught by teachers as the independent variable.

A second concern was that different skills and values may be required for teachers of different subject areas. Forty-five of the 87 teachers in the study taught both reading and mathematics. This provided an opportunity to determine if there is a relationship between teachers' ability to impact test score gains in reading with their ability to impact test score gains

in mathematics. Therefore a single regression analysis was run with the 45 subjects using average reading test score gains as the independent variable and average mathematics test score gains as the dependent variable.

Since grade school and middle school teaching positions are generally dominated by the female gender, as substantiated by this random sample of Kansas Teachers (Female N=74, Male N=13), there was a concern that if significant average test score gains differed between groups that gender might in some way be an additional variable of concern. Therefore a t-test was run to determine if there was a significant difference between male teachers' abilities to impact test score gains and female teachers' abilities to effect test score gains.

#### *Test Regarding Relationship between Grade Level and Test Score Gains*

Since teachers of grades 4 through 8 were sampled in this study it was decided to test for grade level as an intervening variable when it comes to average test score gains. The average grade taught for 22 of the subjects was 4<sup>th</sup> through less than 5<sup>th</sup>. The average grade taught for 21 of the subjects was 5<sup>th</sup> through less than 6<sup>th</sup>. The average grade taught for 22 of the subjects was 6<sup>th</sup> through less than 7<sup>th</sup>. The average grade taught for 11 of the subjects was 7<sup>th</sup> through less than 8<sup>th</sup>. And the average grade taught for 11 of the subjects was 8<sup>th</sup>. A single linear regression was run to determine if there was a significant relationship between test score gains and average grade level taught using the average test score gain as the dependent variable and average grade level taught as the independent variable. The results are displayed in Table 4.1.

Table 4.1  
Regression Results for Predicting Test Gains Using Grade Level (N=87)

Model	R <sup>2</sup>	B	Standard Error of B	β
Dependent Variable (Average Test Score Gain)		0.89	0.75	
Independent Variable (Average Grade Level Taught)	.001	-0.04	0.15	-.03

Though the data suggested that there was a very slight decline in test score averages with the increase of grade level taught ( $\beta = -.03$ ), increase in grade level taught can only account for one-tenth of a percent ( $R^2 = .001$ ) of drop in average test score gains. This one-tenth of a percent can only be predicted with less than 19% accuracy ( $p = .81$ ) which was far less than the 95% accuracy required by an  $\alpha < .05$ . Since the effect size was so minimal and the results were statistically insignificant, grade-level was not considered as an intervening variable when discussing test score gains in this study.

*Test Regarding Relationship between Subject Area and Test Score Gains*

Of the 87 subjects that were in the study, 45 of them taught both reading and mathematics. To test for this potential intervening variable it was decided to use these subjects to determine if a relationship existed between their students' test score gains in reading and their test score gains in mathematics. Reflected in table 4.2 and the subsequent discussion are the results of this linear regression. Mathematics test score gains category was chosen as the constant therefore the table

describes the ability of teachers to produce reading test score gains as a predictor of their ability to produce math score gains.

Table 4.2

Regression Results for Predicting Math Gains Using Reading Gains

Model	$R^2=0.03$	B	SE B	$\beta$
Constant (Average Mathematics Score Gain)			-0.34	0.74
Average Reading Score Gain	.033	0.22	0.18	.18

The data suggested that there was an increase in mathematics test score average gains with the increase of reading test score average gains ( $\beta=.18$ ). However, an increase in average reading score gains could only account for about a 3% increase in average mathematics score gains ( $R^2=0.03$ ). This 3% increase could be predicted with less than 77% accuracy ( $p=.23$ ) which is considerably less than the 95% accuracy required by an  $\alpha<.05$ . This suggested that variables such as value types had a different relationship to reading test score gains than the relationship that they had to mathematics test score gains. Therefore a decision was made to assess reading score gains and mathematics score gains separately in how they relate to values types and specific value items.

*Test Regarding Relationship between Gender and Average Test Score Gains*

Using a T-test to compare means, on average, the 74 female teachers had students that had slightly higher test score gains ( $M=0.77$ , SE [Standard Error] =0.37) than the 13 male teachers' average student test score gains ( $M=0.52$ , SE=1.49). However this difference was not

statistically significant ( $t[13.53]=.17, p>.05$ ) and this difference represents a small effect size ( $r=.05$ ). Due to the small sample size of males in the study and the large standard error, it is obvious that this study does not have the statistical power to determine if the effect size of gender is significant. Since it cannot be determined that gender has a significant impact on student test score gains it will not be used as a variable in the remaining tests.

### Descriptive Charts and Statistics

In this section the 87 subjects were not divided into Reading Teachers and Mathematics Teachers and then analyzed separately. After looking at these descriptive statistics separately it became obvious that they were nearly identical. This would make sense since 45 of the 87 subjects taught both reading and mathematics and are therefore the same teachers. Therefore, after the descriptive statistics are given for reading score gains and mathematics score gains, all of the value type descriptive statistics represent the views of all 87 subjects in the study. Following the Table 4.3 display, a discussion of the statistics is supplied.

Table 4.3 shows the results of the teachers' responses to the 10 value types (basic transituational priorities) on the Schwartz Value Survey (SVS). All value types scores are centered based on the mean response to all terms (MRAT). Therefore a negative number represents a mean response that is below the average response to all items on the survey and a positive number represents a mean response above the average response to all items on the survey.

Table 4.3

## Descriptive Statistics for Reading and Math Teachers

Descriptive Statistics

Variables	Mean	Standard Error of Mean	Standard Deviation
Avg. Reading Gain*	1.47	0.45	3.64
Avg. Reading Gain** (without outliers)	1.09	0.36	2.88
Avg. Math Gain***	0.07	0.54	4.42
Universalism	-0.20	0.08	0.75
Benevolence	1.12	0.06	0.59
Tradition	-0.53	0.09	0.84
Conformity	0.75	0.07	0.62
Security	0.05	0.06	0.58
Power	-2.19	0.11	1.00
Achievement	0.47	0.08	0.74
Hedonism	-0.71	0.12	1.08
Stimulation	-1.25	0.11	1.01
Self-Direction	0.18	0.08	0.74

---

N=87,\*N=66, \*\*N=64, \*\*\*N=66.

The average reading score gain for the 66 teachers of reading in this study resulted in an average of 1.47 percentage points of gain for the students in their classrooms above an expected years' worth of gain. Though this was above the expected norm of 0.00 percentage points of gain, the statistic was positively skewed. This skew reflected a more than expected years' worth

of test growth by the students of the teachers in the study. (An expected years' worth of test growth would be 0.00, which would show that that average student in the class gained one year's worth of expected growth in understanding.) One teacher in particular raised her students' reading test scores by an average 17.90 percentage points which is an outlier when using 3 standard deviations above the mean ( $3SDs=12.39$ ). Once this outlier was removed the next highest test score gain above the mean was an average test score gain of 9.30 percentage points. This score also became an outlier once the previous outlier was removed. When both outliers were removed the average reading test score gain was 1.09 percentage points for the remaining 64 teachers of reading with a standard deviation of 2.88. Without outliers the low average test score was -5.50 and high average test score was 7.90 for a range of 13.40 percentage points. Due to the discovery of these outliers they will be removed from the statistical tests that involved reading test score gains as a variable.

The average mathematics score gain for the 66 teachers of mathematics in this study resulted in an average of 0.07 percentage points of gain for the students in their classrooms above an expected years' worth of gain. With a standard error of mean equaling 0.54 the mean is well within the expected result. This is close to the expected norm of 0.00 percentage points of gain. With a positive kurtosis of 0.24 and standard error of kurtosis greater than the positive kurtosis ( $SE\ of\ Kurtosis=0.30$ ), and an average low score loss of -11.10 percentage points and an average high score gain of 11.20 percentage points and with median and mode of 0.00 and a skewness less than the standard error of skewness ( $SE\ of\ Skewness=0.30$ ), the average mathematics gains in this sample closely followed the hypothetically normal curve. None of the average mathematics score gains can be considered outliers ( $3SDs=13.26$ ).

For all of the value types scores represented the rating above or below the Mean Response to All Terms (MRAT) on the Schwartz Value Survey, around which all items are centered for each of the 87 subjects in the study. The least valued value type in the sample was Power with a mean response more than two ratings below the average MRAT ( $M=-2.19$ ). The most valued value type in the sample was Benevolence with a mean response more than one rating above the average MRAT ( $M=1.12$ ). Hedonism also fell within the range that was expected for this value type ( $M=-0.71$ ). While these three scores by the teachers in this sample seem to fit the hypothesized pattern of value types displayed in chapter two figure two, the rest of the values scores do not. Though philosophers would seem to put Universalism at the top of the curve as the highest of the value types it is ranked below the MRAT in this sample ( $M=-0.20$ ). According to what was hypothesized, Self-Direction would be expected to be ranked on a similar level as was Benevolence, but instead it was ranked closer to the MRAT ( $M=0.18$ ). Tradition and Stimulation were also expected to get positive ratings but also fell below the MRAT ( $M=-0.53$  and  $M=-1.25$ ). Achievement, Security, and Conformity value types would all be expected to be given negative rankings but instead were ranked above the MRAT by the sample ( $M=0.47$ ;  $M=0.05$ ;  $M=0.75$ ). While the descriptive statistics did not indicate whether majority opinion in the sample was a description of what a teacher who impacts test scores positively was like, it does make it evident that the practitioners in the study do not have motivational values that agree with the hypothetical sinusoid curve.

#### Tests Regarding Relationship between Test Score Gains and Teacher Value Types

In this section the results of multiple regression analyses of the relationships between value types of teachers and the average test score gains of their students. Teachers of reading and teachers of mathematics were dealt with separately. The number of subjects in the mathematics



group was 66. Once the outliers were removed the number of subjects in the reading group was 64. In both cases test score gains were entered as the dependent variable and the value types were entered as independent variables.

*Test Regarding Relationship between Reading Test Score Gains and Value Types*

In order to test for relationships between average reading test score gains and teacher value types a multiple backward stepwise regression model was run with all ten of the value types. Because of the high number of independent variables being used, multicollinearity statistics were closely watched to avoid any type 2 errors that might occur with the removal of variables from one step to another. Setting minimal tolerance statistics as greater than .20 for tolerances and a VIF (Variance Inflation Factor) of less than 5 no concerns of multicollinearity were found. According to Andy Field's (2005) discussion on pages 174-5 one person suggests that a VIF of less than ten is acceptable and another that anything above one can bias a multiple regression. Ten suggests complete multicollinearity and one suggests absolutely no multicollinearity, which is hardly possible unless there is only one independent variable tested. Therefore it was decided to split the difference by setting the VIF as less than 5. While Field plays it safe and is not ready to offer a happy medium for multicollinearity, he suggests that a tolerance of less than .20 is an issue of concern. All tolerance and VIF statistics were well within acceptable levels with the lowest tolerance being .37 in model one for the Tradition value type and the highest VIF being 2.68 for the Tradition value type in model one. The B values (representing unit correlations), standard error of B (representing how much the B statistic could be misrepresented),  $\beta$  values (representing correlations after units have been converted to standard deviation units),  $R^2$  values (representing the percentage of dependent variable that can be accounted for by the independent variables in the model) and statistical significance with an  $\alpha$

set at  $<.05$  (noted by an asterisk) are indicated in Table 4 below. The  $\alpha$  represents the highest significance statistic (p-value) permitted to accept the dependent variable's effect on the independent variable as statistically significant. A discussion of the data in each model follows Table 4.4 below.

Table 4.4

Regression Results for Predicting Reading Gains Using Values Type Responses

Model	B	Standard Error of B	$\beta$
Step 1 $R^2 = 0.10$			
Universalism Value Type	0.96	0.78	.24
Benevolence Value Type	0.71	0.78	.02
Tradition Value Type	0.43	0.70	.13
Conformity Value Type	-0.96	0.81	-.20
Security Value Type	0.40	0.76	.08
Power Value Type	0.15	0.55	.05
Achievement Value Type	0.13	0.64	.03
Hedonism Value Type	0.15	0.52	.06
Stimulation Value Type	-0.08	0.49	-.03
Self-Direction Value Type	-0.36	0.71	-.09

Model	B	Standard Error of B	$\beta$
Step 2 $R^2=0.10$			
Universalism Value Type	0.94	0.75	.24
Tradition Value Type	0.43	0.69	.13
Conformity Value Type	-0.97	0.80	-.20
Security Value Type	0.39	0.73	.08
Power Value Type	0.13	0.50	.04
Achievement Value Type	0.12	0.63	.03
Hedonism Value Type	0.13	0.46	.05
Stimulation Value Type	-0.89	0.47	-.03
Self-Direction Value Type	-0.37	0.69	-.10
Step 3 $R^2=0.10$			
Universalism Value Type	0.86	0.62	.22
Tradition Value Type	0.36	0.58	.11
Conformity Value Type	-0.98	0.79	-.21
Security Value Type	0.35	0.70	.07
Power Value Type	0.11	0.48	.04
Hedonism Value Type	0.10	0.42	.04
Stimulation Value Type	-0.11	0.45	-.04
Self-Direction Value Type	-0.38	0.68	-.10

Model	B	Standard Error of B	$\beta$
Step 4 $R^2=0.10$			
Universalism Value Type	0.80	0.55	.21
Tradition Value Type	0.32	0.54	.10
Conformity Value Type	-1.02	0.75	-.22
Security Value Type	0.33	0.69	.07
Hedonism Value Type	0.94	0.41	.04
Stimulation Value Type	-0.14	0.43	-.05
Self-Direction Value Type	-0.44	0.62	-.12
Step 5 $R^2=0.10$			
Universalism Value Type	0.77	0.52	.20
Tradition Value Type	0.27	0.49	.08
Conformity Value Type	-1.08	0.70	-.23
Security Value Type	0.31	0.68	.07
Stimulation Value Type	-0.15	0.42	-.05
Self-Direction Value Type	-0.51	0.55	-.13
Step 6 $R^2=0.10$			
Universalism Value Type	0.79	0.51	.20
Tradition Value Type	0.33	0.46	.10
Conformity Value Type	-0.99	0.65	-.21
Security Value Type	0.38	0.65	.08
Self-Direction Value Type	-0.49	0.55	-.13

Model	B	Standard Error of B	$\beta$
Step 7 $R^2=0.09$			
Universalism Value Type	0.77	0.51	.20
Tradition Value Type	0.79	0.53	.19
Conformity Value Type	-1.11	0.62	-.23
Self-Direction Value Type	-0.58	0.52	.09
Step 8 $R^2=0.09$			
Universalism Value Type	0.72	0.50	.18
Conformity Value Type	-1.05	0.61	-.22
Self-Direction Value Type	-0.68	0.50	-.18
Step 9 $R^2=0.06$			
Universalism Value Type	0.56	0.49	.14
Conformity Value Type	-0.84	0.59	-.18
Step 10 $R^2=0.04$			
Conformity Value Type	-0.91	0.59	-.19

\* $p<.05$

The data in step one of the table above suggests that gains in teacher value type ratings of Achievement ( $\beta=.03$ ), Power ( $\beta=.05$ ), Benevolence ( $\beta=.02$ ) Universalism ( $\beta=.24$ ), Hedonism ( $\beta=.06$ ), Security ( $\beta=.08$ ), and Tradition ( $\beta=.13$ ) predict a positive gain in student reading test scores. The data in this step also suggests that losses in teacher value type ratings of Self-Direction ( $\beta=-.09$ ), Conformity ( $\beta=-.20$ ), and Stimulation ( $\beta=-.03$ ) predict gains in student

reading test scores. The table also suggests that this model can predict 10% of the gains in reading test scores ( $R^2=0.10$ ). This would be a medium effect size ( $R=0.32$ ). However according to the ANOVA (Analysis of Variance) there is no significant difference between this model's ability to predict test score gains than the mean ( $p=0.81$ ). Within this model none of the value types attain the  $\alpha<0.05$  with p-values ranging from 0.23 to 0.93.

As one looks at the results in Table 4 for further models in this multiple regression, the predictability gradually decreases with each step to a B of 0.19 in Step 10. According to the ANOVA all models do not differ in a statistically significant manner from the mean, with the most hope for a significant model coming from Step 8 ( $p=0.14$ ) containing value types of Self-Direction, Conformity and Universalism. In summary, according to this multiple regression, there is little support for predicting gains in student reading test scores from teacher value type scores.

#### *Test Regarding Relationships between Mathematics Test Score Gains and Value Types*

In order to test for relationships between average mathematics test score gains and teacher value types a multiple backward stepwise regression model was run with all ten of the value types. Because of the high number of independent variables being used, indicators of multicollinearity were closely watched to avoid any type two errors that might have occurred with the removal of variables from one step to another. Setting minimal tolerance statistics as greater than .20 for tolerances and a VIF (Variance Inflation Factor) of less than five (Field 2005), no concerns of multicollinearity were found. All tolerance and VIF statistics were well within acceptable levels with the lowest tolerance being .36 in models one and two for the Universalism value type and the highest VIF being 2.81 for the Universalism value type in model

one. The B values, error of B,  $\beta$  values,  $R^2$  values and statistical significance with an  $\alpha$  set at  $<.05$  (noted by an asterisk) are indicated in Table 4.5 below. A discussion of the data follows.

Table 4.5

Regression Results for Predicting Math Gains Using Values Type Responses

Model	B	Standard Error of B	$\beta$
Step 1 $R^2=0.20$			
Universalism Value Type	-1.19	1.20	-.20
Benevolence Value Type	0.22	1.13	.03
Tradition Value Type	1.12	0.94	.25
Conformity Value Type	-0.82	1.04	-.12
Security Value Type	0.45	1.12	.06
Power Value Type	0.42	0.72	.10
Achievement Value Type	0.20	0.88	.03
Hedonism Value Type	0.23	0.84	.05
Stimulation Value Type	-1.35	0.67	-.29*
Self-Direction Value Type	1.07	1.12	.18
Step 2 $R^2=0.20$			
Universalism Value Type	-1.22	1.17	-.21
Tradition Value Type	1.20	0.93	.24
Conformity Value Type	-0.78	1.01	-.11
Security Value Type	0.40	1.08	.05
Power Value Type	0.40	0.70	.10

Model	B	Standard Error of B	$\beta$
Achievement Value Type	0.18	0.87	.03
Hedonism Value Type	0.18	0.79	.04
Stimulation Value Type	-1.37	0.66	-.29*
Self-Direction Value Type	1.06	1.11	.18

Step 3  $R^2=0.20$

Universalism Value Type	-1.34	1.01	-.23
Tradition Value Type	1.10	0.79	.22
Conformity Value Type	-0.82	0.98	-.12
Security Value Type	0.36	1.06	.05
Power Value Type	0.34	0.65	.08
Hedonism Value Type	0.10	0.71	.02
Stimulation Value Type	-1.39	0.65	-.29*
Self-Direction Value Type	0.98	1.04	.17

Step 4  $R^2=0.20$

Universalism Value Type	-1.43	0.80	-.24
Tradition Value Type	1.06	0.72	.21
Conformity Value Type	-0.87	0.93	-.12
Security Value Type	0.37	1.05	.05
Power Value Type	0.32	0.63	.08
Stimulation Value Type	-1.39	0.65	-.29*
Self-Direction Value Type	0.93	0.97	.16



Model	B	Standard Error of B	$\beta$
Step 5* $R^2=0.20$			
Universalism Value Type	-1.46	0.80	-.25
Tradition Value Type	-0.99	0.70	.20
Power Value Type	0.37	0.61	.09
Stimulation Value Type	-1.46	0.60	-.31*
Self-Direction Value Type	0.95	0.96	.16
Step 6* $R^2=0.19$			
Universalism Value Type	-1.63	0.74	-.28*
Tradition Value Type	0.84	0.65	.17
Conformity Value Type	-1.02	0.89	.15
Stimulation Value Type	-1.44	0.60	-.30*
Self-Direction Value Type	0.68	0.84	.11
Step 7* $R^2=0.18$			
Universalism Value Type	-1.48	0.71	-.25*
Tradition Value Type	0.71	0.63	.14
Conformity Value Type	-1.18	0.86	-.17
Stimulation Value Type	-1.31	0.58	-.28*
Step 8* $R^2=0.16$			
Universalism Value Type	-1.64	0.70	-.28*
Conformity Value Type	-0.97	0.84	-.14
Stimulation Value Type	-1.46	0.56	-.31*

Model	B	Standard Error of B	$\beta$
Step 9* $R^2=0.15$			
Universalism Value Type	-1.49	0.69	-.25*
Stimulation Value Type	-1.34	0.55	-.28*

\* $p < .05$

The data in model one suggested that gains in teacher value type ratings of Benevolence, Tradition, Security, Power, Achievement, Hedonism, and Self-Direction as well as losses of value type ratings of Universalism, Conformity and Stimulation together could account for 20% of student gains on Mathematics test scores ( $R^2 = .20$ ). This was approaching a large effect size for this model ( $R = .45$ ). However, with an  $\alpha < .05$  this model was not found to be significantly different than using the mean ( $p = .22$ ). The Stimulation value type in model one had a statistically significant negative relationship with average mathematics test score gains ( $p = .049$ ). In this model a drop of approximately 1 standard deviation of rating of the value type of Stimulation predicted an increase of 0.29 standard deviations of Average Reading Test Score gains ( $\beta = -.29$ ).

When looking at Table 4.5, steps 2 through 4 in the table had similar results as did step 1 for predicting test score gains with  $R^2$  values equal to .20, and Rs between .45 and .44. As value types of Benevolence, Achievement, and Hedonism were dropped from these models the ANOVA indicated that the steps moved closer to statistical significance with ps dropping from 0.22 to 0.16 in step two, to 0.11 in step three and 0.07 in step four. The Stimulation Value Type

with its negative correlation to student test score gains ( $\beta_s = -.29$ ), continued to be a significant contributor in each of these steps ( $p_s = 0.04$ ).

After dropping the value types of Benevolence, Achievement, Hedonism, and Security from the regression, steps five through nine are significantly different than using the mean as shown by the ANOVA ( $p_s = 0.04$ ; 0.03; 0.01; 0.01; and 0.01). In steps 6 through 9 as shown in the chart the value type of Universalism joins the value type of Stimulation as significant contributors to these models ( $p_s < 0.05$ ). These models show that an increase in teacher ratings of both the Stimulation teacher value type ( $\beta_s = -.30$ ;  $-.28$ ;  $-.31$ ;  $-.28$ ) and the Universalism teacher value type ( $\beta_s = -.28$ ;  $-.25$ ;  $-.28$ ;  $-.25$ ) predict a significant decrease in student math test performance gains. Scores on teacher value types in these models can predict 15 to 19% of student test score gains in mathematics ( $R^2_s = 0.19$ ; 0.18; 0.16; 0.15).

Within the models of this multiple regression, step seven is of particular interest since it holds the greatest potential for generalizing to other populations (Adjusted  $R^2 = 0.13$ ). After dropping the value types of Benevolence, Achievement, Hedonism, Security, Power, and Self-Direction in model seven, it was found that gains in teacher value type ratings of Tradition as well as losses in teacher value type ratings of Universalism, Conformity, and Stimulation together accounted for 18% of the average gain in student mathematics test scores ( $R^2 = .18$ ). This approached a large effect size for this model ( $R = .43$ ). With an  $\alpha < .05$  this model was found to be significantly different than using the mean to predict test score gains ( $p = .01$ ). The Stimulation value type in model seven had a significant negative relationship with average mathematics test score gains ( $p = .03$ ). In this model, with a drop of approximately 1 standard deviation in teacher rating of the value type of Stimulation, a predicted increase of 0.28 standard deviations of average mathematics test score gains ( $\beta = -.28$ ) was found. The Universalism value

type in model seven also had a significant negative relationship with average mathematics test score gains ( $p=.03$ ). In this model, with a drop of one standard deviations of rating of the value type of Universalism, there was a predicted increase of 0.25 standard deviations of average mathematics test score gains ( $\beta = -.25$ ).

In summary, steps five through nine were significant models for predicting mathematics test score gains by using teacher value type ratings. Of the value types, Universalism and Stimulation were the strongest predictors of student math score gains. Model seven, which includes value types of Universalism, Tradition, Conformity and Stimulation held the greatest hope for generalizing (adjusted  $R^2 = .13$ ). Model five, including value types of Tradition, Stimulation, Universalism, Conformity, Power, and Self-Direction showed the largest effect size of all of the statistically significant models in this multiple regression ( $R^2 = .20$ ).

#### Tests Regarding Relationship between Test Score Gains and Teacher Responses to Specific Value Items on the Schwartz Values Survey

In the theory building process of the 10 value types, Schwartz and Bilsky (1987) used value items from Rokeach's instrument (Rokeach, 1973), to which they later added value items of their own. Being that the SVS (Schwartz Value Survey) is built upon pieces designed to simply measure individual values instead of value types, it seemed appropriate that teachers' responses to individual items from the SVS, which were largely borrowed from Rokeach, could legitimately be taken individually and examined in their relationships to student test score gains.

The 57 items on the Schwartz Values Survey, in their relationships to average test score gains for reading and mathematics, were individually analyzed using Microsoft EXCEL. Scatter plots, lines of best fit were produced and  $R^2$  values for each individual item were examined. Thirty-one items showed a relationship to average test score gains with an  $R^2$  of .01 or greater

were then entered into SPSS for further analysis. In order to determine the final set of value items to be used these 31 items were analyzed in groups of six with multiple regressions. Items that showed a  $p < .10$  or were part of a statistical model with an ANOVA  $p < .10$ , were chosen for further analysis. Using these criteria, 11 items were chosen for the final multiple regression analysis regarding student reading test score gains. Also, using these criteria, 15 items were chosen for the multiple regression analysis regarding student mathematics test score gains. When the mathematics multiple regression was run, the models were statistically identical until four of these selected items were removed in the backward stepwise regression. These four items made no statistical contributions to the model. A final multiple regression with mathematics test scores was run using the remaining 11 survey items. The two sections below describe the culminating backwards stepwise multiple regression analyses of the relationships between these specific items and average test score gains for Mathematics and Reading.

*Tests Regarding the Relationship between Student Reading Test Score Gains and Teachers' Responses to Specific Value Items on the Schwartz Value Survey*

In order to test for relationships between average reading test score gains and teacher value items, a multiple backward stepwise regression model was run with eleven of the value items that were identified. Because of the high number of independent variables being used, multicollinearity was closely watched to avoid any type two errors that might occur as items were removed from the regression. Setting minimal tolerance statistics as greater than .20 for tolerances and a VIF (Variance Inflation Factor) of less than five, no concerns of multicollinearity were found. According to Andy Field's (2005) discussion on pages 174-5 one person suggests that a VIF of less than 10 is acceptable and another that anything above one can bias a multiple regression. Ten suggests complete multicollinearity and one suggests absolutely

no multicollinearity, which is hardly possible unless there is only one independent variable tested. Therefore it was decided to split the difference by setting the VIF as less than five. While Field plays it safe and is not ready to offer a happy medium for multicollinearity, he suggests that a tolerance of less than .20 is an issue of concern. All tolerance and VIF statistics were well within acceptable levels with the lowest tolerance being .71 in model one for the “Successful” value item and the highest VIF being 1.41 for the same value item. The B values, error of B,  $\beta$  values,  $R^2$  values for each model, and statistical significance with an  $\alpha$  set at  $<.05$  (noted by an asterisk) are indicated in Table 4.6. A discussion of the data was placed after the table. Subjects’ responses to survey items, whose students’ average test score gains were outliers, were removed from this statistical test.

The eleven value items from the Schwartz Value Survey (see appendix G) tested were: (Numbers in front of items correspond to their item number on the SVS) 55. SUCCESSFUL (achieving goals), 47. OBEDIENT (dutiful, meeting obligations), 28. TRUE FRIENDSHIP (close, supportive friends), 24. UNITY WITH NATURE (fitting into nature), 22. FAMILY SECURITY (safety for loved ones), 32. MODERATE (avoiding extremes of feeling & action), 7. SENSE OF BELONGING (feeling that others care about me), 2. INNER HARMONY (at peace with myself), 20. SELF-DISCIPLINE (self-restraint, resistance to temptation), 11. POLITENESS (courtesy, good manners), 39. INFLUENTIAL (having an impact on people and events).

Table 4.6

## Regression Results for Predicting Reading Gains Using Value Items

Model	B	Standard Error of B	$\beta$
Step 1* $R^2=0.32$			
SUCCESSFUL	0.23	0.36	.09
OBEDIENT	-0.34	0.36	-.12
TRUE FRIENDSHIP	1.04	0.37	.35*
UNITY WITH NATURE	0.29	0.23	.16
FAMILY SECURITY	-0.45	0.39	-.15
MODERATE	0.66	0.33	.27*
SENSE OF BELONGING	0.48	0.29	.21
INNER HARMONY	-0.41	0.28	-.18
SELF DISCIPLINE	-0.15	0.30	-.06
POLITENESS	-0.51	0.36	-.17
INFLUENTIAL	-0.12	0.22	-.07
Step 2* $R^2=0.32$			
SUCCESSFUL	0.25	0.36	.10
OBEDIENT	-0.40	0.34	-.15
TRUE FRIENDSHIP	1.05	0.37	.35*
UNITY WITH NATURE	0.31	0.22	.18
FAMILY SECURITY	-0.44	0.38	-.14
MODERATE	0.69	0.32	.28*

Model	B	Standard Error of B	$\beta$
SENSE OF BELONGING	0.45	0.28	.20
INNER HARMONY	-0.39	0.28	-.17
POLITENESS	-0.52	0.36	-.18
INFLUENTIAL	-0.11	0.22	-.07
Step 3* $R^2=.32$			
SUCCESSFUL	0.24	0.35	.09
OBEDIENT	-0.40	0.34	-.15
TRUE FRIENDSHIP	1.09	0.36	.37*
UNITY WITH NATURE	0.33	0.22	.18
FAMILY SECURITY	-0.43	0.38	-.14
MODERATE	0.72	0.31	.29*
SENSE OF BELONGING	0.43	0.28	.19
INNER HARMONY	-0.35	0.27	-.16
POLITENESS	-0.51	0.35	-.17
Step 4* $R^2=.31$			
OBEDIENT	-0.38	0.33	-.14
TRUE FRIENDSHIP	1.07	0.35	.36*
UNITY WITH NATURE	0.27	0.20	.15
FAMILY SECURITY	-0.47	0.37	-.15
MODERATE	0.67	0.30	.26*
SENSE OF BELONGING	0.44	0.27	.19



Model	B	Standard Error of B	$\beta$
INNER HARMONY	-0.33	0.27	-.15
POLITENESS	-0.47	0.35	-.16
Step 5* $R^2=0.29$			
TRUE FRIENDSHIP	1.12	0.35	.38*
UNITY WITH NATURE	0.29	0.20	.17
FAMILY SECURITY	-0.48	0.38	-.16
MODERATE	0.67	0.30	.27*
SENSE OF BELONGING	0.53	0.26	.23*
INNER HARMONY	-0.37	0.27	-.17
POLITENESS	-0.53	0.34	-.18
Step 6* $R^2=0.27$			
TRUE FRIENDSHIP	1.00	0.34	.34*
UNITY WITH NATURE	0.33	0.20	.19
MODERATE	0.67	0.30	.27*
SENSE OF BELONGING	0.52	0.26	.23
INNER HARMONY	-0.29	0.26	-.13
POLITENESS	-0.53	0.35	-.18
Step 7* $R^2=0.26$			
TRUE FRIENDSHIP	0.99	0.34	.33*
UNITY WITH NATURE	0.34	0.20	.19
MODERATE	0.74	0.29	.30*

Model	B	Standard Error of B	$\beta$
SENSE OF BELONGING	0.51	0.26	.22
POLITENESS	-0.53	0.35	-.18
Step 8* $R^2=0.23$			
TRUE FRIENDSHIP	0.94	0.34	.32*
UNITY WITH NATURE	0.31	0.20	.18
MODERATE	0.65	0.29	.26*
SENSE OF BELONGING	0.52	0.27	.23
TRUE FRIENDSHIP	0.92	0.35	.31*
MODERATE	0.63	0.29	.25*
SENSE OF BELONGING	0.52	0.27	.23

\* $p < .05$

As seen in Table 4.6, the model in step 1 shows that gains in teacher value item ratings of SUCCESSFUL (achieving goals), TRUE FRIENDSHIP (close, supportive friends), UNITY WITH NATURE (fitting into nature), MODERATE (avoiding extremes of feeling & action), SENSE OF BELONGING (feeling that others care about me), as well as losses in teacher value item ratings of OBEDIENT (dutiful, meeting obligations), FAMILY SECURITY (safety for loved ones), INNER HARMONY (at peace with myself), SELF-DISCIPLINE (self-restraint, resistance to temptation), POLITENESS (courtesy, good manners), and INFLUENTIAL (having an impact on people and events) together can account for as much as 32% of the average gains in student reading test scores ( $R^2=0.32$ ). Step nine shows that a rise in the teacher ratings for the

three value items of TRUE FRIENDSHIP (close, supportive friends), MODERATE (avoiding extremes of feeling & action), and SENSE OF BELONGING (feeling that others care about me) account for 20% of student average reading test score gains ( $R^2=0.20$ ). All models represent large effect sizes ( $R$ s range from 0.57 to 0.44). With an  $\alpha<.05$  all 9 models were significantly different than using the mean to predict student reading test score gains with ANOVA  $p$ s ranging from 0.026 in model 1 to 0.004 in model 9.

Of the different models, the one represented in Step 5 is worthy of more focus because it is the only model that had three specific value items that were found to be statistically significant within the model, using an  $\alpha<.05$ . These three teacher value items were ,TRUE FRIENDSHIP (close, supportive friends) ( $p=0.002$ ), MODERATE (avoiding extremes of feeling & action)( $p=0.027$ ), and SENSE OF BELONGING (feeling that others care about me) ( $p=0.047$ ). Model 5 suggests that gains in teacher value item ratings of TRUE FRIENDSHIP (close, supportive friends), UNITY WITH NATURE (fitting into nature), MODERATE (avoiding extremes of feeling & action), and SENSE OF BELONGING (feeling that others care about me), as well as loses in teacher value item ratings of FAMILY SECURITY (safety for loved ones), INNER HARMONY (at peace with myself), and POLITENESS (courtesy, good manners) can account for 29% of the gain in student reading test scores ( $R^2=0.29$ ). This represents a large effect size ( $R=0.54$ ). Model 5 theoretically translates into being able to predict 21% of student test score gains for populations outside of this sample (Adjusted  $R^2=0.21$ ).

Within this model, a teacher's rating gain of one on the value item of TRUE FRIENDSHIP (close, supportive friends) results in an average student reading test score gain of 1.12% ( $B=1.12$ ). A gain of one standard deviation of teacher rating on the TRUE FRIENDSHIP item resulted in a 37% of a standard deviation gain in average student reading test score gains

( $\beta=0.38$ ). The relationship between the students' reading test score gains and the teachers' ratings of this value item are statistically significant in this model ( $p=0.002$ ).

Also within Model 5, an increase of rating of one on the value item of MODERATE (avoiding extremes of feeling and action) results in an average student reading test score gain of 0.67% ( $B=0.67$ ). A gain of one standard deviation of teacher rating on the MODERATE item resulted in a 27% of a standard deviation gain in average reading test score gains ( $\beta=0.27$ ). The relationship between the students' reading test score gains and the teachers' ratings of this value item are statistically significant in this model ( $p=0.027$ ).

Finally Model 5 demonstrates an increase of rating of one on the value item of SENSE OF BELONGING (feeling that others care about me) results in an average student reading score gain of 0.53% ( $B=0.53$ ). A gain of one standard deviation of teacher rating on the SENSE OF BELONGING item resulted in a 23% of a standard deviation gain in average reading test score gains ( $\beta=0.23$ ). The relationship between the students' reading test score gains and the teachers' ratings of this value item are statistically significant within this model ( $p=0.047$ ).

*Tests Regarding the Relationship between Mathematics Test Score Gains and Specific Value Items on the Schwartz Values Survey*

In order to test for relationships between average mathematics test score gains and teacher value items a multiple backward stepwise regression model was run with eleven of the value items that were identified. Because of the high number of independent variables being used, indicators of multicollinearity were monitored to avoid type two errors that might occur with the removal of variables from one step to another. Setting minimal tolerance statistics as greater than .20 for tolerances and a VIF of less than 5, no concerns of multicollinearity were found. According to Andy Field's (2005) discussion on pages 174-5, one person suggests that a VIF of

less than 10 is acceptable and another that anything above 1 can bias a multiple regression. Ten suggests complete multicollinearity and 1 suggests absolutely no multicollinearity, which is hardly possible unless there is only one independent variable tested. Therefore it was decided to split the difference by setting the VIF as less than 5. While Field plays it safe and is not ready to offer a happy medium for multicollinearity, he suggests that a tolerance of less than .20 is an issue of concern. All tolerance and VIF statistics were well within acceptable levels with the lowest tolerance being .75 in model one for the RECIPROCATION OF FAVORS (avoidance of indebtedness) value item and the highest VIF being 1.34 for the same. The B values, error of B,  $\beta$  values,  $R^2$  values, and statistical significance with an  $\alpha$  set at  $<.05$  (noted by an asterisk) are indicated in Table 4.7. A discussion of some of the data in Table 4.7 follows.

The items from the Schwartz Value Survey (see appendix G) that were in this final multiple regression were: (Numbers in front of items correspond to their item number on the SVS) 20. SELF-DISCIPLINE (self-restraint, resistance to temptation); 32. MODERATE (avoiding extremes of feeling & action); 42. HEALTHY (not being sick physically or mentally); 1. EQUALITY (equal opportunity for all); 24. UNITY WITH NATURE (fitting into nature); 14. SELF RESPECT (belief in one's own worth); 12. WEALTH (material possessions, money); 2. INNER HARMONY (at peace with myself); 15. RECIPROCATION OF FAVORS (avoidance of indebtedness); 46. PRESERVING MY PUBLIC IMAGE (protecting my "face"), 55. SUCCESSFUL (achieving goals).

Table 4.7

## Regression Results for Predicting Math Gains Using Value Items

Model	B	Standard Error of B	$\beta$
Step 1* $R^2=0.43$			
SELF-DISCIPLINE	-0.47	0.40	-.13
MODERATE	0.92	0.43	.24*
HEALTHY	1.24	0.47	.30*
EQUALITY	-0.64	0.39	-.19
UNITY WITH NATURE	-0.49	0.28	-.19
SELF RESPECT	1.02	0.46	.24*
WEALTH	0.42	0.37	.26
INNER HARMONY	-0.57	0.38	.17
RECIPROCATION OF FAVORS	0.64	0.30	.26*
PRESERVING MY PUBLIC IMAGE	0.44	0.29	.17
SUCCESSFUL	-0.84	0.49	-.19
Step 2* $R^2=0.42$			
SELF-DISCIPLINE	-0.53	0.34	-.14
MODERATE	0.92	0.40	.24*
HEALTHY	1.35	0.46	.33*
EQUALITY	-0.68	0.39	-.20

Model	B	Standard Error of B	$\beta$
UNITY WITH NATURE	-0.54	0.28	-.21
SELF RESPECT	0.99	0.46	.24*
INNER HARMONY	-0.63	0.38	-.19
RECIPROCATION OF FAVORS	0.73	0.28	.29*
PRESERVING MY PUBLIC IMAGE	0.51	0.28	.20
SUCCESSFUL	-0.77	0.48	-.18
Step 3* $R^2=0.40$			
MODERATE	0.96	0.43	.25*
HEALTHY	1.40	0.47	.34*
EQUALITY	-0.71	0.39	-.21
UNITY WITH NATURE	-0.53	0.28	-.21
SELF RESPECT	0.87	0.46	.21
INNER HARMONY	-0.54	0.37	-.16
RECIPROCATION OF FAVORS	0.74	0.29	.30*
PRESERVING MY PUBLIC IMAGE	0.55	0.28	.22
SUCCESSFUL	-0.69	0.48	-.16
Step 4* $R^2=0.38$			
MODERATE	1.11	0.42	.29*
HEALTHY	-0.72	0.39	-.21
UNITY WITH NATURE	-0.47	0.28	-.19
SELF RESPECT	0.79	0.46	.19

Model	B	Standard Error of B	$\beta$
INNER HARMONY	-0.60	0.37	-.18
RECIPROCATION OF FAVORS	0.76	0.29	.31*
PRESERVING MY PUBLIC IMAGE	0.58	0.28	.23*
Step 5* $R^2=0.35$			
MODERATE	1.19	0.42	.31*
HEALTHY	1.37	0.47	.33*
EQUALITY	-0.81	0.39	-.23*
UNITY WITH NATURE	-0.49	0.28	-.19
SELF RESPECT	0.59	0.45	.14
RECIPROCATION OF FAVORS	0.71	0.29	.29*
PRESERVING MY PUBLIC IMAGE	0.52	0.29	.20
Step 6* $R^2=0.33$			
MODERATE	1.15	0.43	.30*
HEALTHY	1.34	0.47	.33*
EQUALITY	-0.83	0.40	-.24*
UNITY WITH NATURE	-0.48	0.28	-.19
RECIPROCATION OF FAVORS	0.73	0.29	.29*
PRESERVING MY PUBLIC IMAGE	0.49	0.29	.19

\* $p < .05$

As the most powerful model in the above chart, Step 1 shows that gains in teacher value item ratings of MODERATE (avoiding extremes of feeling & action), HEALTHY (not being



sick physically or mentally), SELF RESPECT (belief in one's own worth), WEALTH (material possessions, money), RECIPROCATION OF FAVORS (avoidance of indebtedness), and PRESERVING MY PUBLIC IMAGE (protecting my "face"), as well as losses of value item ratings of SELF-DISCIPLINE (self-restraint, resistance to temptation), EQUALITY (equal opportunity for all), UNITY WITH NATURE (fitting into nature), INNER HARMONY (at peace with myself), and SUCCESSFUL (achieving goals), together accounted for 43% of the average gain in student mathematics test scores ( $R^2 = .43$ ). This represents a large effect size for this model ( $R = .66$ ). Hypothetically, this model would predict 32% of the mathematics test score gains in other populations (Adjusted  $R^2 = .32$ ). With an  $\alpha < .05$  from the ANOVA this model was shown to be significantly different than using the mean to predict test score gains ( $p = .001$ ).

The MODERATE value item in model one had a significant positive relationship with average reading test score gains ( $p = .04$ ). In this model a gain of approximately one standard deviation of rating the value item of MODERATE predicted an increase of 0.24 standard deviations of average mathematics test score gains ( $\beta = .24$ ).

The HEALTHY value item in model one also had a significant positive relationship with average mathematics test score gains ( $p = .01$ ). In this model a gain of 1 standard deviation of rating the value item of HEALTHY predicted an increase of 30% of one standard deviation of average mathematics test score gains ( $\beta = .30$ ).

The SELF RESPECT value item in model one had a significant positive relationship with average mathematics test score gains ( $p = .03$ ). In this model a gain of one standard deviation of rating of the value item of SELF RESPECT predicted an increase of 24% of one standard deviation of average mathematics test score gains ( $\beta = .24$ ).

The RECIPROCATION OF FAVORS value item in model one had a significant positive relationship with average mathematics test score gains ( $p=.04$ ). In this model a gain of one standard deviation of rating of the value item of RECIPROCATION OF FAVORS accounted for an increase of 26% of one standard deviation of average mathematics test score gains ( $\beta=.26$ ).

Though all models in this multiple regression were found to be statistically significant in this multiple regression using an  $\alpha<.05$ , step one showed the greatest  $R^2$  and the greatest adjusted  $R^2$ . At various points in the six steps, MODERATE, HEALTHY, SELF RESPECT, RECIPROCATION OF FAVORS, PRESERVING MY PUBLIC IMAGE, and EQUALITY value items on the Schwartz Value Survey have significantly accounted for Mathematics Test Score Gains. In this analysis all six models have large effect sizes with the lowest R value of .57. (For further details see table 7 above.)

### Chapter Summary

It was found that there is no significant relationship between a teacher's ability to produce student test score gains in Reading and a teacher's ability to produce test score gains in Mathematics. Therefore a decision was made to assess reading score gains and mathematics score gains separately concerning their relationships to values.

After looking at descriptive statistics the average reading test score gains proved to have a positive skew with two outliers influencing this skew. Both outliers were removed for subsequent analyses. Average mathematics test score gain descriptive statistics indicated that these gains closely followed the normal bell curve. Measures of central tendency for both Mathematics and Reading test score gains gravitated towards zero, showing that the participants in the study are normalized close to the expected one year's worth of test score gain for the

students taught. The mean rating of value types indicated that the subjects in the study are not in agreement with the hypothetical sinusoid curve as developed in chapter two.

In the regression analyses, using average reading score gains as the dependent variable and the ten value types as independent variables it was found that none of the ten models had statistical significance.

In the regression analyses, using average mathematics score gains as the dependent variable and the ten value types as independent variables it was found that models five through nine are statistically significant. The strongest predictors of average mathematics test score gains in this regression are the value types of Universalism and Stimulation, which are negatively related to average mathematics test score gains. The best model in this regression is model seven, which includes negatively related value types of Universalism, Stimulation, and Conformity, and the positively related value type of Tradition.

In the regression analyses, using selected specific value items off of the Schwartz Value Survey as the independent variables and average test score gains as the dependent variables, all models were found to be statistically significant with large effect sizes.

In the regression that used average reading score gains as the dependent variable, models four and five hold the best possibility for generalizing from the sample with an adjusted R-square of .21. The survey items that were found to have significance in step five of the regression with a positive relationship to average test score gains were TRUE FRIENDSHIP (close, supportive friends), MODERATE (avoiding extremes of feeling & action), and SENSE OF BELONGING (feeling that others care about me).

In the regression that used average mathematics score gains as the dependent variable, model one held the best possibility for generalizing from the sample with an adjusted R-square

of .32. The survey item that was found to have significance in the different steps of the regression with a negative relationship to average test score gains was EQUALITY (equal opportunity for all). At various steps in the regression, five survey items are found to have statistically significant positive relationships with average test score gains. They are MODERATE (avoiding extremes of feeling & action), HEALTHY (not being sick physically or mentally), SELF RESPECT (belief in one's own worth), RECIPROCATION OF FAVORS (avoidance of indebtedness), and PRESERVING MY PUBLIC IMAGE (protecting my "face").

## Chapter 5 - Summary and Discussion of the Results

This final chapter restates the research question and reviews important methods used in the study. The major sections of this chapter summarize the results and discuss their implications.

### The Research Question Restated

This study has sought to answer the question: Is there a significant relationship between teacher-held basic motivational values as measured by the Schwartz Value Survey and student gains on state assessments?

The two null hypotheses state: 1) There is no significant relationship between teacher-held basic value scores as measured by the Schwartz Value Survey and student gains on state assessments. 2) There is no significant relationship between various combinations of teacher-held motivational values scores as measured by the Schwartz Value Survey and student gains on state assessments.

This study clearly rejects the first null hypothesis. A significant negative relationship was found between student mathematics test score gains and the teacher-held basic value type of Stimulation (“a set of goals centrally motivated by excitement, novelty, and challenges in life” [Schwartz, 2006, p. 1]). Also a significant negative relationship was found between student mathematics test score gains and their teacher-held basic value type of Universalism (“a set of goals centrally motivated by understanding, appreciation, tolerance, and protection for the welfare of all people and for nature” [Schwartz, 2006, p. 2]).

This study also clearly rejects the second null hypothesis. A combination of eleven value items from the Schwartz Value Survey were found to be statistically significant and accounted

for 32% of the student test score gains in reading. Another combination of eleven value items from the Schwartz Value Survey were found to be statistically significant and accounted for 43% of the student test score gains in mathematics.

### Important Methods Used

As explained earlier in this study, this is a correlational study using backward entry, multiple regression models to determine if the ten basic motivational values that Schwartz and Bilsky (1987, 1990) and Schwartz (1992, 2006) developed, as held by middle level teachers, are related to their students' average test score gains on reading and mathematics state assessments. Eighty-seven randomly chosen teachers of mathematics and reading participated in the study by completing the Schwartz Values Survey and by having their students' test scores matched. Teachers' ratings on the survey were centered by using their respective Mean Response to All Terms (MRAT) paired to value types and specific item scores. Through administrators, students' test scores were paired with their teachers. The Kansas State Department of Education cooperated with this study by providing the actual 2010 and 2011 test scores. All students' test score gains that were paired with their teachers were averaged, rendering each teachers' average student test score gain. With average test score gains paired to teachers' value ratings on both individual items and value type scores on the Schwartz Value Survey multiple regression analyses were run.

### Summary of the Results

This section of chapter five summarizes the results of the statistical tests of this study. First, a summary of the test that was run to determine if there is a significant relationship

between average math score gains and average reading score gains produced by teachers is discussed. Second, a summary of significant findings of descriptive statistics are discussed. Following is a discussion of the results of the regression analyses of test score gains and value types. Finally, there is a discussion of the results of the regression analyses of test score gains and their relationships to individual survey items.

#### *Regression Predicting Average Math Score Gains Using Average Reading Score Gains*

Of the 87 teachers in the study, 45 taught both reading and mathematics. Pairing the average reading and mathematics test score gains of these 45 teachers' students a regression was run to see if reading test score gains could be used to predict mathematics test score gains. No significant relationship was found between a teacher's ability to produce reading test score gains and a teacher's ability to produce mathematics test score gains. As a result, the average test score gains were disaggregated into average mathematics test score gains and average reading test score gains.

#### *Descriptive Statistics*

For the 87 subjects in the study, the descriptive statistics showed a fairly normal curve of reading test score gains after two outliers were removed. The descriptive statistics aligned very nicely with the "normal" curve in the average mathematics test score gains. The teachers in the study rated the Power Value Type lowest and the Benevolence Value Type the highest which would tend to fall in line with many of the philosophies of education as discussed in Chapter 2. However, the rest of the means of the teacher value types in the study were not aligned with the responses expected by any particular philosophy of education.

### *Relationship of Value Types to Average Reading Score Gains*

In the multiple regression analysis of the 64 teachers of reading, using value types as the independent variables and average reading score gains as the dependent variable, none of the models or stand-alone value types were found to be more statistically significant than using the mean in predicting average student reading score gains.

### *Relationship of Value Types to Average Mathematics Score Gains*

In the multiple regression analysis of the 66 teachers of mathematics, using value types as the independent variables and mathematics test score gains as the dependent variable, models five ( $p=.04$ ) through nine ( $p=.01$ ) were found to be significant models for predicting mathematics test score gains by using value types. The statistical significance of the models was found after removing value types of Benevolence, Achievement and Hedonism. Of the value types, Universalism and Stimulation were the strongest predictors of student mathematics score gains. Stimulation was found to be a significant predictor in models five ( $p=.02$ ) through nine ( $p=.02$ ), and Universalism was found to be a significant predictor in models six ( $p=.03$ ) through nine ( $p=.03$ ). Model seven, which included value types of Universalism ( $\beta=-.25$ ), Tradition ( $\beta=.14$ ), Conformity ( $\beta=-.19$ ) and Stimulation ( $\beta=-.28$ ) holds the greatest hope for generalizing to other populations (adjusted  $R^2=.13$ ). Model five, including teacher value types of Tradition ( $\beta=.20$ ), Stimulation ( $\beta=-.31$ ), Universalism ( $\beta=-.25$ ), Conformity ( $\beta=-.13$ ), Power ( $\beta=.09$ ), and Self-Direction ( $\beta=.16$ ) shows the largest mathematics test gain effect size on all of the statistically significant models in this multiple regression ( $R^2=.20$ ).



### *Relationship of Value Items to Average Reading Score Gains*

In the multiple regression analysis of the 64 teachers of reading (after removing the 2 outliers), selected specific survey items from the 57 items on the Schwartz Values Survey were used as independent variables, and average reading gains scores were used as the dependent variable. After individually testing each of the items in correlation to test score gains, eleven items that showed the most promise were used for this regression. The backward stepwise entry resulted in producing nine models, all of which proved to be significantly more accurate than the mean for predicting average reading test score gains when using an  $\alpha < .05$  (all  $ps < .026$ ). All models proved to have large effect sizes with Rs ranging from .57 for model one to .44 for model nine. Following are the eleven individual value items that were in this analysis:

SUCCESSFUL (achieving goals), OBEDIENT (dutiful, meeting obligations), TRUE FRIENDSHIP (close, supportive friends), UNITY WITH NATURE (fitting into nature), FAMILY SECURITY (safety for loved ones), MODERATE (avoiding extremes of feeling & action), SENSE OF BELONGING (feeling that others care about me), INNER HARMONY (at peace with myself), SELF-DISCIPLINE (self-restraint, resistance to temptation), POLITENESS (courtesy, good manners), INFLUENTIAL (having an impact on people and events). Items that were negatively correlated with average reading score gains were OBEDIENT, FAMILY SECURITY, INNER HARMONY, SELF-DISCIPLINE, POLITENESS, AND INFLUENTIAL. Items that were positively correlated with average reading score gains were SUCCESSFUL, TRUE FRIENDSHIP, UNITY WITH NATURE, MODERATE, and SENSE OF BELONGING.

Of the models in this multiple regression, models 4 and 5 had the most power to generalize (adjusted  $R^2 s = .21$ ) with a high level of significance ( $ps = .005; .006$ ). Model 5 had a large effect size ( $R = .54$ ) and had the ability to predict 29% of the average reading test score gains ( $R^2 = .29$ ).

Contained in model five were the value items of TRUE FRIENDSHIP, UNITY WITH NATURE, FAMILY SECURITY, MODERATE, SENSE OF BELONGING, INNER HARMONY, and POLITENESS. Of the items, TRUE FRIENDSHIP, MODERATE, and SENSE OF BELONGING were statistically significant within this model ( $ps=.002$ ;  $0.027$ ;  $0.047$  respectively). Gains in teacher ratings of these significant items were positive predictors of student reading test score gains: TRUE FRIENDSHIP ( $\beta=.38$ ); MODERATE ( $\beta=.27$ ); SENSE OF BELONGING ( $\beta=.23$ ).

#### *Relationship of Value Items to Average Mathematics Score Gains*

In the Multiple Regression analysis of the 66 teachers of mathematics, selected specific survey items from the 57 items on the Schwartz Values Survey were used as independent variables; and average mathematics gains scores were used as the dependent variable. After individually testing each of the items in the Schwartz Value Survey, the eleven items that showed the most promise were used for this regression. The backward stepwise entry resulted in producing six models, all of which proved to be significantly more accurate than the mean for predicting average reading test score gains when using an  $\alpha<.05$  (all  $ps<.002$ ). All models proved to have large effect sizes with Rs ranging from .66 for model one to .57 for model six. Following are the eleven individual value items in this analysis: SELF-DISCIPLINE (self-restraint, resistance to temptation), MODERATE (avoiding extremes of feeling and action), HEALTHY (not being sick physically or mentally), EQUALITY (equal opportunity for all), UNITY WITH NATURE (fitting into nature), SELF RESPECT (belief in one's own worth), WEALTH (material possessions, money), INNER HARMONY (at peace with myself), RECIPROCATING OF FAVORS (avoidance of indebtedness), PRESERVING MY PUBLIC IMAGE (protecting my "face"), and SUCCESSFUL (achievement of goals). Items that were

negatively correlated with average mathematics score gains were SELF-DISCIPLINE, EQUALITY, UNITY WITH NATURE, INNER HARMONY, and SUCCESSFUL. Items that were positively correlated with average mathematics score gains were MODERATE, HEALTHY, SELF RESPECT, WEALTH, RECIPROCATION OF FAVORS, and PRESERVING MY PUBLIC IMAGE.

Of the models in this multiple regression, model one had the most power to generalize (adjusted  $R^2 = .32$ ) with a high level of significance ( $p = .001$ ). This model had a large effect size ( $R = .66$ ) and the ability to predict 43% of the average mathematics test score gains ( $R^2 = .43$ ). Contained in model one are all of the value items in this multiple regression.

However, only the following items within this model were statistically significant: The MODERATE (avoiding extremes of feeling and action) item within this model had a teacher gain of 1 standard deviation for every 0.24 standard deviation gains in student average mathematics test scores ( $\beta = .24$ ) and this statistic was significant ( $p = .04$ ). The HEALTHY (not being sick physically or mentally) item within this model had a gain in teacher ratings of 1 standard deviation for every 0.30 standard deviations of student average mathematics test score gains ( $\beta = .30$ ) and this statistic was found to be significant ( $p = .01$ ). The SELF RESPECT (belief in one's own worth) item within this model showed that a teacher rating gain of one standard deviation predicted average student mathematics test gains of 0.24 standard deviations ( $\beta = .24$ ) and this statistic was significant ( $p = .03$ ). The RECIPROCATION OF FAVORS (avoidance of indebtedness) item within this model had one teacher rating gain of a standard deviation for every 0.26 standard deviations of gain in student average mathematics test scores ( $\beta = .26$ ) and this statistic was found to be significant ( $p = .04$ ).

In models five and six of this multiple regression, the EQUALITY (equal opportunity for all) value item made a statistically significant contribution as a negatively correlated predictor of mathematics test score gains. In various models within this multiple regression, MODERATE (avoiding extremes of feeling and action), HEALTHY (not being sick physically or mentally), SELF RESPECT (belief in one's own worth), RECIPROCATION OF FAVORS (avoidance of indebtedness), and PRESERVING MY PUBLIC IMAGE (protecting my "face") value items made statistically significant contributions as positively correlated predictors of mathematics test score gains.

#### Why Models of Individual Value Items More Clearly Correlate to Teaching than do Value Types

This section of the paper explains the reasoning behind using value items from the Schwartz Value Survey and why they are more powerful predictors of teacher effectiveness than value types.

In developing the Schwartz Values Survey (Schwartz & Bilsky 1987, 1990; Schwartz 1992), the Guttman Lingoes Smallest Space Analysis was used to arrange value items according to their correlations to one another. This system arranged items according to their relationships with negatively related items opposite one another and positively related items close to one another according to their strengths of relationship. Schwartz used large sample sizes to determine how humans around the globe generally related these items to one another. Once spaces for items were established, Schwartz then categorized items by common themes (types) according to their positions and then defined these categories by giving them broad-based names, thereby establishing his value types. Since types are dependent on the placement of items by large heterogeneous groups, groupings may look different when smaller homogeneous

populations such as Kansas 4<sup>th</sup> through 8<sup>th</sup> grade teachers of reading and mathematics are used. For example, Schwartz (1992) discovered that teacher values as a whole did not generally follow the exact pattern of relationships with one another as did student values.

Thirty of the fifty-seven items on the Schwartz Values Survey come directly from the Rokeach (1973, 1979) value survey, which did not have value type categories but merely consisted of the rankings of individual value items. Therefore, it is a legitimate use of these items to evaluate them individually as they relate to other variables such as student mathematics test score gains and student reading test score gains.

Since using value item types on the Schwartz Values Survey are derived from an average score of multiple value items, these types represent broad value orientations toward life. Student test scores are specific to course subject content requiring specific teaching and learning behaviors which may not relate well to large, broad-based value types. Therefore, it should not be a surprise to find that alternative groupings of individual items from the Schwartz Values Survey would better predict student test score gains.

## Discussion of the Results

In this section of chapter five, findings are interpreted, the relationship of this study to material in chapter two is discussed, recommendations for educators are made, and suggestions for further research are provided.

### *Interpretation of Findings*

In this section, the findings are interpreted in light of their support or lack of support for the hypotheses. More specific items of discussion take place concerning the value models that

were found to relate to test score gains by subject area. Also discussed are teacher value types as predictors of student test gains and teacher value item models as predictors of student test score gains. The value means from the descriptive statistics are used to compare them to the expected curve derived from educational philosophy.

### *Support of the Hypothesis*

Even though no significant relationships were found between reading test score gains and teacher-held value types, a significant relationship was found between reading test score gains and a combination of specific value items. The extent of this relationship is such that a set of values can account for up to 32% of reading test score gains, thereby discounting the null hypotheses.

### *The Relational Teacher Value Type*

The model that is discussed in the next paragraph was chosen because it is most likely to transfer to populations of teachers outside of the sample studied. The author has labeled this chosen model as Relational Teacher Value Type, taking into account two of the three significant and most positive value items in the model.

The first three items listed in the chosen model are negatively related to test score gains, meaning that the lower the teacher rated these items the better the student's reading scores were. These three items did not hold a high level of significance within this model. They were POLITENESS (courtesy, good manners), INNER HARMONY (at peace with myself), and FAMILY SECURITY (safety for loved ones). One value item in the Relational Teacher Value Type model was positively related to student reading test score gains but was not found to be statistically significant within that model. The higher the rating of this value item the higher the student test scores were. This item was UNITY WITH NATURE (fitting into nature).

The items that give the Relational Teacher Value Type its name are positively related to reading test score gains, are statistically significant within the model, and are discussed in the following paragraphs with value types as headings:

*True friendship (close supportive friends).* Of all of the teacher-held value items, this is the most powerful predictor of student reading test score gains. It is believed that this is true for the following reasons: First, a teacher who highly values true friendship will likely develop a support network that will allow the teacher ample opportunity for collaboration regarding the challenges of teaching reading. This is supported by Charlotte Danielson (2007) under her component 4d, “Participating in a Professional Community” concerning “Relationships with colleagues” (p. 103).

Second, a teacher that highly values close, supportive friends will be concerned that each student in the class is also supported by friends as group learning activities are formed. Building reading support networks is important for mid-level students who tend to be self-conscious and may be tempted to feel inferior or superior due to their level of reading comprehension.

Marzano, Pickering & Pollock (2001), reporting on research and theory of cooperative learning, point to five defining characteristics of successful cooperative learning groups. Three of the five characteristics focus on friendship: “Positive Interdependence,” “Face-to-face promotive interaction,” and “Interpersonal and small group skills” (pp. 85, 86).

Third, the teacher who highly values true friends will also be concerned with building supportive, positive, and professional relationships with students. Teachers who build these types of relationships are trusted by students because they sense that they are safe from unhealthy relationships between teacher and student and that they are cared for. This type of relationship frees the child to learn. This is supported by multiple sources: Noddings (2005), McBer (2002),

Danielson (2007), Lovat & Toomey (2009), and Strahan (2008). Nel Noddings supports this type of thinking in chapter seven where she discusses caring for the inner circle. McBer describes the 16<sup>th</sup> characteristic of effective teachers: “Understanding Others –the drive and ability to understand others and why they behave as they do” (p.66). Danielson describes the “Distinguished” level of teacher interaction with students as “Teacher interaction with students reflect genuine respect and caring for individuals as well as groups of students. Students appear to trust the teacher with sensitive information” (p.66). On the list of nine Australian core values is “Care and Compassion & Care for Self and Others” (Lovat & Toomey, p. xiv). Strahan indicated that under-performing students gain academic momentum when the teacher uses discovery talk, delivers help for academic and personal problems and listens as a friend to students’ personal issues; all characteristics of true friendship.

*Sense of belonging (feeling that others care about me).* Of all of the teacher-held value items, this item is the third most powerful predictor of student reading test score gains. It is believed that this is true for these reasons: First, teachers who have a high priority on feeling that others care about them will attempt to develop relationships with students where students care about the teacher (Noddings, 2005). When students care about their teacher, they would naturally be motivated to learn about what the teacher cares about. This could include the tastes that the teacher has in selecting reading materials for the student. This would also include a desire to make attempts at the reading strategies that the teacher would promote. Second, teachers who place a high value on a sense of belonging would naturally place a high value on making sure that each student feels that she/he is cared for in the classroom. Students’ sense of belonging and being cared for creates a climate in the classroom where each student is valued,



regardless of reading ability. This allows students to gain momentum as they are free to practice their developing reading skills with confidence (Strahan, 2008).

#### *Further Support of the Hypothesis*

Significant negative relationships were found between mathematics test score gains and two teacher-held value types. The lower the teacher rated these types the higher the students' test scores, thereby discounting the null hypotheses. A discussion of these teacher value types and their relationships to student mathematics test score gains follows.

An increase in a teacher's value rating of Stimulation type values, (defined as a set of goals centrally motivated by excitement, novelty, and challenges in life [Schwartz, 2006, p. 1]) predicts a decrease in student math score gains. A teacher who is highly motivated by excitement and novelty will negatively impact student mathematics learning gains for the following reasons: First, since the focus of mathematics is logical reasoning, it makes sense that the illogical seeking of thrills by the teacher could become a major distraction for students who are probably in the midst of struggling to work through difficult equations. Second, the mathematics teacher who is distracted by what is novel and stimulating may get caught in sharing stimulating and interesting information with students instead of finding ways to get students to learn mathematics.

An increase in a teacher's value rating of Universalism type values (defined as a set of goals centrally motivated by understanding, appreciation, tolerance, and protection for the welfare of all people and for nature [Schwartz, 2006, p. 2]) predicts a decrease in student math score gains. Since mathematics is about logic and the solving of physical problems, it would make sense that a high sense of need on the part of the teacher to focus on social issues as implied by Universalism values would tend to distract the teacher, and perhaps the students, from

productive teaching and learning of mathematical concepts and skills. The teacher's desire to focus on the topic at hand communicates to students the importance of what is being taught, and universalism values have little to do with mathematics.

#### *More Support for the Hypothesis*

A significant relationship was found between mathematics test score gains and a combination of specific value items. The extent of this relationship is such that a set of values can account for up to 43% of mathematics test score gains, thereby discounting the null hypotheses.

#### *The Concern for Well-being Teacher Value Type*

The model that is discussed in the next paragraph was chosen because it is most likely to transfer to populations of teachers outside of the sample studied. The author has labeled this chosen model, Concern for Well-being Teacher Value Type. This label focuses on three of the four significant and most positive value items within the model.

The first five items listed in the chosen model are negatively related to test score gains, meaning that the lower the teacher rated these items the better the student's mathematics scores were. These five items did not hold a high level of significance within this model. They were SUCCESSFUL (achieving goals), UNITY WITH NATURE (fitting into nature), EQUALITY (equal opportunity for all), INNER HARMONY (at peace with myself), and SELF-DISCIPLINE (self-restraint, resistance to temptation). Two value items in the Well-being Teacher Value Type model were positively related to student mathematics test score gains, meaning that the higher the rating of these value items the higher the student test scores were. These two items were not highly significant within this model. These items were WEALTH (material possessions, money) and PRESERVING MY PUBLIC IMAGE (protecting my "face").

The items that give the Concern for Well-being Teacher Value Type its name are discussed below:

*Healthy (not being sick physically or mentally).* I propose the following four reasons as to why an increase in the teacher value HEALTHY predicts a positive increase in students' mathematics test scores. First, there is a connection between classroom environment and mental health and student learning as demonstrated by Milkie and Warner (2011). Math teachers who are concerned for their students' health would naturally wish to create an environment clear of causes for mental and physical health issues. Second, teachers who take better care of their own health will tend not to be absent due to illness. This lack of absenteeism may help avoid the disruption of the learning process that occurs when a teacher is absent. Ehrenberg, Ehrenberg, Rees, & Ehrenberg (1989) reported that teacher absenteeism negatively impacts student test scores. Teacher absence due to illness is particularly important in mathematics where one lesson builds on one another. Third, teachers that highly value health would also value the health of their students. A teacher with health as a high priority would be careful to make sure that students would not miss valuable lessons, forfeiting the learning necessary as one concept builds upon another in the typical mathematics class. For example Krenitsky-Korn (2011) states that "students with asthma were absent more frequently," and "scored lower in mathematics" than "their peers without asthma" (p. 61). Fourth, teachers of mathematics that highly value the health of their students, understand that well-rested and healthy student minds are able to think more logically and clearly in selecting appropriate processes for problem solving. This concern for mental and physical health can be reflected by Margolis (2005) as he describes the difficulty of prescribing homework for students who are struggling mentally after a weary day at school (p.

5). Fifth, health applications integrated into mathematics is related to an increase in student learning (Shore, Shore, & Boggs, 2004).

*Reciprocation of favors (avoidance of indebtedness).* Three reasons are given to explain the possible connection between the teacher value of Reciprocation of Favors and student test score gains in mathematics. First, effective mathematics teachers are concerned for balancing the equation of kind acts. These teachers would tend to place a high priority on keeping on top of relationships that take advantage of another's kind acts. For example, this value would tend to make group learning in the mathematics class focus on equitable contributions from all members of the group, thereby insuring that each group member avoids a sense of dependence or indebtedness toward another for learning. Marzano, Pickering & Pollock (2001) concur when talking about group accountability: "Individual and Group Accountability (each of us has to contribute to the group achieving its goals)" (p. 85). McBer('s) (2000) effective teacher characteristics would support this with the characteristic of "Creating Trust – Being consistent and fair. Keeping one's word" (p. 40). McBer also describes a second characteristic that supports such a conclusion: "Holding People Accountable – The drive and ability to set clear expectations and parameters and to hold others accountable for their performance" (p. 56). This is consistent with the Australian National Value of "Fair Go" meaning to "Pursue and protect the common good where all people are treated fairly for a just society" (Lovat & Toomey, 2009, p. xiv). Second, this desire to owe no favor to anyone would tend to drive the mathematics teacher to expect a high return from students for the investment that the teacher makes in each student's learning because they "owe" it to the teacher. In turn, the students' efforts would increase the teacher's sense of indebtedness to students and drive the teacher to increase efforts to help students learn. McBer describes one of the teacher characteristics as having a similar focus:

“Drive for improvement – Relentless energy for setting and meeting challenging targets, for pupils and the school” (p. 48). Third, a high sense of the importance of reciprocating favors would also tend to motivate the mathematics teacher to create a kind classroom environment. In such a class, where students would be encouraged to respond to each other with acts of kindness, a pleasant classroom climate is likely. This would be reflected in the Australian Core Value of “Respect – Treat others with consideration and regard, respect another person’s point of view” (Lovat & Toomey, 2009 p. xiv). With this type of value driving the teacher, everyone’s sense of well-being is enhanced.

*Self-respect (belief in one’s own worth)*. The following three reasons are why the teacher-held value of self-respect predicts an increase in mathematics test score gains: First, teachers that place a high value on their own worth are not easily damaged by ridicule, insult, or the hyperbole that upper elementary and mid-level students are capable of delivering. The teacher’s sense of worth (well-being) is too highly valued to allow it to be damaged. Second, teachers that believe in themselves, face the classroom and the material that they teach with confidence. McBer (2000) sites “Confidence, the belief in one’s ability to be effective and to take on challenges” (p. 38) as one of the characteristics of being an effective teacher. They come at the mathematical concepts to be taught with the self-respect that demands that they are prepared to demonstrate concepts in a way that makes sense to each student. Teachers come to class with the confidence that they can find a way to help each student learn. Third, teachers who highly value self-respect believe that this is a value worth instilling in students in order to bring about the confidence in them that they, too, can solve whatever problem they encounter. Math teachers with this value refuse to believe that their students aren’t worth it. These teachers persist in trying to convince students to think of themselves as worthwhile. McBer describes this characteristic as “Passion

for Learning – The drive and ability to support pupils in their learning, and to help them become confident and independent learners” (p. 60). Without a doubt, a high sense of self-worth gives each person a sense of well-being.

*A Teacher Value Item that Positively Predicts Student Test Score Gains in Both Reading and Mathematics.*

In both the prior reading and mathematics models, the increase in the teacher value rating of MODERATE (avoiding extremes of feeling and action) positively and significantly accounts for student test score gains. Two probable reasons for this relationship are as follows: First, in classrooms full of “tweens” and early teens when hormones begin to wash the brain, mood swings, and drama are common. A teacher who values the avoidance of these extremes will not allow these swings to affect their own feelings and actions. This value would enhance the teacher’s ability to be a stabilizing force in students’ lives. The teacher who highly values moderation, provides a mature voice in the midst of immaturity. Secondly, the teacher who values moderation would also be a calming force in the classroom, creating an environment in which students are free to concentrate on learning.

*Different Values for Success in Different Subject Areas*

As can be seen from the value items and types presented previously, with the exception of the value item MODERATE, different teacher values are important for student success in reading than are important for student success in mathematics. Figures three and four further illustrate these differences. In figure 5.1, all of the value items in the Relational Teacher Value Type are placed on the value wheel used in figure 2.1. As can be seen, all of the value items are on the right half of the wheel which are self-transcendent values and conservation values. These value items all seem to have something to do with relationships and the conserving of

relationships. This leads to the affirmation that aspects of teachers' values about relationships can positively or negatively impact student reading gains.

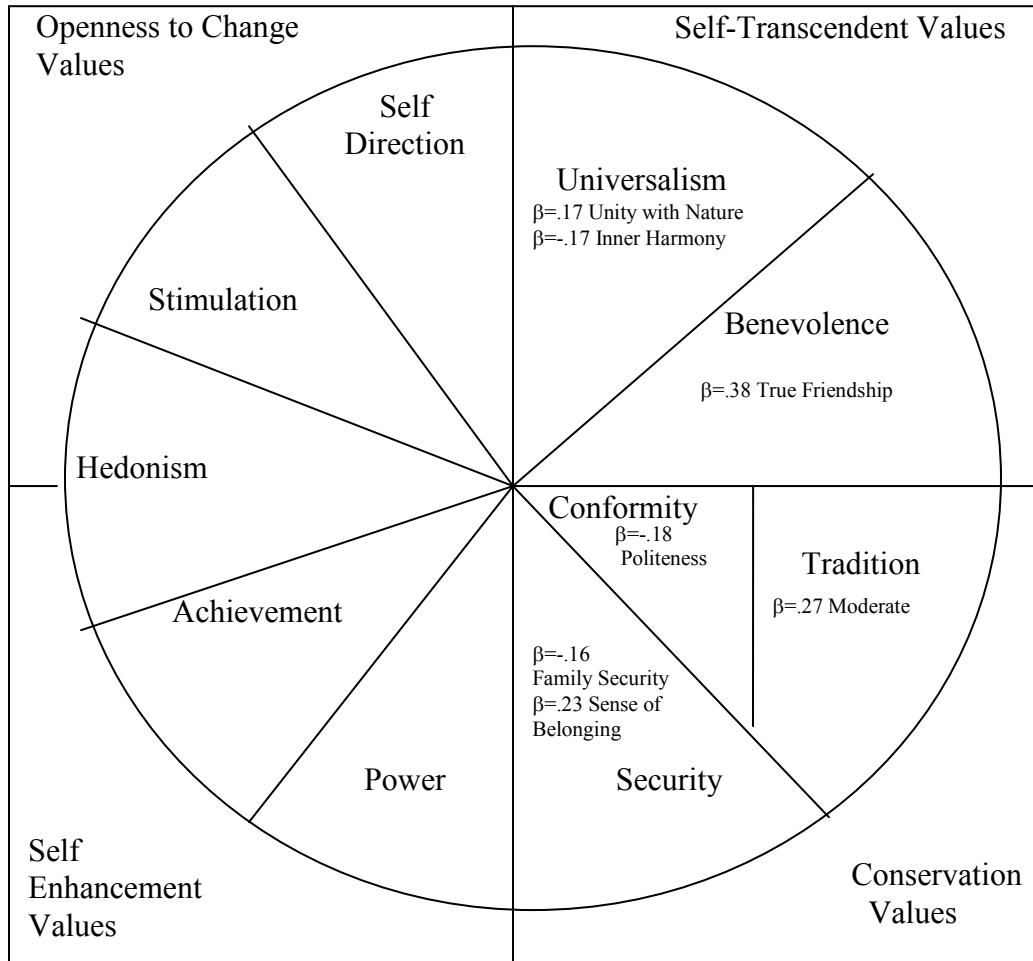


Figure 5.1 Reading value items from model 5 on value structure circle from Schwartz (1992) and Roccas, Sagiv, Schwartz, and Knafo (2002) used by permission from Schwartz, January 2, 2013.

Figure 5.2 uses the specific value items from the Concern for Well-Being Value Type. Accounting for student test score gains in mathematics are value items and value types from all areas of the wheel with the exception of the Hedonism and Benevolence segments of the chart. However, with the exception of the value item of SELF-RESPECT, all positively related teacher

value items lie in the three adjoining value types of power, security, and tradition. Though the value item of SELF-RESPECT seems to lie in opposition to these value types, its smallest space is so close to the center of all of the value type spaces (Schwartz 1992) that it is not used in scoring value types on the Schwartz Values Survey (see appendix G). This pattern and the nature of the values items has led the writer to believe that a complimentary set of well-being values on the part of a mathematics teacher will account for greater student learning gains.

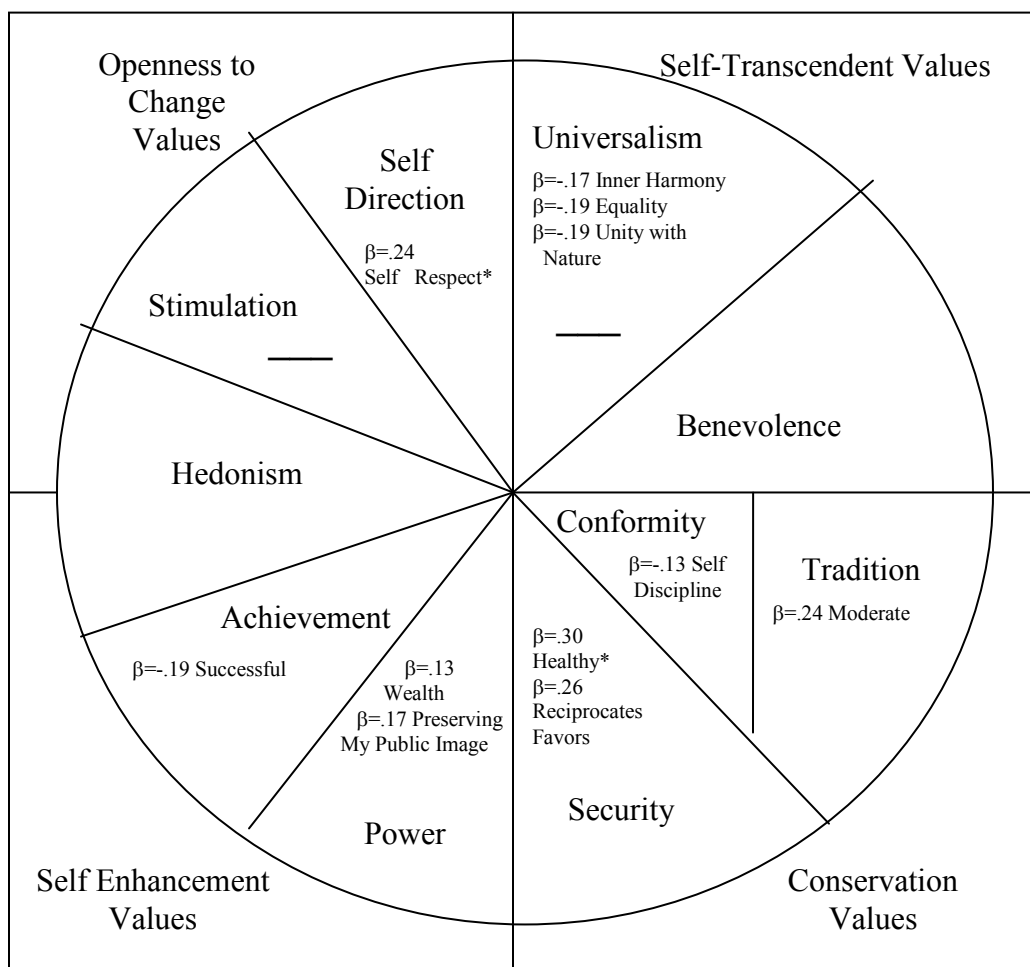


Figure 5.2 Math value items from model one on value structure circle from Schwartz (1992) and Roccas, Sagiv, Schwartz, and Knafo (2002) used by permission from Schwartz, January 2, 2013. \*Self-Respect and Healthy are so close to dividing lines on the values wheel that they are not scored to discern value type scores on the SVS.



This study demonstrates, with the exception of MODERATE, that teacher values are related to student test score gains differently in mathematics than they are related in reading.

*Teacher Values in the Context of Standards Based Education*

In the context of standards based education with high stakes tests, teachers' basic motivational values play an important role in the ability of students to raise their test scores from year to year with up to 43% of the rise in students' mathematics test scores and up to 32% of the rise in students' reading test scores being accounted for by teachers' ratings of specific values on the Schwartz Values Survey. Unusual in this context is that, according to the descriptive statistics, the highly rated value types by the teachers in this study are not necessarily the values that produce the biggest gains. While specific values from within the value types of Power, Security and Tradition produced the biggest gains in mathematics, Power was given the lowest rating by teachers in the study. Tradition was also given a below average rating and Security was given only an average rating. Though specific values from within the value types of Benevolence, Tradition, and Security produced the biggest gains in reading, both Tradition and Security are given below average ratings, as the descriptive statistics show. However, Benevolence is given the highest rating by the teachers in the study and one of its value items, TRUE FRIENDSHIP, does relate positively to reading score gains. Therefore this study demonstrates that in the present standards based climate, the most commonly held values of teachers do not generally agree with the values that produce the biggest gains in reading and mathematics test scores. This may explain why many teachers are not as successful as desired in raising their students' scores to the standards.

### *Relationship of the Current Study to Philosophic Viewpoints*

In chapter two of this study the writer built an expected curve based on the values promoted by various active philosophies of education. This expected outcome is now compared to the findings of the study.

#### *The Average Teacher Response and the Expected Sinusoid Curve*

Figure 5.3 compares the average teacher response to each of the Schwartz Value Types scores with the expected sinusoid curve.

As can be seen from figure 5.3, outside of the value types of Benevolence and Power there is little agreement between the average ratings of teachers in the study with the values generally expected by modern philosophers. This indicates that there is limited agreement among the teachers in the study with the writer's summary of philosophical viewpoints. However, the values extracted from the writings of Bestor (1985) (Essentialist) and Hutchins (1964) (Perennialist) are in more agreement with the mean responses of the subjects (See Appendix B). This would make sense in an environment that focuses on "essential" standards with accompanying assessments. In other words, this sample of teachers seems to have bought into the essentialist/perennialist position. However, the question remains, which philosopher's perspective supports test score gains?

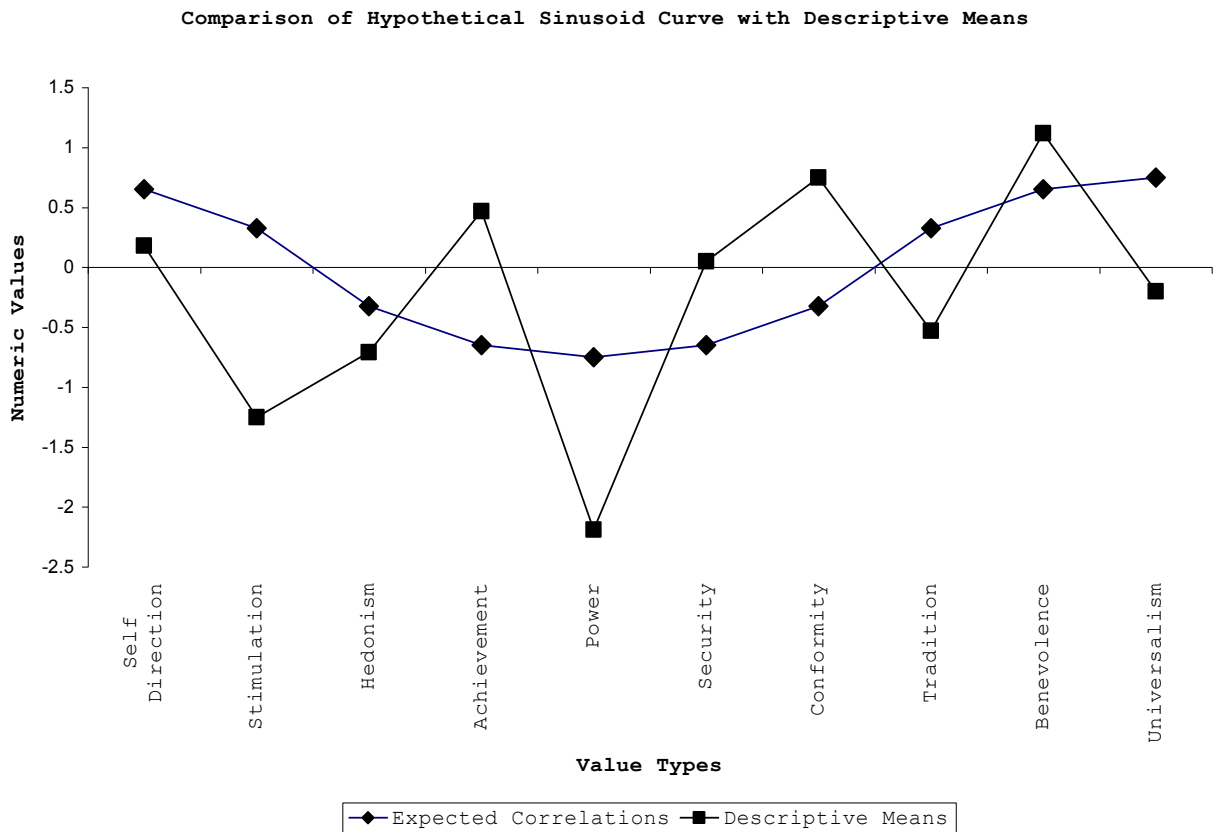


Figure 5.3 Hypothesized sinusoid curve compared with the mean responses of the subjects.

*The Regression Results and the Expected Sinusoid Curve*

Figure 5.4 compares the value types connected with reading test score gains and the expected sinusoid curve. A note of caution should be noted with this comparison because none of the value types had a large enough effect size to be considered statistically significant as a stand alone variable. Also it should be noted that none of the value type models was considered statistically significant in the multiple regression in this figure.

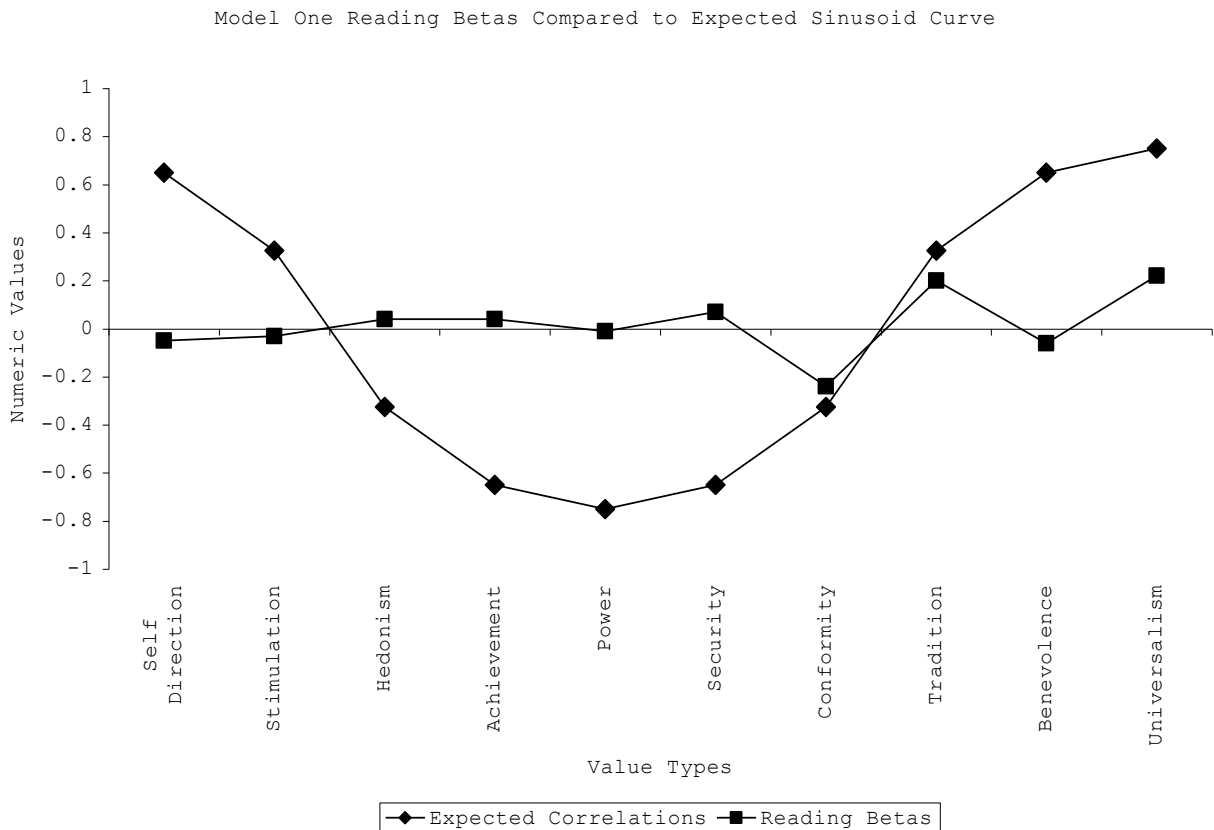


Figure 5.4 Hypothesized sinusoid curve compared to reading betas on value types

Though the first glance at figure 5.4 would seem to show that values of Conformity and Tradition closely match with the curve and show some hope of approaching the normal curve, none of the effect sizes are significant and as a result can show no support for any of the philosophical positions. The value types with the largest positive effect sizes on reading test score gains are Tradition and Universalism, which most closely align with the views of Hutchins (See Appendix B). However, none of the rest of the values types can be discerned to support the values gleaned from Hutchins (1964).

Figure 5.5 compares the values types connected with mathematics test score gains and the expected sinusoid curve.

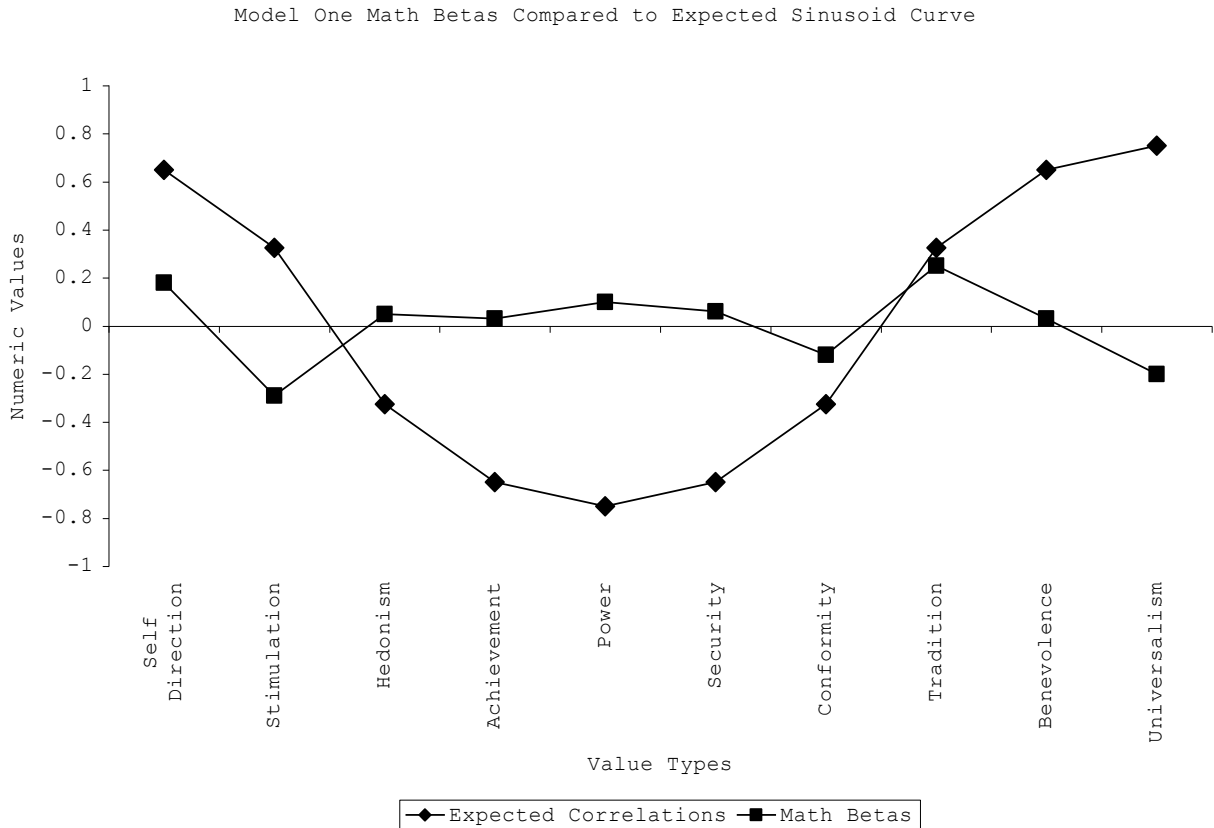


Figure 5.5 Hypothesized sinusoid curve compared to math betas on value types.

Within the multiple regressions only the teacher held value types of Stimulation and Universalism proved to be statistically significant in predicting mathematics test score gains. The higher both of these teacher value types are, the lower the mathematics test score gains. None of the philosophers support Stimulation as a desired value type (See Appendix B), and only Skinner (1948) and Bestor (1984) fail to support Universalism as an important educational value. Though not statistically significant, Tradition and Self-Direction show some promise as teacher value types that support mathematics test score gains. Neither Tradition nor Self-Direction are value types that would be supported by essentialist philosophy (See Appendix B). Therefore,

with caution, it could be said that none of the present philosophies of education are supported by this research.

### *Summary of Findings*

The most powerful findings of this study were as follows: First, teacher values can account for 43% of student test score gains in mathematics and can account for 32% of student test score gains in reading. Sanders and Horn (1998) claim that teacher effectiveness is the major factor in student test score gains. This implies that the teacher is responsible for over 50% of student improvement from one test to another. When taking Sanders and Horn's claim into account, this values study shows that teachers' values are likely the major factor when it comes to teacher effectiveness in producing reading and mathematics test score gains.

Secondly, teacher value sets for producing test score gains differ from one subject to another. Teachers' positive effect on students' reading test score gains are concerned with a set of values focused on meaningful relationships. However, with mathematics, teachers' positive effect on student gains flow out of a values set concerned with individual well-being.

Lastly, the students' improvement in both reading and mathematics tests is positively related to the teacher who highly values the avoidance of extremes in feeling and action.

### *Suggestions for Additional Research*

Since only medium to large effect sizes could be established as statistically significant in this study, further studies need to be done to more finely tune the connection between value items and types with student learning. One way to do this would be to run similar studies in states where a value-added system of teacher effectiveness has been in place for a longer period of time (such as has been done in Tennessee, Florida, Louisiana, and Dallas, Texas) so that student test score gains for multiple years of teaching could be used to more accurately identify

teachers who effectively and consistently raise all students' test scores. Another way to do this would be to conduct similar studies with larger sample sizes.

Further research would also be useful in that accurate scoring formulas could be produced for the Schwartz Value Survey that could become powerful instruments for predicting student learning gains in the various subject areas. As standards and assessments and cultures change, new studies may need to be done to update the change in teacher values needed to predict learning gains.

As a result of this study I would also suggest that qualitative follow-up studies be done with smaller groups of teachers that have been identified as being highly successful in raising student test score gains over multiple years (based on value-added results). The purpose of these studies could be to collect information on what these teachers value, what their beliefs are concerning students, and what their motivational beliefs are concerning the teaching of their subject areas.

This study demonstrates that teacher values need more attention concerning their relationships to student learning. When it comes to teachers' abilities to impact student learning, teachers' personal values constitute a substantial piece of the puzzle that makes great teachers.

## References

- Adler, M. J. (1998). *The paideia proposal: An educational manifesto*. New York, NY: Simon & Schuster.
- Bai, H., & Ertmer, P. (2008). Teacher educators' beliefs and technology uses as predictors of preservice teachers' beliefs and technology attitudes. *Journal of Technology and Teacher Education, 16*, 93-113.
- Bardi, A., & Schwartz, S. H. (2003). Values and behavior: Strength and structure of relations. *Personality and Social Psychology Bulletin, 29*, 1207-1222. doi:10.1177/0146167203254602
- Bestor, A. (1985). *Educational wastelands: The retreat from learning in our public schools* (2nd ed.). Urbana and Chicago, IL: University of Illinois Press.
- Bilsky, W., & Koch, M. (2007). In *The content and structure of values: Universals or methodological artifacts?* Retrieved from University of Muenster Web site: [http://miami.uni-muenster.de/servlets/DerivateServlet/Derivate-1802/Bilsky\\_Koch.pdf](http://miami.uni-muenster.de/servlets/DerivateServlet/Derivate-1802/Bilsky_Koch.pdf)
- Brameld, T. (2000). *Education as power*. San Francisco, CA: Caddo Gap Press. (Original work published 1965)
- Braun, H., Chudowsky, N., & Koenig, J. (2010). *Getting value out of value-added: Report of a workshop*. Retrieved from <http://www.nap.edu/catalog/12820.html>
- Braun, H. I. (2005, September). *Using student progress to evaluate teachers: A primer on value-added models*. Retrieved from <http://www.ets.org/Media/Research/pdf/PICVAM.pdf>
- Campbell, R. J., Kyriakides, L., Muijs, R. D., & Robinson, W. (2004). Effective teaching and values: Some implications for research and teacher appraisal. *Oxford Review of Education, 30*, 451-456. doi:10.1080/0305498042000303955
- Carter, P. J. (2008). *Defining teacher quality: An examination of the relationship between measures of teachers' instructional behaviors and measures of their students' academic progress*. (Unpublished doctoral dissertation). University of North Carolina, NC.
- Chapman, J., Cahill, S., & Holdsworth, R. (2009). Student action teams, values education and quality teaching and learning -- case study from the Manningham Cluster, Victoria. In T. Lovat & R. Toomey (Eds.), *Values education and quality teaching: the double helix effect* (pp. 27-43). Breinigsville, PA: Springer Science+Business Media B.V.
- Clement, N. (2009). Perspectives from research and practice in values education. In T. Lovat & R. Toomey (Eds.), *Values Education and Quality Teaching: the Double Helix Effect* (pp. 13-25). Breinigsville, PA: Springer Science+Business Media B.V.



- Council of Chief State School Officers. (2010, July). *Interstate teacher assessment and support consortium (InTASC) model core teaching standards: A resource for state dialogue (Draft for public comment)*. Retrieved from [http://www.ccsso.org/Documents/2010/Model\\_Core\\_Teaching\\_Standards\\_DRAFT\\_FOR\\_PUBLIC\\_COMMENT\\_2010.pdf](http://www.ccsso.org/Documents/2010/Model_Core_Teaching_Standards_DRAFT_FOR_PUBLIC_COMMENT_2010.pdf)
- Danielson, C. (2007). *Enhancing professional practice: A framework for teaching* (2nd ed.). Alexandria, VA: Association for Supervision and Curriculum Development.
- Darling-Hammond, L. (2000). Teacher quality and student achievement. *Education Policy Archives*, 8, 1-44. Retrieved from <http://epaa.asu.edu/ojs/article/view/392/515>
- Darling-Hammond, L., & Ducommun, C. E. (2007). Recognizing and enhancing teacher effectiveness: A policymaker's guide. In L. Darling-Hammond & C. D. Prince (Eds.), *Strengthening teacher quality in high-need schools- policy and practice* (pp. 1-26). Retrieved from <http://www.policyarchive.org/handle/10207/bitstreams/96324.pdf#page=7>
- Dewey, J. (1897). *My pedagogical creed*. Retrieved from <http://www.rjgeib.com/biography/credo/dewey.html>
- Dewey, J. (1938). *Experience and education*. New York, NY: Kappa Delta Pi.
- Dillman, D., Smyth, J & Christian, M. (2009). *Internet, mail, and mixed-mode surveys: The tailored design method* (3<sup>rd</sup> ed.). Hoboken, NJ; John Wiley & Sons, Inc.
- Ehrenberg, R. G., Ehrenberg, R. A., Rees, D. I., & Ehrenberg, E. L. (1991). School district leave policies, teacher absenteeism, and student achievement. *The Journal of Human Resources*, (26), 72-105
- Feather, N. T., & Rauter, K. A. (2004). Organizational citizenship behaviours in relation to job status, job insecurity, organizational commitment and identification, job satisfaction and work values. *Journal of Occupational and Organizational Psychology*, (77), 81-94. Retrieved from <http://www.bps.org.uk>
- Field, A.(2005). *Discovering statistics using spss* (2nd ed.). Thousand Oaks, CA: SAGE Publications Inc.
- Freire, P. (2000). *Pedagogy of the Oppressed* (M. B. Ramos, Trans.). New York, NY: Continuum. (Original work published 1970)
- Gates foundation: Teachers trump class size. (2009, May 29). *E-School News*. Retrieved from <http://www.eschoolnews.com/2009/05/29/gates-foundation-teachers-trump-class-size/>

- Hawkes, N. (2009). Values and quality teaching at west kidlington primary school. In T. Lovat & R. Toomey (Eds.), *Values education and quality teaching: the double helix effect* (pp. 105-120). Breinigsville, PA: Springer Science+Business Media B.V.
- Hill, A., & Vick, M. (2009). Moving values beyond the half hour: Peer leadership and school vision -- a case study of the townsville cluster, Queensland. In L. Lovat & R. Toomey (Eds.), *Values education and quality teaching: the double helix effect* (pp. 63-82). Breinigsville, PA: Springer Science+Business Media B.V.
- Hutchins, R. M. (1964). *The university of utopia* (2nd ed.). Chicago, IL: University of Chicago Press.
- Interkulturelle Management-Und Organisationsberatung. (n.d.). *Schwartz value survey: Background*. Retrieved from [http://www.imo-international.de/index\\_englisch.htm?englisch/html/svs\\_info\\_en.htm](http://www.imo-international.de/index_englisch.htm?englisch/html/svs_info_en.htm)
- Kansas Education Resource Center. (n.d.). *KERC: Kansas education resource center*. Retrieved from <http://www.kerc-ks.org>
- Kansas State Department of Education. (n.d.). *Assessed standards*. retrieved from <http://ksde.org>
- Kansas State Department of Education. (2010, August). *Kansas reading assessment fact sheet and Kansas mathematics assessment fact sheet*. Retrieved from <http://www.ksde.org/Default.aspx?tabid=2364>
- Krathwohl, D. R., Bloom, B. S., & Masia, B. B. (1964). *Taxonomy of educational objectives, the classification of educational goals: Handbook II: Affective Domain*. New York, NY: Longman.
- Krenitsky-Korn, S. (2011). *High school students with asthma: Attitudes about school health, absenteeism, and its impact on academic achievement*. Pediatric Nursing. (37) 61-68
- Lappan, G., Fitzgerald, W., Phillips, E., Winter, M. J., Lanier, P., Madsen-Nason, A., et al. (1988). *The middle grades mathematics project. the challenge: Good mathematics--taught well*. Paper presented to the National Science Foundation for Grant #MDRE318218), East Lansing, MI.
- Lee, J. A., & Soutar, G. (2010). Is Schwartz's value survey an interval scale, and does it really matter? *Journal of Cross-Cultural Psychology*, 41, 76-86.  
doi:10.1177/0022022109348920
- Lemov, D. (2010). *Teach like a champion: 49 techniques that put students on the path to college*. San Francisco, CA: Jossey-Bass.

- Lovat, T. (2009). Values education and quality teaching: Two sides of the learning coin. In T. Lovat & R. Toomey (Eds.), *Values education and quality teaching: the double helix effect* (pp. 1-11). Breinigsville, PA: Springer Science+Business Media B.V.
- Lovat, T., & Toomey, R. (Eds.). (2009). *Values education and quality teaching: the double helix effect*.
- Macmullin, C., & Scalfino, L. (2009). Placing values at the centre of school policy and classroom practice -- a case study of Modbury School, South Australia. In T. Lovat & R. Toomey (Eds.), *Values education and quality teaching: the double helix effect* (pp. 45-62). Breinigsville, PA: Springer Science+Business Media B.V.
- Margolis, H. (2005). *Resolving struggling learners' homework difficulties: Working with elementary school learners and parents*. Preventing School failure. (50) 5-12
- Markley, T. (n.d.). *Defining the effective teacher: Current arguments in education*. Retrieved from University of South Carolina: <http://www.usca.edu/essays/vol112004/markey.pdf>
- Marzano, R. J. (1998). In *A theory-based meta-analysis of research on instruction*. Retrieved from [http://www.mcrel.org/PDF/Instruction/5982RR\\_InstructionMeta\\_Analysis.pdf](http://www.mcrel.org/PDF/Instruction/5982RR_InstructionMeta_Analysis.pdf)
- Marzano, R. J., Pickering, D. J. & Pollock, J. E. (2001). *Classroom instruction that works*. Alexandria, VA: Association for Supervision and Curriculum Development
- Maslow, A. H. (Ed.). (1959). *New knowledge in human values*. New York, NY: Harper and Row Publishers Inc.
- Maslow, A. H. (1970). *Motivation and personality* (2nd ed.). New York, NY: Harper and Row Publishers Inc.
- McBer, H. (2000). *Research into teacher effectiveness: A model of teacher effectiveness (DfEE research report no 216)*. Retrieved from Department for Education and Employment Web site: <http://www.ttrb.ac.uk/attachments/72f245a7-f698-467a-8304-6a0d5a6aa906.pdf>
- McCaffrey, D. F., Han, B., & Lockwood, J. R. (2008, February). *From data to bonuses: A case study of the issues related to awarding teachers pay on the basis of their students' progress*. Retrieved from [http://www.performancincentives.org/data/files/directory/ConferencePapersNews/McCaffrey\\_et\\_al\\_2008.pdf](http://www.performancincentives.org/data/files/directory/ConferencePapersNews/McCaffrey_et_al_2008.pdf)
- Milkie, M. A., & Warner, C. H. (2011). *Classroom learning environments and the mental health of first grade children*. Journal of Health and Social Behavior. (52) 4-22
- Miller, R. (n.d.). *Holistic education: A brief introduction*. Retrieved from [http://www.pathsoflearning.org/articles\\_Holistic\\_Ed\\_Introduction.php](http://www.pathsoflearning.org/articles_Holistic_Ed_Introduction.php)

- Miller, R. (2005). Philosophical sources of holistic education. *Journal of Values Education*, 3, Retrieved from [http://www.pathsoflearning.net/articles\\_Holistic\\_Ed\\_Philosophy.php](http://www.pathsoflearning.net/articles_Holistic_Ed_Philosophy.php)
- Narvaez, D., & Lapsley, D. K. (2008). Teaching moral character: Two strategies for teacher education. *The Teacher Educator*, 43, 156-172. doi:10.1080/08878730701838983
- National Commission on Excellence in Education. (1983, April). *A nation at risk: the imperative for educational reform*. Retrieved from [http://datacenter.spps.org/uploads/SOTW\\_A\\_Nation\\_at\\_Risk\\_1983.pdf](http://datacenter.spps.org/uploads/SOTW_A_Nation_at_Risk_1983.pdf)
- National Council for Accreditation of Teacher Education (2008). *Professional standards for the accreditation of teacher preparation institutions*. Retrieved from <http://www.ncate.org/Portals/0/documents/Standards/NCATE%20Standards%202008.pdf>
- Netherwood, K., Buchanan, J., Palmer, D., Stocker, L., & Down, B. (2009). Valuing diversity in children's voice: A case study of children, stewardship and mapping the care of special places in the western australian cluster. In T. Lovat & R. Toomey (Eds.), *Values education and quality teaching: the double helix effect* (pp. 83-103). Breinigsville, PA: Springer Science+Business Media B.V.
- Noddings, N. (2005). *The challenge to care in schools: An alternative approach to education* (2nd ed.). New York, NY: Teachers College Press.
- Pajares, M. F. (1992). Teachers' beliefs and educational research: Cleaning up a messy construct. *Review of Educational Research*, 62, 307-332. Retrieved from <http://links.jstor.org/sici?sici-0034-6543%28199223%2962%3A3%3C307%3ATBAERC%3E2.0.CO%3B2-8>
- Poggio, A. J., Yang, X., Irwin, P. M., Glasnapp, D. R., & Poggio, J. P. (2007). *2006 technical manual for the Kansas general assessments, Kansas assessments of multiple measures and Kansas alternative assessments*. Retrieved from Kansas State Department of Education website: <http://www.ksde.org/Default.aspx?tabid=2374>
- Purpose of this work. (n.d.). *Mid-continent research for education and learning*. Retrieved from <http://mcrel.org/standards-benchmarks/docs/purpose.asp>
- Richardson, V. (1997). Constructivist teaching and teacher education: Theory and practice. In V. Richardson (Ed.), *Constructivist teacher education: Building a world of new understandings*. (pp. 3-14). Bristol, PA: Falmer Press.
- Richardson, V. (2003). Preservice teachers' beliefs. In J. Raths & A. McAninch (Eds.), *Teacher beliefs and classroom performance: the impact of teacher education* (pp. 1-22). Greenwich, CT: Information Age Publishing, Inc.

- Roccas, S., Sagiv, L., Schwartz, S. H., & Knafo, A. (2002). The big five personality factors and personal values. *Personality and Social Psychology Bulletin*, 28, 789-801. doi:10.1177/0146167202289008
- Rokeach, M. (1973). *The nature of human values*. New York, NY: The Free Press.
- Rokeach, M. (1979). *Understanding human values: Individual and societal*. New York, NY: The Free Press.
- Sanders, W. L. (2003). *Beyond no child left behind*. Paper presented at the 2003 Annual Meeting of the American Educational Research Association. Chicago, IL.
- Sanders, W. L. (2006, October). *Comparisons among various educational assessment value-added models*. Paper presented at The Power of Two--National Value-Added Conference. Columbus, OH.
- Sanders, W. L., & Horn, S. P. (1994). The Tennessee value-added assessment system (TVAAS): Mixed-model methodology in educational assessment. *Journal of Personnel Evaluation in Education*, 8, 299-311.
- Sanders, W. L., & Horn, S. P. (1998). Research findings from the Tennessee value-added assessment system (TVAAS) database: Implications for educational evaluation and research. *Journal of Personnel Evaluation in Education*, 12, 247-256. Retrieved from [http://www.sas.com/govedu/edu/ed\\_eval.pdf](http://www.sas.com/govedu/edu/ed_eval.pdf)
- Sanders, W. L., & Rivers, J. C. (1996). *Cumulative and residual effects of teachers on future student academic achievement*. Retrieved from University of Tennessee Value-Added Research and Assessment Center website: [http://news.heartland.org/sites/all/modules/custom/heartland\\_migration/files/pdfs/3048.pdf](http://news.heartland.org/sites/all/modules/custom/heartland_migration/files/pdfs/3048.pdf).
- Sanders, W., & Rivers, J. C. (1999). *The impact of teacher effect on student math competency achievement*. (Unpublished doctoral dissertation). University of Tennessee, Knoxville, TN.
- Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology*, 25, 1-65.
- Schwartz, S. H. (2006). *Basic Human Values: An Overview*. Paper presented at the meeting of the Hebrew University. Jerusalem, Israel.
- Schwartz, S. H., & Bilsky, W. (1987). Toward a universal psychological structure of human values. *Journal of Personality and Social Psychology*, 53, 550-562.

- Schwartz, S. H., & Bilsky, W. (1990). Toward a theory of the universal content and structure of values: Extensions and cross-cultural replications. *Journal of Personality and Social Psychology*, *58*, 878-891.
- Schwartz, S. H., & Rubel, T. (2005). Sex differences in value priorities: Cross-cultural and multimethod studies. *Journal of Personality and Social Psychology*, *89*, 1010-1028. doi:10.1037/0022-3514.89.6.1010
- Schwartz, S. H., & Rubel-Lifschitz, T. (2009). Cross-national variation in the size of sex differences in values: Effects of gender equality. *Journal of Personality and Social Psychology*, *97*, 171-185. doi:10.1037/a0015546
- Shea, K., & Murphy, K. B. (2009). A perfect match: Living values educational program and Aventura City of Excellence School, USA. In T. Lovat & R. Toomey (Eds.), *Values education and quality teaching: the double helix effect* (pp. 121-140). Breinigsville, PA: Springer Science+Business Media B.V.
- Shore, M., Shore, J., & Boggs, S. (2004). *Allied health applications integrated into developmental mathematics using problem based learning*. *Mathematics and Computer Education*, *38*, 183-189
- Sizer, T. (1984). *Horace's compromise*. New York, NY: Houghton Mifflin Co.
- Sizer, T. (2004). *The red pencil*. New Haven, CT: Yale University Press.
- Skinner, B. F. (1948). *Waldon Two*. Indianapolis, IN: Hackett Publishing Company
- Smith, P. B., Peterson, M. F., & Schwartz, S. H. (2002). Cultural values, sources of guidance, and their relevance to managerial behavior a 47-nation study. *Journal of Cross-Cultural Psychology*, *33*, 188-208. doi:10.1177/0022022102033002005
- Spini, D. (2003). Measurement equivalence of 10 value types from the Schwartz value survey across 21 countries. *Journal of Cross-Cultural Psychology*, *34*, 3-23. doi:10.1177/0022022102239152
- State Of Delaware (2010, January). *Application for initial funding* (CFDA Number: 84.395A). Retrieved from <http://www2.e.gov/programs/ractothetop/phase1-applications/delaware.pdf>
- Stewart, N., Lowe, T., Reinert, D., & Franklin, C. (2009). *2009-2010 Kansas Educational Directory*. Retrieved from Kansas State Department of Education website: <http://www.ksde.org/Default.aspx?tabid=3796>
- Strahan, D. (2008). Successful teachers develop academic momentum with reluctant students. *Middle School Journal*, *39*, 4-12.

- Tatto, M. T., & Coupland, D. B. (2003). Teacher education and teachers' beliefs: Theoretical and measurement concerns. In J. Raths & A. McAninch (Eds.), *Teacher beliefs and classroom performance: the impact of teacher education* (pp. 123-181). Greenwich, CT: Information Age.
- Titus, D. N. (1994, September). *Kutztown University Education Conference*. Retrieved from <http://www,hi-ho.ne.jp/taku77/refer/titus.htm>
- Toomey, R. (2009). The double helix and its implications for professional lifelong learning of teachers. In T. Lovat & R. Toomey (Eds.), *Values education and quality teaching: the double helix effect* (pp. 141-149). Breinigsville, PA: Springer Science+Business Media B.V.
- U.S. Department of Education. (2001). *Elementary and secondary education act* (PL 107-110). Retrieved from <http://www2.ed.gov/policy/elsec/leg/esea02/index.html>
- Viadero, D. (2008). Scrutiny heightens for 'value added' research methods. *Education Week*, 27, 1-3.
- Walls, R. T., Nardi, A. H., Von Minden, A. M., & Hoffman, N. (2002). The characteristics of effective and ineffective teachers. *Teacher Education Quarterly*, 29, 39-48.
- Wenglinsky, H. (2002). *How schools matter: the link between teacher classroom practices and student academic performance*. Retrieved from Arizona State University Education Policy Analysis Archives website: <http://epaa.asu.edu/epaa/v10n12/>
- Wright, P. S., Horn, S. P., & Sanders, W. L. (1997). Teacher and classroom context effects on student achievement: Implications for teacher evaluation. *Journal of Personnel Evaluation in Education*, 11, 57-67.
- Yero, J. L. (2002). *Teaching in mind: How teacher thinking shapes education*. Hamilton, MT: MindFlight Publishing.

## Appendix A - Value Types, Items and Needs

Figure A.1 Alignment of Value Types, Items and Needs

Value Type	Value items from SVS	Motivational Need
<u>Universalism</u> - “Concern for nature” and the “welfare of all mankind.” (p.39)	wisdom, world of beauty, world at peace, protecting environment, social justice, inner harmony, unity with nature, equality, broadminded	“Derived from the survival needs of groups and individuals that become apparent when people come into contact with those outside the extended primary group and become aware of the scarcity of natural resources.” (p. 12)
<u>Benevolence</u> -Concern for “the welfare of people with whom one is in close contact.” (p.39)	true friendship, responsible, meaning in life, mature love, loyal, honest, helpful, forgiving, spiritual life	Derived from the need “for positive interaction in order to promote the flourishing of groups and from the organismic need for affiliation.” (p. 11)
<u>Tradition</u> - Subordination to abstractions such as religion and cultural customs and ideas. (p. 40)	moderate, respect for tradition, humble, devout, accepting portion in life, detachment	Derived from needs to preserve “symbols of the group’s solidarity, expressions of its unique worth, and presumed guarantors of its survival.” (p. 10)
<u>Conformity</u> - “Subordination to persons with whom one is in frequent interaction.” (p.40)	politeness, honor parents, self-discipline, obedient	Derived from the need “that individuals inhibit inclinations that might be socially disruptive if interaction and group functioning are to run smoothly.” (p. 9)
<u>Security</u> - Concern for individual and group security. (p. 41)	healthy, family security, social order, clean, reciprocation of favors, sense of belonging, national security	Derived from “basic individual and group requirements” for safety, harmony and stability. (p. 9)
<u>Power</u> - The gaining of social esteem in the “hierarchical organization of relations in society.” (p. 40)	preserving public image, social recognition, authority, wealth, social power	Derived from needs for functioning of social institutions that require status differentiation, and a transformation of “the individual needs for dominance and control.” (p. 9)
<u>Achievement</u> -The gaining of social esteem in “trying to demonstrate competence in everyday interaction.” (p. 40)*	capable, successful, ambitious, influential, intelligent	Derived from a need for “competent performance if individuals are to obtain resources for survival and social interaction and institutional functioning are to succeed.” (p. 8)
<u>Hedonism</u> -“Pleasure or sensuous gratification of oneself.” (p. 8)	pleasure, enjoying life	“Derived from organismic needs and the pleasure associated with satisfying them.” (p. 8)



<u>Stimulation</u> -“Excitement, novelty, and challenge in life.” (p. 8)	exciting life, varied life, daring	Derived from “organismic need for variety and stimulation in order to maintain optimal level of activation.” (p. 7)
<u>Self-direction</u> - “Independent thought and action—choosing, creating, exploring.” (p. 5)*	self-respect, choosing own goals, creativity, curious, independent, freedom	“Derived from organismic needs for control and mastery.” (p. 5)

\* **Important Note:** It should be noted that the traditional understanding by many educators of achievement does not match Schwartz’ description of this value type. (Schwartz, 1992; Schwartz and Bilsky, 1987, 1990).

Figure A-1. Chart of value types with corresponding values and needs. Chart created from Information found in Schwartz (1992).

## Appendix B - Philosophers' Value Types

Figure B.1 Philosophers' Value Types Summary Chart

Value Types ->										
Philosophical Categories	Self-direction	Stimulation	Hedonism	Achievement	Power	Security	Conformity	Tradition	Benevolence	Universalism
Essentialism				Be	Sk	Sk	Be,Sk		Si,Sk	Si
Perrenialism	H, A			H, A				H	H	H
Progressivism	D, R								D, R	D, R
Reconstructionism	F,Br								F,	F,Br
Perspectival Reconstructionism	M, N								M, N	M, N

Key: R=Richardson, Be=Bestor, Si=Sizer, H=Hutchins, A=Adler, D=Dewey, M=Miller, N=Noddings, Sk=Skinner, F=Freire, Br=Brameld

## Appendix C - McBer's Teacher Characteristics and Schwartz Value Types

Figure C.1 Chart of McBer's Teacher Characteristics and Schwartz Value Types

Schwartz' (1992) Value Types ->										
McBer's (2000) Effective Teacher Characteristics	Self-Direction	Stimulation	Hedonism	Achievement	Power	Security	Tradition	Conformity	Benevolence	Universalism
1. Challenge and Support – A commitment to do everything possible for each pupil and to enable all pupils to be successful (p. 36)									X	
2. Confidence – The belief in one's ability to be effective and to take on challenges (p. 38)	X									
3. Creating Trust – Being consistent and fair. Keeping one's word (p. 40)									X	X
4. Respect for Others – The underlying belief that individuals matter and deserve respect (p. 42)								X	X	
5. Analytical Thinking – The ability to think logically, break things down, and recognize cause and effect (p. 44)										
6. Conceptual Thinking – The ability to see patterns and links, even when there is a lot of detail (p. 46)										
7. Drive for Improvement – Relentless energy for setting and meeting challenging targets, for pupils and the school (p. 48)	X			X						

8. Information Seeking – A drive to find out more and get to the heart of things; intellectual curiosity. (p. 50)	X									
9. Initiative – The drive to act now to anticipate and pre-empt events. (p. 52)				X						
10. Flexibility – The ability and willingness to adapt to the needs of a situation and change tactics. (p. 54)								X	X	X
11. Holding People Accountable – The drive and ability to set clear expectations and parameters and to hold others accountable for their performance (p. 56)					X	X				
12. Managing Pupils – The drive and the ability to provide clear direction to pupils, and to enthuse and motivate them (p. 58)				X	X					
13. Passion for Learning – The drive and ability to support pupils in their learning, and to help them become confident and independent learners (p. 60)	X								X	
14. Impact and Influence – The ability and the drive to produce positive outcomes by impressing and influencing others (p. 62)				X	X					
15. Teamworking – The ability to work with others to achieve shared goals (p. 64)								X	X	
16. Understanding Others – The drive and ability to understand others, and why they behave as they do (p. 66)									X	
<b>Totals:</b>	3	1	0	4	3	1	0	3	8	2

## Appendix D - Australian Core Values and Schwartz Value Types

Figure D.1 Australian Nine Core Values with Corresponding Schwartz Value Types

<b>Australian National Value</b> (Lovat & Toomey, 2009, pp. xiv, xv)	<b>Description of Value</b> (Lovat & Toomey, 2009, pp. xiv, xv)	<b>Corresponding Schwartz(1992) Motivational Value Type(s)</b>
Care and Compassion	Care for self and others	Benevolence and Self-Direction
Doing your Best	Seek to accomplish something worthy and admirable, try hard, pursue excellence	Achievement
Fair Go	Pursue and protect the common good where all people are treated fairly for a just society	Universalism
Freedom	Enjoy all the right and privileges of Australian citizenship free from unnecessary interference or control, and stand up for the rights of others	Universalism and Self-Direction
Honesty and Trustworthiness	Be honest, sincere and seek the truth	Benevolence
Integrity	Act in accordance with principles of moral and ethical conduct, ensure consistency between words and deeds	Benevolence and Universalism
Respect	Treat others with consideration and regard, respect another person's point of view	Benevolence and Universalism
Responsibility	Be accountable for one's own actions, resolve differences in constructive, non-violent and peaceful ways, contribute to society and to civic life, take care of the environment	Benevolence and Universalism
Understanding, Tolerance and Inclusion	Be aware of others and their cultures, accept diversity within a democratic society, being included and including others	Benevolence and Universalism

## Appendix E - Reading Assessment Scaling

Figure E.1 Scaling Chart for Kansas Reading Assessments

GD	Academic Warning																													
3	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	14.5	15	16	17	18	19	20	21	22	23	24	25	26	27	28
4	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
5	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
6	0	1	2	3	4	5	5.5	6	7	8	9	10	11	12	13	14	15	15.5	16	17	18	19	20	21	22	23	24	25	25.5	26
7	0	1	2	3	4	5		6	7	8	9	10	11	12	12.5	13	14		15	16	17	18	19	20	21	22	23	24		25
8	0	1	2	3	4	5		6	7	8	9	10	11	12		13	14		15	16	17	18	19	20	21	22	23	24		25
GD	Academic Warning																													
3	29	30	31	32	33	34	35	36	37	38	39	40	40.5	41	42	43	44	45	46	47	48	49	50	51	52	53	54			
4	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56			
5	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56			
6	27	28	29	30	31	32	33	34	35	35.5	36	37	38	39	40	41	42	43	44	45	45.5	46	47	48	49	50	51			
7	26	27	28	29	30	31	32	33	34		35	36	36.5	37	38	39	40	41	42	43		44	45	46	47	48	49			
8	26	27	28	29	30	31	32	33	34		35	36		37	38	39	40	41	42	43		44	45	46	47	48	49			

GD	Approaches Standard														Meets Standard														
3	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79				
4	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80					
5	57	58	59	60	61	62	63	64	65	66	67	68	69	70	70.5	71	72	73	73.5	74	75	76	76.5	77	78	79			
6	52	53	54	55	56	57	57.5	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	
7	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	69.5	70	71	72	73	74	75	76	
8	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78

GD	Exceeds Standard											Exemplary															
3	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100						
4	81	82	83	84	84.5	85	86	87	88	89	90	91	92	93	94	94.5	95	96	97	98	99	100					
5	80	81	82	83	83.5	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100					
6	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100					
7	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100			
8	79	80	81	82	83	84	85	86	87	88	89	90	91	91.5	92	93	94	95	96	97	97.5	98	99	100			

## Appendix F - Mathematics Assessment Scaling

Figure F.1 Scaling Chart for Kansas Mathematics Assessment

GD	Academic Warning																														
3	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
4	0	1	2	3	4	5	6	6.5	7	8	9	10	11	12	13	14	15	16	17	18	19	19.5	20	21	22	23	24	25	26	27	
5	0	1	2	3	4	5	6		7	8	9	10	11	12	13	14	15	16	17	18	19		20	21	22	23	24	25	26	27	
6	0	1	2	3	4	5	6		7	8	9	10	11	12	13	14	15	16	17	18	19		20	21	22	23	24	25	26	26	
7	0	1	2		3	4	5		6	7	7.5	8	9	10	11	11.5	12	13	14	15	16		16.5	17	18		19	20	21	21.5	22
8	0	1	2		3	4	5		6	7		8	9	10	11		12	13	14	15	16			17	18	19	20	21		22	23
GD	Academic Warning																														
3	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57			
4	28	29	30	31	32	33	33.5	34	35	36	37	38	39	40	41	42	43	44	45	46	46.5	47	48	49	50	51	52	53			
5	28	29	30	31	32	33		34	35	36	37	38	39	40	41	42	43	44	45	46		47	48	49	50	51	52	53			
6	27	28	29	30	31	32		33	34	35	36	37	38	39	40	41	42	43	44	45		46	47	48	49	50	51	52			
7	23	24	25	26	26.5	27		27	28	29	30	31	31.5	32	33	34	35	35.5	36	37		38	39	40	40.5	41	42	43			
8	24	25	26	27		28		28	29	30	31	32		33	34	35	36		37	38		39	40	41		42	43	44			

GD	Approaches Standard														Meets Standard																
3	58	59	60		61	62	63	64	65	66	67		68	69	70	71	72	73		74	75	76	77	78	79	80		81	82	83	84
4	54	55			56	57	58	59	60				61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
5	54	55	55.5		56	57		58	59			59.5	60	61	62	63	64	65	66	67	68	69		70	71	72	73	74	75	76	77
6	53	54	55	55.5	56	57		58	59	59.5	60	61	62	63	64	65	66	67	68	69	70		71	72	73	74	75	76	77	78	
7	44	45	46	47	48	49	49.5	50	51	52	53	54	55	56	57	58	59	60	61	62	63		63	64	65	66	67	68	69	70	
8	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65		65	66	67	68	69	70	71	72	

GD	Exceeds Standard												Exemplary																	
3	85	86	87		88			89		90	91	92	93			94	95		96				97		98	99				100
4	80	81	82		83		84	85		86	87	88	89		90	91	92	93	94				95	96	97	98	99			100
5	78	79	80		81	82		83	84		85	86	87	88		89	90	91	92	93		94		95	96	97	98	99		100
6	79	80	81		82	83	84	85	86		87	88	89	90		91	92		93	94		95		96	97		98	99		100
7	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
8	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89		90	91	92	93	94	95	96		97	98	99	100

# Appendix G - Schwartz Values Survey

## VALUE SURVEY

In this questionnaire you are to ask yourself; “What values are important to ME as guiding principles in MY life, and what values are less important to me?” There are two lists of values on the following pages. These values come from different cultures. In the parentheses following each value is an explanation that may help you to understand its meaning.

Your task is to rate how important each value is for you as a guiding principle in your life. Use the rating scale below:

0—means the value is not at all important, it is not relevant as a guiding principal for you.

3—means the value is important

6—means the value is very important

The higher the number (0,1,2,3,4,5,6), the more important the value is as a guiding principle in YOUR life.

-1 is for rating any values opposed to the principles that guide you.

7 is for rating a value of supreme importance as a guiding principle in your life; *ordinarily there are no more than two such values.*

In the space before each value, write the number (-1, 0, 1, 2, 3, 4, 5, 6, 7) that indicates the importance of that value for you, personally. Try to distinguish as much as possible between the values by using all the numbers. You will, of course, need to use numbers more than once.

AS A GUIDING PRINCIPLE IN MY LIFE, this value is:

opposed									of
to my	not						very		supreme
values	important		important			important		importance	
-1	0	1	2	3	4	5	6	7	

Before you begin, read the values in List 1, choose the one that is most important to you and rate its importance. Next choose the value that is most opposed to your values and rate it -1. If there is no such value, choose the value least important to you and rate it 0 or 1, according to its importance. Then rate the rest of the values in List 1.

### VALUES LIST I

1 \_\_\_\_\_ EQUALITY (equal opportunity for all)

2 \_\_\_\_\_ INNER HARMONY (at peace with myself)

3 \_\_\_\_\_ SOCIAL POWER (control over others, dominance)



AS A GUIDING PRINCIPLE IN MY LIFE, this value is:

opposed to my values	not important			important				very important	of supreme importance
-1	0	1	2	3	4	5	6	7	

- 4 \_\_\_ PLEASURE (gratification of desires)
- 5 \_\_\_ FREEDOM (freedom of action and thought)
- 6 \_\_\_ A SPIRITUAL LIFE (emphasis on spiritual not material matters)
- 7 \_\_\_ SENSE OF BELONGING (feeling that others care about me)
- 8 \_\_\_ SOCIAL ORDER (stability in society)
- 9 \_\_\_ AN EXCITING LIFE (stimulating experiences)
- 10 \_\_\_ MEANING IN LIFE (a purpose in life)
- 11 \_\_\_ POLITENESS (courtesy, good manners)
- 12 \_\_\_ WEALTH (material possessions, money)
- 13 \_\_\_ NATIONAL SECURITY (protection of my nation from enemies)
- 14 \_\_\_ SELF RESPECT (belief in one's own worth)
- 15 \_\_\_ RECIPROCATION OF FAVORS (avoidance of indebtedness)
- 16 \_\_\_ CREATIVITY (uniqueness, imagination)
- 17 \_\_\_ A WORLD AT PEACE (free of war and conflict)
- 18 \_\_\_ RESPECT FOR TRADITION (preservation of time-honored customs)
- 19 \_\_\_ MATURE LOVE (deep emotional & spiritual intimacy)
- 20 \_\_\_ SELF-DISCIPLINE (self-restraint, resistance to temptation)
- 21 \_\_\_ PRIVACY (the right to have a private sphere)
- 22 \_\_\_ FAMILY SECURITY (safety for loved ones)

AS A GUIDING PRINCIPLE IN MY LIFE, this value is:

opposed to my values	not important			important			very important	of supreme importance
-1	0	1	2	3	4	5	6	7

23 \_\_\_ SOCIAL RECOGNITION (respect, approval by others)

24 \_\_\_ UNITY WITH NATURE (fitting into nature)

25 \_\_\_ A VARIED LIFE (filled with challenge, novelty and change)

26 \_\_\_ WISDOM (a mature understanding of life)

27 \_\_\_ AUTHORITY (the right to lead or command)

28 \_\_\_ TRUE FRIENDSHIP (close, supportive friends)

29 \_\_\_ A WORLD OF BEAUTY (beauty of nature and the arts)

30 \_\_\_ SOCIAL JUSTICE (correcting injustice, care for the weak)

\* \* \* \* \*

### VALUES LIST II

Now rate how important each of the following values is for you as a guiding principle in YOUR life. These values are phrased as ways of acting and may be more or less important for you. Once again, try to distinguish as much as possible between the values by using all the numbers.

Before you begin, read the values in List II, choose the one that is most important to you and rate its importance. Next choose the value that is most opposed to your values, or—if there is no such value—choose the value least important to you, rate it -1, 0, or 1, according to its importance. Then rate the rest of the values.

AS A GUIDING PRINCIPLE IN MY LIFE, this value is:

opposed to my values	not important			important			very important	of supreme importance
-1	0	1	2	3	4	5	6	7

31 \_\_\_ INDEPENDENT (self-reliant, self-sufficient)

32 \_\_\_ MODERATE (avoiding extremes of feeling & action)

AS A GUIDING PRINCIPLE IN MY LIFE, this value is:

opposed									of
to my	not			important			very	supreme	
values	important						important	importance	
-1	0	1	2	3	4	5	6	7	

- 33 \_\_\_\_\_ LOYAL (faithful to my friends, group)
- 34 \_\_\_\_\_ AMBITIOUS (hard-working, aspiring)
- 35 \_\_\_\_\_ BROADMINDED (tolerant of different ideas and beliefs)
- 36 \_\_\_\_\_ HUMBLE (modest, self-effacing)
- 37 \_\_\_\_\_ DARING (seeking adventure, risk)
- 38 \_\_\_\_\_ PROTECTING THE ENVIRONMENT (preserving nature)
- 39 \_\_\_\_\_ INFLUENTIAL (having an impact on people and events)
- 40 \_\_\_\_\_ HONORING OF PARENTS AND ELDERS (showing respect)
- 41 \_\_\_\_\_ CHOOSING OWN GOALS (selecting own purposes)
- 42 \_\_\_\_\_ HEALTHY (not being sick physically or mentally)
- 43 \_\_\_\_\_ CAPABLE (competent, effective, efficient)
- 44 \_\_\_\_\_ ACCEPTING MY PORTION IN LIFE (submitting to life's circumstances)
- 45 \_\_\_\_\_ HONEST (genuine, sincere)
- 46 \_\_\_\_\_ PRESERVING MY PUBLIC IMAGE (protecting my "face")
- 47 \_\_\_\_\_ OBEDIENT (dutiful, meeting obligations)
- 48 \_\_\_\_\_ INTELLIGENT (logical, thinking)
- 49 \_\_\_\_\_ HELPFUL (working for the welfare of others)
- 50 \_\_\_\_\_ ENJOYING LIFE (enjoying food, sex, leisure, etc.)
- 51 \_\_\_\_\_ DEVOUT (holding to religious faith & belief)

AS A GUIDING PRINCIPLE IN MY LIFE, this value is:

opposed to my values -1	not important 0	1	2	important 3	4	5	very important 6	of supreme importance 7
----------------------------------	-----------------------	---	---	----------------	---	---	------------------------	----------------------------------

52 \_\_\_\_\_ RESPONSIBLE (dependable, reliable)

53 \_\_\_\_\_ CURIOUS (interested in everything, exploring)

54 \_\_\_\_\_ FORGIVING (willing to pardon others)

55 \_\_\_\_\_ SUCCESSFUL (achieving goals)

56 \_\_\_\_\_ CLEAN (neat, tidy)

57 \_\_\_\_\_ SELF-INDULGENT (doing pleasant things)

## Keying of SVS Ten Individual Level Value Scales

<u>Value</u>	<u>SVS items</u>
Conformity	11,10,40,47
Tradition	18,32,36,44,51
Benevolence	33,45,49,52,54
Universalism	1,17,24,26,29,30,35,38
Self-Direction	5,16,31,41,53
Stimulation	9,25,37
Hedonism	4,50,57
Achievement	34,39,43,55
Power	3,12,27,46
Security	8,13,15,22,56

The score of each value is the mean of the ratings given to the items listed above for that value. Note, however, that for most purposes it is necessary to make a correction for individual differences in use of the response scale. The next page provides instructions for making the correction. **Failure to make the necessary scale use correction typically leads to mistaken conclusions!**

### Scale Use Correction for the 56 or 57 item SVS

Individual and cultural groups differ in their use of the response scale.<sup>i</sup> When treating value priorities either as independent or as dependent variables, it is necessary to correct for scale use. In such analyses, scale use differences often distort findings and lead to incorrect conclusions.<sup>ii</sup> Follow the appropriate instructions below to correct for scale use.

#### 1. For correlation analyses:

A. Compute each individual's total score on all value items and divide by the total number of items (56 or 57). I call this the MRAT.

B1. Center scores of each of the items for an individual around that individual's MRAT. Then compute scores for the 10 values by taking the means of the centered items. Use these centered value scores in correlations.

B2. Alternatively, use the raw scores for the 10 values, but use partial correlation to correlate them with other variables, partialing out their relations to MRAT (i.e., use MRAT as a covariate).

*The two alternative methods yield virtually identical results.*

2. For group mean comparisons, analysis of variance or of covariance (t-tests, ANOVA, MANOVA, ANCOVA, MANCOVA):

A. Compute MRAT as in 1A above

B1. Center score for each item and compute 10 value scores as in 1B1. Then use these centered scores in the analyses.

B2. Alternatively, use raw scores and include MRAT as a covariate (i.e. a control at the individual level) in all analyses.

*The two alternative methods yield virtually identical results.*

3. For regression:

A. Compute MRAT as in 1A above.

B. Center scores of all items and compute 10 value scores as in 1B1.

C. Enter **up to 8** centered values as predictors in the regression.

1. If all 10 values are included, the regression weights for the values will be inaccurate and uninterpretable.

2. Choose the values to exclude as predictors *a priori* on theoretical grounds because they are irrelevant to the topic.

D. Alternatively, use raw value scores as predictors, but be sure to include **at least 3** values and **no more than 8** as predictors [*Do not use MRAT in this case*]

E. If you are interested **only** in the total variance accounted for by values, you may include all 10 as predictors in either method (do not interpret the coefficients obtained this way!).

F. If the value is your dependent variable, use the centered value score.

G. In publications, I strongly advise providing a table with the correlations between the values and the dependent variables in addition to any regression. Use correlations following 1B1 or 1B2, above. These correlations will aid in understanding results and reduce confusion due either to multicollinearity or intercorrelations among the values.

4. For multidimensional scaling, canonical, discriminant, or confirmatory factor analyses:

Use raw value scores for the items or 10 value means.

Footnotes

1. Schwartz, et al., (1997) examine meanings of such scale use as an individual difference variable. Smith (2004) discusses correlates of scale use differences at the level of cultures.

2. Individual differences in the mean of the 21 values are largely a scale use bias. This assertion is grounded both in theory and empirically.

A first theoretical ground is the assumption that, across the full range of value contents, everyone views values as approximately equally important. Some attribute more importance to one value, others to another. But, on average, values as a whole are of equal importance. This

assumption is dependent on the further assumption that the value instrument covers all of the major types of values to which people attribute importance. Empirical evidence to support this assumption appears in Schwartz 1992, 2004. To the extent that individuals attribute the same average importance to the full set of values, their mean score (MRAT) should be the same. Differences in individual MRATs therefore reflect scale use and not value substance. Of course, differences in MRAT may reflect some substance, but the empirical analyses suggest that substance is a much smaller component of MRAT than scale use bias is (Schwartz, et al., 1997).

The second theoretical ground is that values are of interest because they form a system of priorities that guide, influence, and are influenced by thought, feeling and action. Values do not function in isolation from one another but as systems. For example, a decision to vote for one or another party is influenced by the perceived consequences of that vote for the attainment or frustration of **multiple** values—promoting equality or freedom of expression versus social power or tradition. It is the trade-off among the relevant values that affects the vote. Consequently, what is really of interest are the **priorities** among the values that form an individual's value system. Correcting for scale use with MRAT converts absolute value scores into scores that indicate the relative importance of each value in the value system, i.e., the individual's value priorities.

The empirical basis for viewing differences in MRAT as bias is the findings of many analyses (50 or so, at least) that related value priorities to other variables—attitudes, behavior, background. The associations obtained (mean differences, correlations) when using scores corrected for MRAT are consistently more supportive of hypotheses based on theorizing about how values should relate to these other variables than the associations with raw scores. Indeed, with raw scores associations sometimes reverse. In no case have raw score associations made better sense than those corrected for MRAT.

3. A more refined way to measure MRAT is possible. Separate MRATs may be calculated for each of the ten values. For this purpose, the average response on all items other than those that index a value is computed as the MRAT for each value. Scores on the items that index each of the 10 values are then centered around their own MRAT. Alternatively, the particular MRAT for each value is used as the covariate when correlating that value with other variables. Studies indicate that using this more refined method with the SVS makes virtually no difference.

#### References [available as electronic files]

Schwartz, S. H. (1992). Universals in the content and structure of values: Theory and empirical test in 20 countries. In M. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 25) (pp. 1-65). New York: Academic Press.

Schwartz, S.H. (1996). Value priorities and behavior: Applying a theory of integrated value systems. In C. Seligman, J.M. Olson, & M.P. Zanna (Eds.), *The Psychology of Values: The Ontario Symposium, Vol. 8* (pp. 1-24). Hillsdale, NJ: Erlbaum.

Schwartz, S.H., Verkasalo, M., Antonovsky, A., & Sagiv, L. (1997). Value priorities and social desirability: Much substance, some style. *British Journal of Social Psychology*, 36, 3-18.

Schwartz, S. H. (2004). Basic human values: Their content and structure across countries. In A. Tamayo & J Porto (Eds.), *Valores e trabalho* [Values and work]. Brasilia: Editora Universidade de Brasilia.

Smith, P. B. (2004). Acquiescent response bias as an aspect of cultural communications style. *Journal of Cross-Cultural Psychology*, 35, 50-61.



## **Appendix H - Cover Letter to Administrators**

May 7, 2011

Dear Mrs.

I am David Loewen, a professor of education at Tabor College, currently enrolled at Kansas State University as a doctoral candidate in Curriculum and Instruction. In my years of preparing young women and men to become teachers, I have often wondered about identifiable qualities that really super teachers have. What is it that sets them apart from the rest of the teaching field? Could these qualities be instilled in young men and women before they begin teaching? This letter is asking for your cooperation with research that seeks to place one more piece into that teaching puzzle.

Of the 1,041 Kansas public middle schools and grade schools, yours was one of 200 that were randomly selected for participation in this project. 150 to 200 Kansas teachers and the KSDE Education Research and Evaluation team will be providing data to determine if a relationship exists between student test score gains and 10 different value types. KSDE will be providing test score data from the 2010 and 2011 state assessments of reading and math. Teachers that choose to participate will need to spend about 30 minutes filling out a values survey. The teachers will be provided with a postage paid envelope for returning the survey.

If relationships are discovered, this research could prove to be useful to teacher education programs in knowing which values are important to emphasize and which are not. The results may also prove to be useful for current educators as they reflect on their own personal values and how those values may be impacting student learning.

Upon completion of the study in the Spring of 2012, you and your participating teachers will receive a summary of the research results. The summary will not identify any specific districts, buildings, administrators or teachers. At this time the teachers will also receive the results of their individual value type scores from the values survey, shared only with the teacher. This will allow them to be some of the first teachers to reflect on research based information about their own values and how this may be impacting their students' learning.

At your first convenience, please fill out the enclosed form with the names and email addresses of all of the eligible teachers in your building. Teachers that you list need to be educators of reading and/or math, in the following grades: 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup>, 8<sup>th</sup>. After completing the form, simply insert it in the enclosed postage paid envelope and drop it in the mail.

I have also enclosed my business card. If you have any questions feel free to contact me. Thanks for your help.

Sincerely,

David Loewen

P.S. The enclosed coupons are yours as a token of my appreciation. Use them to brighten someone's day!

## Appendix I - Cover Letter to Teachers

Date

Title. 1<sup>st</sup> Name Last Name

School Name

Address 1

Address 2

Address 3

Dear Title. Last Name,

I am David Loewen, a professor of education at Tabor College, currently enrolled at Kansas State University as a doctoral candidate in Curriculum and Instruction and working on dissertation research. Recently your building administrator submitted your name as a possible participant in this research.

By completing the enclosed values survey you will be one of 150 to 200 Kansas teachers advancing research that could determine if a relationship exists between teacher values and student learning gains. Learning gains will be calculated by comparing the 2010 scores with the 2011 scores on the state math and reading assessments. I have arranged with the KSDE Education Research and Evaluation Team to provide this assessment information.

This research could prove to be invaluable to teacher education programs and as an item of reflection for teacher improvement. You will receive your value type results from the values inventory and a brief summary of the research results in the Spring of 2012. You will be one of the first to get the results of the research and benefit by being able to reflect on your own values and their relationships to your students' learning.

If you choose to participate, read, sign and date the enclosed consent form and fill out the enclosed survey at your first convenience. Read and follow the survey directions carefully and respond to all of the items. Doing this will increase the reliability of the research results. The survey should take about 30 minutes to complete. Upon completion, place your survey and the consent form in the enclosed envelope and drop it in the mail.

Participation is voluntary and you may withdraw at any time without any consequences. Please be assured that the identity of survey participants, such as names and other identifiers, will be kept confidential. Individual results of this research will be made available only to you. For the publication of findings of this research, results will be aggregated in a way that individuals will not be identifiable. Responses to this survey will be maintained on secure computers in locked offices.

My business card has been enclosed. If you have any questions, please contact me. I genuinely appreciate your willingness to participate!

Sincerely,  
David Loewen

P.S. The enclosed coupons are yours as a token of my appreciation. Use them to brighten someone's day!

## **Appendix J - Brad Neuenswander Letter to Administrators**

Dear School Administrator,

Late in the 2010-2011 school year one or more of the teachers from your building/district chose to participate in a study being conducted by David Loewen for his doctoral dissertation at Kansas State University. Your teacher(s) completed a values survey and returned it to the researcher. Mr. Loewen then submitted your teacher(s) names and identification numbers to the KSDE data management team. However, it was discovered that efforts to match teacher identifications with 2010-2011 student test scores provided less than acceptable results that were not up to KSDE standards.

It is KSDE's desire to provide high quality data and information for valuable research. Mr. Loewen's research seeks a correlation between student test score gains and their teacher's values, and I believe that it could prove to be invaluable to teacher education programs in Kansas as they seek to teach research based dispositions in teacher education coursework. I also believe that this research has the potential to provide powerful information to individual teachers as they reflect on how their own values may be influencing student learning.

Mr. Loewen's research is being done in coordination with KSDE, therefore I strongly urge your support in producing quality data for this researcher by providing class lists. The attached teacher(s) from the 2010-2011 school year are participating in this study and taught Mathematics and/or Reading in your district/building. KSDE's data management team needs class lists from that year which include all of the students to whom these teachers were responsible for Math and/or Reading instruction.

I desire your cooperation with KSDE in this effort by having an administrative assistant fill in the names and/or student test code ID numbers by downloading the tables on the next page, filling them out and returning them to [mwallis@ksde.org](mailto:mwallis@ksde.org) . Should your response delay more than two weeks this letter will be followed up with a telephone contact.

I deeply appreciate your efforts to provide a quality educational experience for Kansas children.

Sincerely,


Brad Neuenswander,  
Deputy Commissioner of Education

# Appendix K - Permission to Use Schwartz's Materials

Figure K.1 Email Permission to Use Schwartz Values Survey

Tabor College Mail - Permission to use the SVS for Dissertation Research <https://mail.google.com/mail/?ui=2&ik=9d1e2bdd37&view=pt&q=m...>

---

 **Tabor** David Loewen <davidl@tabor.edu>

---

**Permission to use the SVS for Dissertation Research**  
5 messages

---

**David Loewen** <davidl@tabor.edu> Wed, Jan 19, 2011 at 2:33 PM  
To: msshach@mssc.huji.ac.il

Dr. Schwartz,

I have obtained a copy of the Schwartz Value Survey. I am looking at doing a correlational study that seeks a relationship between teacher values and student test score gains. I will be trying to get a sample of 150-200 teachers to take the SVS. What do I need to do in order to gain permission for its use?

My research is being conducted through the Kansas State University College of Education.

I am a doctoral student at Kansas State and on faculty at Tabor College in Hillsboro, KS.

David Loewen  
Assistant Professor of Education  
Tabor College

---



**Shalom Schwartz** <msshach@mssc.huji.ac.il> Wed, Jan 19, 2011 at 4:12 PM  
To: David Loewen <davidl@tabor.edu>

You have my permission. Just to be sure, I attach a copy and instructions that you should follow.

Shalom  
[Quoted text hidden]

---

**2 attachments**

-  **Scoring&ScalingSVS57 Ind.doc**  
49K
-  **SVS57ENG..doc**  
56K

---

**David Loewen** <davidl@tabor.edu> Wed, Jan 19, 2011 at 11:03 PM  
To: Aaron Carlstrom <acarlst@k-state.edu>, Michael Perl <perl@ksu.edu>

Drs. Perl and Carlstrom,

I just thought that you might want to see Dr. Schwartz' response!

Dave  
[Quoted text hidden]


---

1 of 2 2/5/2013 11:50 AM

Figure K.2 Email Permission to Use Figure 2.1

Tabor College Mail - Request to use attached figure in Dissertation <https://mail.google.com/mail/?ui=2&ik=9d1e2bdd37&view=pt&cat=...>

---

 **Tabor** David Loewen <davidl@tabor.edu>

---

**Request to use attached figure in Dissertation**  
2 messages

---


**David Loewen** <davidl@tabor.edu> Sat, Dec 29, 2012 at 8:30 AM  
To: Shalom Schwartz <msshach@mscc.huji.ac.il>

Dr. Schwartz,

I want to thank you for allowing me to use the SVS as an instrument in my dissertation seeking to discover the relationship between teacher values and student test score gains. I am in the process of making final revisions in the dissertation and would like your permission to use the attached figure to explain the relationships between value types.

David Loewen  
Doctoral Candidate in Curriculum and Instruction  
at Kansas State University

---

 **Schwartz Value Circle.doc**  
27K

---

**shalom schwartz** <msshach@mscc.huji.ac.il> Wed, Jan 2, 2013 at 10:56 AM  
To: David Loewen <davidl@tabor.edu>

You are welcome to use the figure with appropriate citation to where you found it. Do let me know what you learned in your research.

Shalom

Professor Shalom H. Schwartz  
Department of Psychology  
The Hebrew University of Jerusalem  
& The Higher School of Economics, Moscow  
msshach@mscc.huji.ac.il  
shalom.schwartz@huji.ac.il  
[Quoted text hidden]  
----- End of Original Message -----

---

1 of 1 2/5/2013 11:49 AM