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Self-efficacy and instructional leadership: Does mentoring make a difference?

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Self-Efficacy and Instructional Leadership: Does mentoring make a difference?

by

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Dedication

Thank you to my family, especially my husband, Tim, and children, Taylor, Owen, and Noah, for their constant support to me throughout this process. Their patience and love have allowed me the time and resources to complete this study.

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Abstract

The responsibility of principals has shifted significantly over the past few decades. During 1960s and 1970s school leaders were expected to be organizers and managers of schools and to serve as buffers to the organization to protect a weak technical core. Standards-based reform, beginning in the 1980s, was in direct conflict with this mindset. Instead of protecting a weak technical core, school leaders had to focus on instruction guided by standards and demonstrate alignment to such standards. Today, there is an increased attention on academic achievement and accountability in schools (Leithwood, Jantzi, & Steinbach, 1999). Principals are being held responsible for the quality of their teaching staff and the results of high stakes assessments. Mentoring programs for practicing principals are limited and those for aspiring principals are inconsistent. Given the changing role of the principal in public education, the researcher conducted this study to determine how mentoring impacts a principal's self-efficacy in instructional leadership.

Data were collected through the use of a web-based quantitative survey. A sample size of 505 principals was captured. Principals were asked to characterize their mentoring experience and answer questions that identified their self-efficacy in instructional leadership categories. Data were analyzed using descriptive and inferential statistics, confirmatory factor analysis, and structural equation modeling.

Major findings included the following: 1) Principals who were mentored had higher self-efficacy scores in each of the instructional leadership categories; culture, data, and enactment (school improvement, evaluation and curriculum; 2) Suburban school principals ranked their mentoring experiences at a higher level than urban or rural principals; 3)

Principals who held doctoral degrees were more efficacious in all three instructional leadership categories; 4) Elementary principals were more efficacious in the use of data to improve instruction; 5) Principals who had served longer tenures had higher self-efficacy scores in building a positive school culture.

The results of this research will contribute to the existing knowledge base about the effects of a mentoring program on instructional leadership self-efficacy and will be beneficial to school districts, college and university educational administration programs, and building leaders across the state.

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Chapter One–Research Problem

Introduction

The role of the school leader has changed drastically over the past 20 years. School reform efforts can be traced back to the development of public schools; however, more intensive reform began in the United States in 1983 with the publication, *A Nation at Risk* (Goldberg & Harvey, 1983), submitted by the National Commission on Education. This report identified deficiencies in the U.S. educational system compared to other countries around the world, which led to standardization. Although many states began to expand required state assessments and increase graduation requirements, these futile attempts to reform education were not reflected in the achievement data.

President Bill Clinton signed the Goals 2000 Educate America Act into law on March 31, 1994 just after the passing of the Improving America's Schools Act and the reauthorization of the *Elementary Secondary Education Act.* The purpose of the Goals 2000 law was to identify and establish National Education Goals to be met by the year 2000. These goals were more inclusive of all aspects of education to reach the whole child, focusing on school readiness, school completion, student achievement and citizenship, teacher education and professional development, math and science**,** adult literacy and life-long learning, safe and drug free schools, and parent involvement (U.S. Department of Ed., 1983b). The U.S. Department of Education urged states to respond and become more involved in their schools. In response**,** state politicians and policy-makers began many reform initiatives at the state level (McCarthy & Hall, 1989).

Many states began to refine their standards and expectations for student performance. The newly formed U.S. Department of Education began to approve subject area content

standards across the United States. The states also reformed their assessments and began to focus on collecting more data from their schools. As a result, the states were becoming very proficient in large-scale administration of tests. Although progress was being made toward standardization, the results from the federal government's perspective were still not at a desirable level. Thus, on January 8, 2002 President George W. Bush signed into law the No Child Left Behind Act of 2001 (NCLB of 2001.20. U.S.C. 6319), which changed education in many ways. A new accountability measure was placed on states and schools, with funding tied to performance. The pressure that NCLB put on states and local school districts to perform required highly qualified teachers to deliver high quality instruction every day to every student. Further, this movement, tied to teacher evaluation and performance, required school leaders to be proficient in all aspects of education (Linn, Baker, & Bettebenner, 2002). Prior to this period of nation-wide educational reform, the school leader served as a manager and problem-solver for schools and served to protect the technical core of the school. With educational reform, the technical core was subjected to microscopic scrutiny like never before. A new skill set required building leaders to analyze their strengths and weaknesses and adapt to the reform movement. Today, school leaders must be educational experts who drive student performance, are data-driven leaders, and highly skilled facilitators of school improvement.

The Interstate School Leaders Licensure Consortium (ISLLC) developed in 1995 established standards that outlined performance goals for effective leadership (Council of Chief State School Officers (CCSSO, 1996). Principal preparation programs are currently assessed by standards of the Educational Leadership Constituent Council (ELCC, developed for the National Council for Accreditation of Teacher Education (NCATE) under the

auspices of the National Policy Board for Educational Administration (NPBE; Shipman, Queen, & Peel, 2007, p. xi). These standards were revised in 2011 and are similar to the ISLLC standards developed in 1995 but reflect what a 21st century leader should know and be able to do.

The increased demands on the building principal motivated the researcher to consider how a principal's self-efficacy may impact his or her ability to establish and facilitate instructional leadership priorities. Albert Bandura (1994) defined self-efficacy as "people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives. Self-efficacy beliefs determine how people feel, think, motivate themselves, and behave" (p. 71). If a principal perceives a low self-efficacy in his/her vision for learning and instructional leadership capabilities, is the principal capable of being an effective leader of a school in the 21st Century?

Problem Statement

In this age of accountability and school reform, the building principal is being asked to be the instructional leader in the school and is being held responsible for the performance of students and teachers in the school building. Skilled principals are being sought by many schools to effect positive instructional change. The skills of 21st century principals must be centered on instructional leadership and establishing a culture of learning in their schools, key skills, which are impacted by a principal's self-efficacy (Tschannen-Moran & Gareis, 2004).

A robust sense of efficacy is necessary to sustain the productive intentional focus and perseverance of effort needed to succeed at organizational goals (Wood & Bandura, 1989). Empirical evidence suggested that a principal's sense of efficacy plays a critical role in

meeting the expectations and demands of the position in light of increased responsibility (Tschannen-Moran & Gareis, 2004). Many variables impact self-efficacy. Bandura (1997) categorized these constructs as: enactive mastery experiences, vicarious experiences, verbal persuasion, physiological and affective states, and integration of efficacy information (p. 79). Determining how perceived self-efficacy is developed and sustained by building principals provided valuable information to preparation programs and school districts across the country.

Purpose of the Study

The purpose of this study was to determine if there is a significant relationship between a principal's sense of self-efficacy in instructional leadership and his or her mentoring experiences, or if there is any resulting relationship in a principal's perceived self-efficacy in identified instructional leadership categories and gender, school type, experience, age, educational level, and area of study. Further, the study examined how an increased or decreased sense of self-efficacy impacts instructional leadership qualities. The study compared responses of principals on a self-efficacy survey that was focused on instructional leadership and the level and types of mentoring or mentoring relationships experienced by these principals.

Significance of the Proposed Inquiry

Most principals can identify mentors who have had an influence in their professional lives. Does this influence impact their perceived self-efficacy? "Mentoring as a critical component of more effective leadership development programs is now being implemented in a large number of university-based administrator pre-service preparation programs across the U.S.A." (Daresh, 1995, p. 7). Extreme variability exists in formal and informal mentoring

programs across the U. S., and there is controversy about whether a single mentor is effective, or if multiple mentors have a greater impact on behavior. "Because enhancing leadership self-efficacy should be an important objective for those responsible for improving the quality of leadership in school" (Tschannen-Moran & Gareis, 2004, p. 583), attention should be paid to developing a principal's sense of self-efficacy. This development could be enhanced through efficacy expectations and modeling. Social cognitive theory provided guidance on observational learning and how "most human behavior is learned through modeling" (Bandura, 1986, p. 47).

Self-efficacy beliefs are constructed from five principal sources of information: enactive mastery experiences, vicarious experiences, verbal persuasion, physiological and affective states, and integration of efficacy information (Bandura, 1997). By studying how mentoring is associated with a principal's self-efficacy beliefs in relation to instructional leadership, an establishment of a research-driven mentoring program could result. In addition, the results of this research added to the current research on self-efficacy in school leaders and how mentoring programs, both informal and formal, career and psychosocial, influence perceived self-efficacy.

Research Questions and Null Hypotheses

Q 1. Is there a significant relationship between a principal's perceived sense of self-efficacy in instructional leadership and his or her mentoring experiences?

Null Hypothesis: There will be no relationship between a principal's perceived self-efficacy in the identified instructional leadership categories and his or her mentoring experiences.

Q 2. Is there any resulting relationship in a principal's perceived self-efficacy in instructional leadership and gender, school type, school level, experience (tenure), age, educational level, school size, and race/ethnicity?

Null Hypothesis: There will be no resulting relationship between a principal's perceived self-efficacy and the identified instructional leadership categories.

Study Design

A quantitative survey was sent to all principals in the State of Michigan. A sample size of 505 was collected. The survey identified factors such as gender, school type, experience, age, educational level, and race/ethnicity but primarily focused on principals' mentoring experiences. The survey also contained questions to identify the levels and types of mentoring experiences a principal may or may not have had as well as questions identifying the quality of their mentor. Additionally, participants identified their perceived self-efficacy in identified instructional leadership qualities using a Likert scale. Descriptive, bivariate, multivariate statistics, regression and factor analysis, as well as, confirmatory factor analysis (CFA) and structural equation modeling (SEM) were employed using SPSS and AMOS to determine the relationships among the variables.

Conceptual Framework/ Theoretical Base

Albert Bandura's Social Learning Theory (1977) and Social Cognitive Theory (1986) were used as the theoretical base for this study. These theories, along with Bandura's research in the field of self-efficacy served as the conceptual framework that guided this research (see Figure 1). Additionally, research in mentoring, and instructional leadership contributed to the framework.

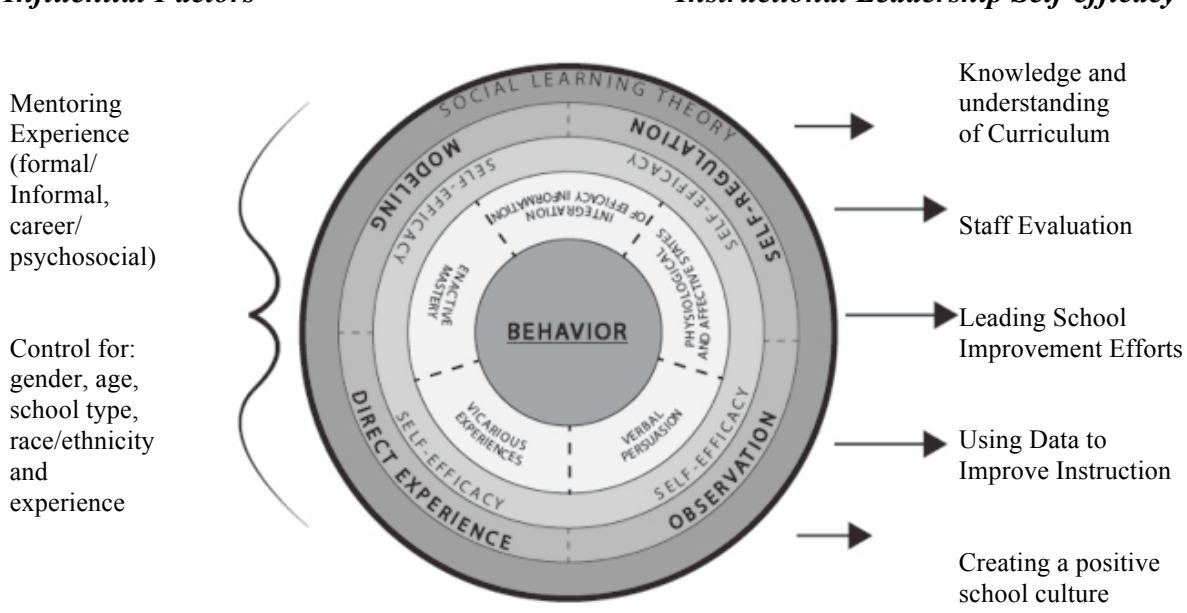


Figure 1. Conceptual Framework - Behavior

Self-efficacy

Albert Bandura (1997) defined self-efficacy as the "belief in one's capabilities to organize and execute the courses of action required to produce given attainments" (p. 3). People with high levels of self-efficacy take on new behaviors and tasks with confidence. Conversely, people with low levels of self-efficacy are unsure and reluctant to take on new behaviors. Paglis and Green (2002) believed that leader self-efficacy allows managers to accomplish the following leadership tasks: setting the direction for where the work should be headed, gaining followers' commitment to change goals, and overcoming obstacles standing in the way. Bandura and Locke (2003) posited that levels of motivation and performance rely heavily on efficacy beliefs. Thus, principals with higher levels of self-efficacy will have higher levels of motivation and performance.

Instructional Leadership Self-efficacy

A principal's instructional leadership self-efficacy is determined by the perceived efficacy beliefs of his or her ability to carry out tasks that involve instructional leadership. For example, a principal who is not knowledgeable of the curriculum in the various content areas in their buildings may have a low sense of self-efficacy in this category. This low sense of self-efficacy may contribute to the principal's ability to evaluate staff in this area. "In highly efficacious schools, in addition to serving as administrators, principals are educational leaders who seek ways to improve instruction" (Bandura, 1997, p. 244). To create a culture of efficacy in instructional leadership, the principal must be involved. It has been demonstrated that academic leadership by the principal contributes to teachers' sense of instructional efficacy (Coladarci, 1992).

Social Learning Theory and Social Cognitive Theory

Understanding how and why people behave in certain ways is the basis for behavior theory. "In the social cognitive view, people are neither driven by inner forces or automatically shaped and controlled by external stimuli. Rather, human functioning is explained in terms of a model of triadic reciprocity or reciprocal causation model in which behavior, cognitive and other personal factors, and environmental events all operate as interacting determinants of each other" (Bandura, 1986, p. 18). In an earlier edition, Bandura (1977) further described social learning theory as driven by four constructs: direct experience, observation, modeling, and self-regulatory processes. People learn how to behave by having direct experience with situations. They learn by the positive and negative effects that their actions produce. Positive effects reinforce behavior and negative effects cause people to discard the behavior. People also learn how to behave through modeling.

They observe others to help guide new behaviors and reinforce positive outcomes. Positive mentoring experiences rely on modeling and observation. Self-regulatory processes contribute to personal behavior by monitoring outcomes based on personal standards (Bandura, 1986). A person's ability to self-regulate behavior by combining direct experience, observation, and modeling with their own internal compass allows the behavior to be owned.

The owned behavior can be attributed to the variety of experiences in a person's life. Many outside factors contribute to a person's behavior. From a young age, children learn through the action of those around them. As people develop new knowledge, the circle of influence grows and behaviors develop based on experiences with a broader range of people. In education, both informal and formal mentoring programs serve as an influence on behavior. Malcolm Knowles (2002) described adult learning based on five assumptions: self-concept, experience, readiness to learn, orientation to learning, and motivation to learn. These five assumptions are based on the informal experiences that adults acquire as they mature.

Mentoring

There are many definitions of mentoring in the documented research. "Traditionally, mentoring is defined in terms of a parental figure who sponsors, guides, and develops a younger person" (Ehrich, Hansford, & Tennent, 2004, p. 519). "The concept of the experienced professional as a mentor serving as a wise guide to a younger protégé dates back to Homer's *Odyssey"* (Daresh, 1995, p. 8). More specifically, mentoring has been defined as a "relationship between an older, more experienced mentor and a younger, less experienced protégé for the purpose of helping and developing the protégé's career" (Kram, 1985;

Levinson, 1978; Ragins & Kram, 2007, p. 5). This definition is still broadly used today and was used for the purpose of this study.

"Formal mentoring programs differ greatly in nature" (Ehrich et al., 2004, p. 519). In the United States there was widespread adoption during the 1950s and 1960s to use field-based internships and other forms of clinical experiences as ways to improve the preparation of future leaders (Daresh, 1995). However, very little research was found on the impact of mentoring programs and quality design of mentoring programs. In fact, in *Research Base on Mentoring,* Daresh indicated that the research on mentoring is absent of theory-based research and is directed around problem-solving. In their research, primarily focused on mentoring teachers, (Ehrich et al., 2004) were able to identify the most common positive outcomes that mentees experienced; the most positive outcome identified centered on the idea of support. Mentees found that the mentor relationship gave them a support system that provided comfort. The second most common outcome was assistance with classroom teaching, and the third was contact with others and discussion. Their study also included the identification of negative factors associated with mentoring; a lack of time and a mismatch of professional experience or personality were identified. "While mentoring programs can influence a principal's behavior in positive and negative ways, many believed that mentoring programs appear to offer far-reaching benefits for mentors and mentees" (Ehrich et al., 2004, p. 531).

Operational Definitions

- **Social learning theory** – "emphasizes the prominent roles played by vicarious, symbolic, and self-regulatory processes in psychological functioning" (Bandura, 1977, p. vii).
- **Social cognitive theory** – "People are neither driven by inner forces nor automatically shaped and controlled by external stimuli. Rather, human functioning is explained in terms of a model of triadic reciprocality in which behavior, cognitive and other personal factors, and environmental events all operate as interacting determinants" (Bandura, 1986, p. 18).
- **Self-efficacy** – beliefs in one's capabilities to perform in a given situation (Bandura, 1997).
    - Five modalities of influence:
        - Enactive Mastery Experience – The most influential source of self-efficacy. Successes build self-efficacy and failures undermine self-efficacy (Bandura, 1997).
        - Vicarious Experiences – Evaluating performance based on the performance of others in similar situations (Bandura, 1997). A positive comparison increases self-efficacy.
        - Verbal Persuasion – Confidence in one's abilities expressed by others, which contributes to an increased self-efficacy (Bandura, 1997).
        - Physiological and Affective States – Stress levels and negative thoughts, which can have a negative effect on self-efficacy (Bandura, 1997).

        - Integration of Efficacy Information – The weighting of the modalities to determine the influence each have on behavior; this is very individualized based on the development of cognitive skills for processing information. (Bandura, 1997).

- **Instructional Leadership** – The ability to lead in the identified instructional categories.
    - Curriculum- The formal basis for instruction in a school building.
    - Staff Evaluation and Observation – Formal evaluation process and implementation, as outlined by the school district.
    - School Improvement – The process and implementation of school improvement, as outlined by the school district
    - Use of Data – The levels of sophistication of data use at the building level.
    - Culture Building – Relationships with students, staff, and fellow administration.
- **Mentoring Relationships–** (as used in this study) "A relationship between an older, more experienced mentor and a younger, less experienced protégé for the purpose of helping and developing the protégé's career" (Kram, 1985; Levinson, 1978; Ragins & Kram, 2007, p. 5).
    - Formal Mentoring – Established when a formal mentor is typically assigned as part of a student's educational program in administration. These mentors are typically given a set of criteria that the mentees needs to accomplish to complete their program. Sometimes a school district will assign a mentor to a new principal.

- Informal Mentoring – Established when informal mentors help to guide a potential principal and, "show them the ropes" of the job. Informal mentoring relationships are developed over the natural course of a career.
- Career functions – Aspects of the relationship that enhance career advancement (Kram, 1985).
- Psychosocial Functions – Aspects of the relationship that enhance sense of competence, identity, and effectiveness in a professional role (Kram, 1985).

Delimitations/Limitations

This study was limited based on the researcher's assumption that honest answers to the survey were given in all case, and because the researcher cannot control for the quality of the mentoring experiences that principals identify. Quality is difficult to quantify. Principals were asked to rank the quality of their mentoring experiences. With the wide variety of mentoring definitions and experiences possible, it was difficult to quantify with high reliability and validity. In addition, the data were collected at one point in time, and the researcher could not control the quality of responses. Principals have hectic schedules and may have rushed through the survey. The geography of the research study, which included participants only in the State of Michigan, presented a delimiting factor. Although the survey was piloted prior to the administration, a more rigorous validity test for the mentoring and self-efficacy scales would reveal more detailed results.

Summary

School leadership has become increasingly more complex. That school leaders should serve as instructional leaders, not just as generic managers, is widely accepted among educators (Fink & Resnik, 2001). In fact, the Educational Leadership Constituents Council

(ELCC) defined the expectations for school leaders in relation to instructional leadership competencies in the ELCC standards (Fiore, 2004). The movement from manager to instructional leader has created a gap in behavioral competencies for principals. In this study, social cognitive/learning theory has been used to identify how these behavioral competencies impact a principal's performance in instructional leadership efforts. Further, the theory of self-efficacy has been applied as it relates to the confidence level a principal feels in the identified instructional leadership competencies: curriculum, staff evaluation, school improvement, use of data, and building school culture.

Mentoring can impact a principal's self-efficacy in positive ways. In well-structured mentoring programs, the mentor and protégé mutually commit to work together toward an individually tailored development plan (Daresh, 2001). Psychosocial functions of mentoring enhance a sense of competence, identity, and effectiveness in a professional role, and career functions enhance career advancement. This study examined how mentoring and mentoring relationships impact a principal's self-efficacy in instructional leadership competencies. A thorough review of the literature, a description of the methods employed, and the results are included in the study.

Chapter Two–Literature Review

Principals of the 21st Century are required to be instructional leaders. School reform efforts and accountability measures have placed the principal at the forefront of achievement results in their schools. A principal's sense of self-efficacy is a judgment of his or her capabilities to structure a particular course of action to produce desired outcomes in the school he or she leads (Bandura, 1997). Several factors that may contribute to self-efficacy will be considered; however, mentoring relationships will be the primary focus of this study. Self-efficacy is a central element in social cognitive theory (Bandura, 1986). A person's behavior is can be said to be dependent on his or her perceived self-efficacy. A principal with a low sense of self-efficacy in instructional leadership would be likely to avoid this type of leadership, opting instead for a more managerial leadership style. Conversely, a principal with a high sense of self-efficacy in instructional leadership may lead instructionally and less managerially. Leadership behavior is discussed in Chapter Two as well as the theories of social cognition, social learning, and self-efficacy, and factors that may contribute to a principal's perceived self-efficacy.

Instructional Leadership

The role of the leader in schools has changed over the past 15 years. Strong leadership in schools is said to have a positive impact on student achievement and school improvement. Unfortunately, the variety of demands placed on school leaders has grown by mammoth proportions as described by Hess and Kelly (2007):

> School leaders are front-line managers, the small business executives, the battlefield commanders charged with leading their team to new levels of effectiveness. In this new era of accountability where school leaders are expected to demonstrate bottom

line results, and use data to drive decisions, the skills and knowledge of principals matter more than ever. (p. 244)

School reform efforts and the standards movement have paved the way for principals to acquire a sophisticated skill set. School leaders, who were once masters of a managerial skill set, now need to understand how instructional leadership fits into their practice. In addition to instructional responsibilities, much of the literature on principal leadership suggested that "principals should acquire the skills that remedy all of the defects of the schools in which they work" (Elmore, 2000, p. 14).

Studies have shown that a direct link exists between principal leadership behavior and student achievement (Hallinger & Heck, 1998). Further, learning leaders can have a positive impact on their staffs by modeling learning behaviors. "If principals want students and teachers to take learning seriously, if they are interested in building a community of learners, they must not only be head teachers, headmasters, or instructional leaders, they must, above all be head learners" (Barth, 1990, p. 72).

There is an abundance of research in the area of instructional leadership (Blase & Blase, 1999; DuFour, 2002; Barth, 1990; Fink & Resnik, 2001; Glickman, Gordon, & Ross-Gordon, 2004; Hallinger & Heck, 1998; Hallinger, 2005; Liu, 1984; Spillane, Halverson, & Diamond, 2004). A meta-analysis of the research led to the identification of the five categories of instructional leadership used in this study: curriculum, staff evaluation/observation, implementation of school improvement, use of data to improve instruction, and building relationships and a positive school culture.

Research of Blase and Blase (1999) on principal instructional leadership from a teacher's perspective identified two broad areas that positively impact the instructional

leadership in the school: talking with teachers to promote reflection and promoting professional growth. Principals have opportunities to work with their teachers to promote reflection and professional growth in the evaluation process. Talking with teachers about curriculum, instruction, and assessment takes time and a broad skill set. However, if the principal does not have high-perceived self-efficacy in observation, evaluation, curriculum, instruction, and assessment, he or she may not be able to effectively impact teachers to promote reflection and professional growth.

DuFour, (2002) discussed the movement from instructional leader to lead learner in his article, *The Learning-Centered Principal.* He contended that principals need to work with their teachers to evaluate the inputs (students) and design instructional strategies and programs around the inputs instead of focusing on the strategies and programs first. Principals who do not have the knowledge and efficacy in evaluation and assessment may be at a disadvantage when working with their teachers to evaluate their inputs and assist in designing instructional strategies. (Barth, 2002) supported this construct by advocating for principals to be the head learner in their institutions. He claimed that by focusing on their own learning, principals can better serve those they lead. Barth also believed that leaders who are not learning cannot lead a learning community.

Barth (1990) contended that principals who create a climate conducive to shared leadership and decision-making promote positive relationships and a positive school culture. He believed that great leaders have vision and the ability to rally their staff around this vision. Leaders who are used to leading with a managerial skill set may find it difficult to let go and lead collaboratively.

Fink and Resnik (2001) suggested that principals who are intentionally mentored and given professional development support through a network of leaders are able to effectively improve schools instructionally. The mentoring experience provides principals with a support network that contributes to their self-efficacy when working to instructionally improve their school. This would imply that principals who are not intentionally mentored may not have a feeling of support, thus contributing to a low self-efficacy in this area

Glickman (2002) believed that certain structures enhance teaching and learning: clinical supervision, peer coaching, critical friends, and classroom action research teams or study groups. He believed that a leader is able to develop teacher leaders through collaboration. In addition, Glickman et al. (2004) promoted the idea that instructional leaders must know their clientele. They must be able to assist in teacher development that impacts all teachers with varying characteristics. Thus, the principals must know each teacher in a way that allows them to diversify their strategies for teacher development. Principals with low self-efficacy in developing and maintaining a professional support network for their teachers may have difficulty leading professional development efforts.

Hallinger and Murphy (1987) defined instructional leadership in three broad categories: leaders define the mission of the school, manage curriculum and instruction, and promote school climate. Further, Hallinger, Leithwood, and Murphy (1993) brought several perspectives together in their book, *Cognitive Perspectives on Educational Leadership*. The common theme is that effective educational leaders are highly skilled problem-solvers, who develop expertise in leadership through reflective processes and study. Leaders who model reflective processes, impact those with whom they work. Teachers see the value in reflection

from their leader and may begin to use reflection to improve their instructional practices in the classroom.

Liu (1984) used two categories to define instructional leadership: direct and indirect. He defined direct leadership activities as staff development and teacher evaluation and monitoring and indirect activities as facilitating instruction, resource acquisition and building maintenance, and resolution of student problems. The direct leadership activities most closely align with improving instruction whereas the indirect activities tend to fall under the managerial tasks. Although both are important to a school organization's health, the leader needs to understand how to balance these activities effectively. Having a stronger sense of self-efficacy in the direct activities may result in a weak implementation of the indirect activities and vice-versa.

Spillane et al. (2004) synthesized the research on instructional leadership at a macro level into six functions: vision, culture, resource acquisition, teacher growth, monitoring instruction, and school climate. Their research further supported the instructional leadership categories identified in this study.

Five leadership categories will be explored in this study as a result of the meta-analysis: knowledge and understanding of curriculum, staff evaluation and observation, leading school improvement efforts, using data to improve instruction, and creating a positive school culture. These categories were identified based on the cross analysis of the research identified in this chapter.

Knowledge of curriculum. A principal's role in curriculum development, management, and monitoring has grown with the standard's movement. School principals should understand the curriculum and monitor the horizontal and vertical alignment of the

curriculum in their buildings. They need to be able to evaluate data on assessments to determine weak areas in the curriculum and work with central office administrators to modify curriculum to meet the needs of their students. In addition, a documented curriculum is generally very different from an operational curriculum. Principals need to monitor the operational curriculum taught in their buildings to determine consistency in implementation. This is largely done through formal and informal observations and curricular conversations with staff. Fiore (2004) stated that in order to turn schools around, principals must have an understanding of the curriculum that guides classroom instruction.

Staff evaluation and observation. Principals are responsible for performing observations and evaluating their instructional staff. These evaluations are required and intended to keep highly qualified teachers in the classroom. It is necessary for skilled principals to focus on improvement in these evaluations. Quality observations and debriefing sessions are components of the evaluation process. Most recently, a value-added approach to teacher evaluation has surfaced. The value-added model is one in which teachers are evaluated based on student achievement growth. This has been a controversial component of many evaluation programs across the United States.

Quality conversations regarding observations and student growth rely heavily on trust. Principals must have a trusting relationship with their staff to be able to make instructional improvements in teaching practice. "Trust allows individuals to focus on the task at hand and, therefore, to work and learn more effectively" (Tschannen-Moran & Hoy, 1998, p. 341).

Many schools are adopting or creating frameworks or rubrics to be used in teacher evaluation. *Enhancing Professional Practice, a Framework for Teaching,* by Charlotte

Danielson (2007) has been a popular model with schools across the United States. "In this framework, the complex activity of teaching is divided into 22 components clustered into the following four domains of teaching responsibility" (p. 1).

Domain 1: Planning and Preparation

Domain 2: The Classroom Environment

Domain 3: Instruction

Domain 4: Professional Responsibilities

In order for principals to effectively evaluate teachers, they need to be skilled in all evaluation components.

Leading school improvement. School improvement has been a focus in public education for decades. Accreditation programs responded by offering the ability to be accredited by their agencies if schools met their standards. North Central Accreditation (NCA) is a well-known accreditation system. Schools and districts that complete the NCA process have developed goals and strategies based on data to improve their organizations. They have also participated in an on-site external review of the system. The on-site accreditation team reviews the organization against the identified standards. The standards for NCA accreditation are based on research on effective schools and school systems (AdvancEd, 2012).

Standard 1: Vision and Purpose

Standard 2: Governance and Leadership

Standard 3: Teaching and Learning

Standard 4: Documenting and Using Results

Standard 5: Resources and Support Systems

Standard 6: Stakeholder Communications and Relationships

Standard 7: Continuous Improvement

Many states have their own accreditation systems through their departments of education. Schools are held accountable for submitting their school improvement plans to the state department of education, and many plans are used to justify grant expenditures. To effectively create, implement, and monitor school improvement plans, school principals must have a high level of knowledge about the process and be able to work collaboratively with their faculty. The school improvement field has consistently supported the importance of building capacity for change (Hopkins & Jackson, 2003), and principals who lead more managerially may not feel confident sharing leadership with their staff.

Using data to improve instruction. To be an instructional leader, school principals must use student achievement data and understand how to make these data meaningful for their staff. The standards movement made it essential for principals to understand the curriculum and how it is articulated across and through grades, courses, and content areas. It also prompted school leaders to begin discussing how the curriculum would be assessed. Data-driven decision-making became a household word for schools around the country. Today, assessment is the focus for schools in all aspects of their operation. More stringent external accountability systems have forced schools to look at internal accountability systems and question how they align to school operations. Multiple forms of assessment are being used and taught to educators, principals, and administrators all over the world. Formative assessment, summative assessment, benchmark assessment, common assessment, state assessment, national assessment, and other terms of measurement are primary foci in schools

today. Principals and teachers have been so focused on score improvement by their students that they have resorted to quick fixes instead of foundational learning (Senge, 2000).

Additionally, teacher evaluation systems are including the value-added model, which uses student achievement to determine the teacher's value, instructionally. This practice has caused teachers to begin to use data differently. With the external accountability systems at new heights, principals are required to be able to not only use data for student achievement and to inform instruction but also to use data to evaluate their staff, establish school improvement goals, and to monitor equity and consistency in curriculum implementation. According to Wilson (2004) developing coherent accountability systems depends on establishing a two-way information flow connecting classroom practice and external accountability measures. Principals are responsible for their own learning regarding the use of data and they are responsible for making sure their staff understands what data are relevant, how to use them instructionally, and how to communicate them to parents. "Effective teachers must see themselves not as passive dependent implementers of someone else's script but active members of research teams" (Schmoker, 2004, p. 225). These teams must include a collaborative effort with the principal as a leader in this area.

Building a positive school culture. Building relationships and a positive school culture creates an environment that is conducive to learning. School principals are instrumental in setting the tone in their building. "Three themes surfaced in a study conducted to determine what teachers would say about what the principals do at their schools to create and encourage the positive school climate: respecting students, communicating with students, and supporting students" (Harris & Lowery, 2002, p. 64).

Important to this ideal is establishing relationships between students and teachers, teachers and principals, teachers and their colleagues, and students and principals. Additionally, an environment that is safe and welcoming to families and community members helps to create a positive school culture. Establishing a positive school culture requires the principal to be an effective communicator and listener. Teachers must be able to trust the principal and their colleagues to effectively work in a collaborative manner (Hoy, Tarter, & Kottencamp, 1991).

Self-efficacy and Social Learning/Social Cognitive Theory

Self-efficacy. "Perceived self-efficacy refers to the beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1925, p. 3). In other words, self-efficacy is defined as the belief in one's ability to accomplish a specific task and produce a desired outcome. Principals with a high sense of self-efficacy will typically out-perform those with a low sense of self-efficacy. "It is a principal's self-perceived capability to perform the cognitive and behavioral functions necessary to regulate group processes in relation to goal achievement" (McCormick, 2001, p. 30). Self-efficacy beliefs are an element of social cognitive theory (Bandura, 1977, 1986, 1997). Self-efficacy is further defined within the context of social cognitive/learning theory.

Instructional leadership self-efficacy. Instructional leadership self-efficacy differs from self-efficacy in that we are specifically identifying how efficacious a principal is in the instructional leadership behaviors outlined in this study. The researcher identified how efficacious principals are in each of the categories: knowledge of curriculum, staff evaluation/observation, leading school improvement efforts, using data to improve instruction, and creating a positive school culture and then correlated this with their

mentoring experience and other factors that may contribute to their self-efficacy. Although principals can have high levels of self-efficacy in general, they may not exhibit these behaviors when they are involved in instructional leadership. If principals learn through mastery experiences, vicarious experiences, verbal persuasion, physiological and affective states, and the integration of efficacy information, one may conclude that the level of these experiences through formal and informal mentoring may impact their self-efficacy in the identified categories. Additionally, if a principal responds to the career and psychosocial aspects of mentoring they may have high levels of self-efficacy in certain leadership characteristics.

Social learning / social cognitive theory. In the social cognitive view, people are shaped by their inner being but are also shaped by external forces. Social cognitive theory built upon Bandura's (1977) social learning theory, which championed the idea that people can learn by observing the behavior of others. Modeling is an important aspect of learning in social learning theory. By observing other people and their social cues, people imitate behavior, thus learning from modeled behavior. Additionally, symbols are used as a means of explaining learning. "The capacity to use symbols provides humans with a powerful means of dealing with their environment" (Bandura, 1977, p. 13). In addition, included in social learning theory is the idea that people can control their own behaviors. This is referred to as self-regulatory capacities. This control allows people to draw on their experiences, observations, and modeling and to process their thoughts before they act. They are able to self-reflect on previous decisions and apply this to their actions. Another important aspect of social learning theory is reciprocal determinism, which proposed the idea that the personal, behavioral and environmental condition work together continuously to induce behavior. The

interactions are not one-way, but reciprocal and all have an influence on each other. This is referred to as the Reciprocal Causation Model (RCM), as seen in Figure 2 (Bandura, 1977). This idea led to Bandura's further work on social cognitive theory, which expanded on his research in social learning theory and identified the RCM as the basis for social cognitive theory

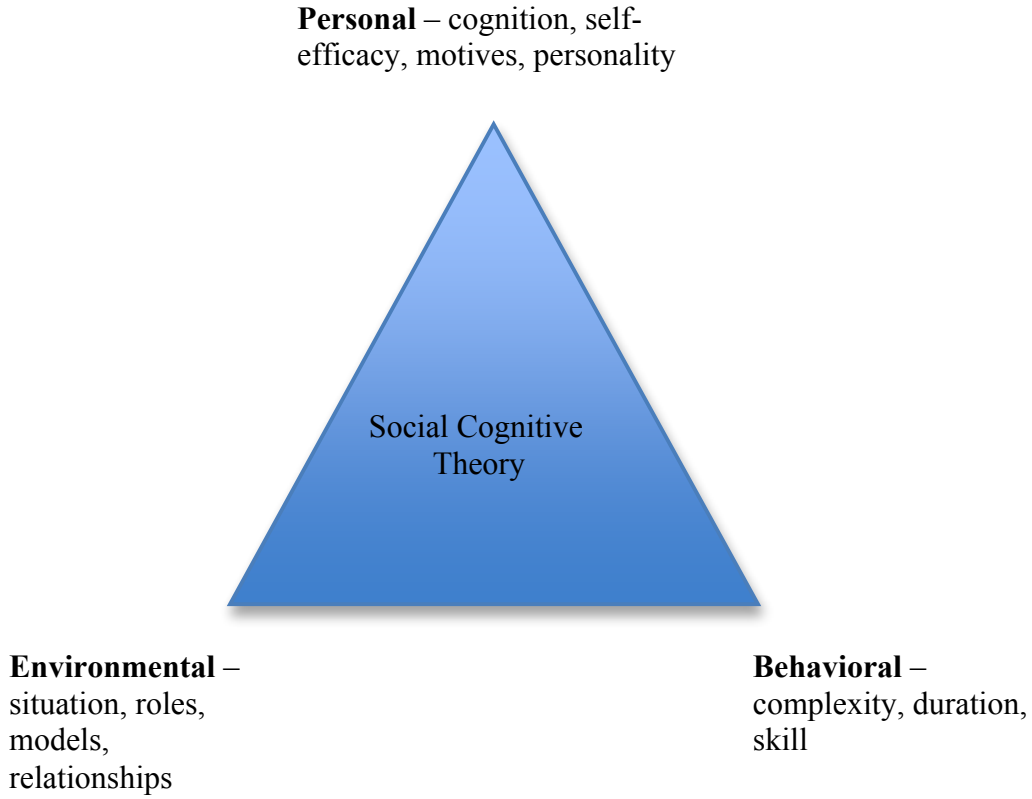


Figure 2. Reciprocal Causation Model (Bandura, 1977)

In both of these works, *self-efficacy* is an important element. "It is important to distinguish between social cognitive theory and the self-efficacy component of the theory, which operates in concert with other determinants in the theory to govern human thought, motivation, and action" (Bandura, 1997, p. 34). Self-efficacy resides in the personal factor of the RCM. There are five main sources of efficacy influences: enactive mastery, vicarious

experience, verbal persuasion, physiological and affective states, and the integration of efficacy information.

Enactive mastery. Enactive mastery is the idea that people who experience success tend to have a higher level of self-efficacy than people who experience failure. Even greater, if a person experiences success after having gone through difficulties, he or she tends to have an even greater sense of self-efficacy. "If people experience only easy successes they come to expect quick results and are easily discouraged by failure" (Bandura, 1997, p. 80). High-level gymnasts work to master a skill only to be given another skill out of their reach to master again. Those who experience success easily will have a more difficult time conquering more difficult tasks when they fail. As the gymnast experiences adversity in conquering the skills, they acquire the knowledge needed to be successful on future attempts, unless they give up. "Mastery of difficult tasks conveys new efficacy information for raising one's beliefs in one's capabilities" (p. 83). Enactive mastery is reliant upon success.

Vicarious experience. Vicarious experience is the ability of one to learn through the actions of others; this is considered modeling. Self-efficacy beliefs can be reinforced if a person witnesses another person's behavior and compares it to his or her own. "People appraise their own capabilities in relation to the attainments of others" (Bandura, 1997, p. 86). "Through their behavior and expressed ways of thinking, competent models transmit knowledge and teach observers effective skills and strategies for managing environmental demands" (Bandura, 1994, p. 72).

There are many vicarious modes of influence: effective actual modeling, symbolic modeling, videotaped self-modeling or cognitive self-modeling. People compare themselves to others to help determine their success or failure in a particular attainment. This is effective

actual modeling. If the model is more closely aligned with their abilities they are more likely to feel more efficacious over the attainment. Conversely, if people see the models as very different from themselves they are not particularly influenced by the behavior (Bandura, 1997).

Models can demonstrate the success of certain tasks, which will contribute to the observer's sense of efficacy over these tasks, especially if the model closely compares to the observer. Sometimes observed failure can raise the self-efficacy of an observer, especially if they can learn from what the model has done incorrectly. Symbolic modeling can come in the form of observing others through media and learning from their successes or failures. With the increased availability of information through technology, symbolic modeling is available quickly and easily. Observers no longer have to directly experience the vicarious learning but can watch it on television or through the Internet. Self-modeling can be used by videotaping oneself and learning from reviewing the video. Athletes use this form of vicarious learning to determine flaws in their form. For example, back to the high-level gymnast; suppose the observing gymnast noticed another gymnast fail on a particular skill because of an incorrect body position. The observing gymnast may learn from this mistake and feel more efficacious over the task than they were prior to the observed behavior. By the same token, observing a higher-level gymnast struggle with a particular task may contribute to a lower sense of self-efficacy by the lower-level observer because they may feel that if the more skilled gymnast cannot execute the skill successfully, the observer will also expect to fail. This same gymnast may learn from watching a video of another gymnast across the world or by viewing their own performance through video; all contribute to a person's ability to become more or less efficacious over their own behaviors.

Verbal persuasion. Verbal persuasion refers to the idea that people are more likely to believe in themselves if others believe in their abilities as well; this can come in the form of verbal persuasion. "People who are persuaded verbally that they possess the capabilities to master given tasks are likely to mobilize greater effort and sustain it than if they harbor self-doubts and dwell on personal deficiencies when difficulties arise" (Bandura, 1997, p. 101). Feedback is the common mechanism for receiving verbal persuasion. Jourdan (1991) found that when participants received feedback on attainments, as it relates to a percentage accomplished toward the attainment, they were more efficacious than when they received feedback on how far they had to go to achieve the attainment. Criticisms tend to lower self-efficacy while positive reinforcement increases self-efficacy. Sometimes a negative verbal persuasion may be discounted if the person being evaluated does not believe that the evaluator has the knowledge and ability to judge his or her performance. This is particular important in the principal/teacher relationship. Verbal persuasion in itself cannot be the sole component of developing self-efficacy but should be used in combination with the other efficacy influences. The gymnast receives verbal persuasion when they are evaluated at their competition by the judges, which affirms or disaffirms their behavior. The feedback they receive can alter their self-efficacy by diminishing it by low scores or by supporting it with high scores.

Physiological and affective states. Self-efficacy can be influenced by physiological and affective states. If people feel stress, they may relate these feelings to poor performance, which ultimately impacts self-efficacy. Mood is another determiner of efficacy as it relates to physiological and affective states. Mood also affects people's judgments of their personal efficacy. Experiencing success while in a positive mood promotes a high-level of perceived

self-efficacy, whereas failures while in a negative mood breed low-levels of perceived self-efficacy (Wright & Mischel, 1982). "Positive mood enhances perceived self-efficacy and a despondent mood diminishes it" (Bandura, 1994, p. 72).

Some people interpret their stress as a positive motivator for performance, whereas others, typically those with low self-efficacy, interpret their stress as a preliminary to failure. It all depends on their past experiences with the type of stress they feel. Physiological and affective states do not contribute to our self-efficacy alone but are key indicators that prompt our reactions and interpretations of these states that influences self-efficacy. Because everyone reacts to stressful situations differently, it is important for the person to understand and know their own body in terms of the physiological changes that occur in these situations. To continue our comparison to the gymnast, some gymnasts may experience shortness of breath or shaking prior to a performance on the balance beam but, after they begin, these reactions go away. It is important that this gymnast knows that this is how his or her body reacts and will be more efficacious because of the knowledge of his or her affective state in this situation.

Integration of efficacy information. The fifth source of efficacy influence refers to how a person integrates the four other influences to determine their efficacy judgments. How a person uses the information retrieved from the other efficacy sources differs depending on how much value they place on each, how they interpret their interrelatedness, and how they weight each influence.

Contributing Factors

Several factors may contribute to the results of the self-efficacy survey. A principal's mentoring experiences along with their personal and school demographics may influence their ratings in the self-efficacy portion of the survey.

Mentoring influences. The definition of mentoring as used in this study has been identified as a "relationship between an older, more experienced mentor and a younger, less experienced protégé for the purpose of helping and developing the protégé's career" (Kram, 1985; Levinson, 1978; Ragins & Kram, 2007, p. 5).

The seminal research on mentoring dated back to 1978 with the publication of, *The Seasons of a Man's Life*, by Daniel J. Levinson (1978). This book was based on a 10-year study that identifies a theory of adult development as Levinson and his colleagues studied the root issues of adult life. They attempted to answer the questions: What are the essential problems and satisfactions, the sources of disappointment, grief and fulfillment? Is there an underlying order in the progression of our lives over the adult year, as there is in childhood and adolescence? While researching the phases and transgressions of adulthood, Levinson found that a man's relationships with other people greatly influence the man he will become. Levinson talked about the variety of relationships at different stages of a man's life and the importance these relationships play on his development. Kathy Kram (1985) built upon this idea and studied relationships further as they pertained to the work life in her book, *Mentoring at Work.* Kram looked at mentoring relationships in the context of a junior and senior manager in a corporate setting. What she found inspired her to continue to research mentoring relationships in a broader context. She discovered that mentors serve two distinct functions: career functions and psychosocial functions. Career functions involve a range of

behavior that helps protégés *learn the ropes* and prepare them for hierarchical advancement within their organizations. "Psychosocial functions build on trust, intimacy, and interpersonal bonds in a relationship and include behaviors that enhance the protégé's professional and personal growth, identity, self-worth, and self-efficacy" (Ragins & Kram, 2007, p. 5).

More specifically career functions are those that enhance career advancement. "Mentors provide sponsorship, exposure, coaching, protection, and challenging assignments" (Kram, 1985, p. 23). According to Kram, mentors who provide sponsorship express confidence in the protégé's abilities. The sponsorship gives them credibility so that others see them as a leader. Exposure and visibility are also benefits that a protégé might gain from a mentoring relationship. As protégés are given responsibility, others see them as leaders and managers. Mentors also coach their protégés. This function allows junior managers to learn from their mentors and seek advice from them while feeling support as they learn new aspects of their career. In addition, the mentor provides protection to their protégé; mentors guide the protégé but take full responsibility for the protégé's actions while under the mentor's guise. Finally, career function mentors provide their protégés with challenging assignments. These assignments give the protégé an opportunity to show that they are ready for a career change. Experience in leading or carrying out challenging assignments demonstrates the capabilities of the protégé.

The psychosocial function of mentoring, according to Kram (1985), consists of role modeling, acceptance and confirmation, counseling and friendship. Contributing to a sense of self-worth or efficacy, this function seems to align to social learning theory and self-efficacy theory as outlined by Bandura (1977). Role-modeling provides a protégé with an

example of what he or she might become. Protégé's look up to mentors and have strong admiration for them. An emotional attachment is formed by the protégé with the mentor leading to a successful match. Mentors also provide acceptance and confirmation of their protégés while they learn their position, which leads to a nurturing relationship. When a protégés feel acceptance and confirmation, they are more likely to see themselves as individuals and are more willing to express their opinions even if they are not the opinions of the mentor. Mentors, in the psychosocial function, also serve as counselors to the protégé. "Junior managers rely on the mentor for counseling when they have personal concerns that may interfere with a positive sense of self in the organization" (Kram, 1985, p. 36.) Finally, mentors in the psychosocial function, provide friendship to the protégé. These friendships allow protégés to feel accepted by the organization and more comfortable as they learn the aspects of their career. Although, Kram's (1985) work is not specifically focused on educational institutions, it is the most prominent work on mentoring to be found in the literature. There are significant parallels to her work on mentoring in a corporate setting and mentoring for principals.

Daresh and Playko (1990) supported mentoring as a vital part of a principal's developmental process. Does mentoring impact a principal's self-efficacy? Considering the efficacy influences outlined in this paper, one would tend to believe that principals who have an informal or formal mentor or multiple mentor relationships would be exposed to vicarious experiences that may influence their self-efficacy.

Mentoring is used in school districts in a variety of ways. Some school districts have formal mentoring programs in which new administrators are assigned a formal mentor to help guide them as they learn the numerous tasks involved in a principalship. Some school

districts do not follow a formal mentoring process but provide support to their new principals through an informal mentoring process. The informal mentoring process may involve identifying several individuals who may provide support without the identification of one particular mentor. Informal mentors may also be identified as friends; formal mentors are typically assigned and may or may not be considered a friend. Whereas both are valuable, it is important to consider the mentor in the relationship as much as the mentee. In their study, Daresh and Playko (1990) identified important characteristics for effective mentors and noted that not all experienced administrators are capable of serving as mentors. The most important characteristics for effective mentors are the following:

- Mentors need to be able to ask the right questions of candidates and not just provide the *right* answers all the time
- Mentors must accept *another way of doing things* and avoid the temptation to tell candidates that the *right way* to do something is *the way I used to do it*.
- Mentors should express the desire to see people go beyond their present levels of performance, even if it might mean that they are able to do some things at a higher level than the mentor.
- Mentors must model the principle of continuous learning and reflection.

The National Board for Educational Leadership and Policy Standards outlined the competencies that are required of administrators in the Education Leadership Program Standards of the Educational Leadership Constituent Council (ELCC), (http://npbea.org/2012/06/2011-elcc-building-level-standards/). The national board also recognized that "states can do much more to create standards-based mentoring programs for educational leaders "(Council for Chief State School Officers, 2008, p. 17). It is important to

distinguish the process by which mentors are used. A formal mentor is typically assigned as part of a student's educational program in administration. These mentors are typically given a set of criteria that the mentees need to experience to complete their program. Informal mentors are those who help to guide potential principals and *show them the ropes* of the job. The quality of either experience can vary.

Malcolm Knowles (2002) referred to adult learning in much the same way. He maintained that adults learn both formally and informally. Formal avenues for learning are characterized by established institutions such as universities, high schools, trade schools, and those that offer credit toward a degree, whereas informal avenues for learning are characterized by clubs, community centers, industries, and churches. Further, Knowles defined informal learning in the form of lectures, forums, clubs, and programs that cost less. It is important to distinguish the types of mentoring experiences principals have had to identify a correlation between mentoring and self-efficacy.

"Because mentoring scholars have discovered that different mentoring functions predict different protégé outcomes" (Ragins & Kram, 2007, p. 5), it would be important to not only identify whether principals have had a mentoring relationship, but what type of relationship they have had: career or psychosocial, formal or informal.

In this study, the researcher identified the mentoring experiences of the subjects. Formal and informal mentoring were defined, and the subjects were given the opportunity to describe the quality of the mentoring experiences they acquired and rate the value of their mentoring experiences. Questions were focused on the career and psychosocial functions to determine any correlation to Kram's (1985) work on mentoring. Through structural equation modeling, a correlation between strong mentoring influences, career and/or psychosocial,

formal and/or informal, and positive self-efficacy in the area of instructional leadership were explored.

Gender, school type, school level, race/ethnicity, experience/tenure, age, educational level, and school size. Although the focus of the study was on the impact of mentoring and mentoring experiences relative to a principal's self-efficacy, the researcher controlled for other variables that may have impacted the results of the survey. A control for gender allowed the research to examine any extant correlations between gender and self-efficacy. Males seem to demonstrate a more self-congratulatory attitude when they achieve something, whereas females tend to be more modest. This observation may suggest that males have a greater perceived self-efficacy than females (Pajares, 2002), which is why a control for gender was employed. Age may contribute to a principal's ranking of self-efficacy just as it does with academic motivation (Schunk, 2011). Certain age groupings were found to be more efficacious than others in relation to academic motivation. School type is also a contributing factor. The wide variety of school types is primarily dependent on geographic location and academic performance. A correlation between low socioeconomic status and low academic performance was shown in the research (Sirin, 2005). Principals working in schools that are located in a low socioeconomic boundary may have similar self-efficacy rankings. Controlling for levels of experience allowed the researcher to determine whether experience impacts levels of self-efficacy in the instructional leadership categories. The researcher also controlled for race/ethnicity to determine if there was a correlation between this factor and self-efficacy in the sample. Cultural differences may contribute to a person's perceived self-efficacy (Scholtz, Gutierrez-Dona, Sud, & Schwarzer, 2002). Because self-efficacy is partly determined by successful and unsuccessful experiences, one

might predict that more experienced principals with a higher level of educational experience may have a stronger sense of self-efficacy (Bandura, 1997).

Summary

The evolution of the school leader's role to instructional leader over the past decade prompted the researcher to consider the impact this has had on thousands of principals across the state and nation. Social learning theory assisted in understanding how people learn and how they become efficacious in their behavior. Through social learning and self-efficacy theories, the researcher sought to understand how mentoring and mentoring relationships contribute to a principal's self-efficacy in the identified instructional leadership behaviors. Although many factors can contribute to an individual's self-efficacy, the focus on mentoring was prevalent in the study.

Chapter Three – Methods

Introduction

The purpose of this study was to investigate whether there is a significant relationship between a principal's sense of self-efficacy in instructional leadership and his or her mentoring experiences. Data were collected to determine if there was any resulting relationship in principals' perceived self-efficacy in identified instructional leadership categories and gender, school type, experience, age, educational level and area of study. The study compared results of a self-efficacy survey for principals, which focused on identified instructional leadership categories and the level of mentoring or mentoring relationships these principals experienced. Questions were developed to determine the level, quality, and type of mentoring experiences the principals acquired.

The causal-comparative quantitative design of the study used inferential statistics, confirmatory factory analysis (CFA), and structural equation modeling (SEM) to analyze the data. "SEM is a statistical technique that seeks to explain the covariance among a set of variables (McQuitty & Wolf, 2013, p. 59)." A cross-sectional survey was used (Creswell, 2009); specifically, a Web-based survey using Survey Monkey© was administered to all principals in K-12 traditional public school buildings in the State of Michigan; N was approximately 4,300. Email addresses were obtained through the Michigan Department of Education's Educational Entity Master for 2013-2014. The survey was divided into two sections; one section was used to collect data that measures factors that contribute to perceived self-efficacy in the instructional leadership behaviors. The factors identified are: mentoring/mentoring experiences, gender, school type, experience, age, race/ethnicity, and

educational level. The level of mentoring experiences was the focus of questions that were designed to understand the quality of the mentoring experiences.

In the second section of the survey, questions sought to identify the level of perceived self-efficacy a principal has in the following identified areas: knowledge of curriculum, staff evaluation/observation, leading for school improvement, data use, and culture building. The purpose of the survey examined how mentoring relations impact a principal's perceived self-efficacy; however, some questions controlled for the other variables.

The dependent variable is the perceived self-efficacy in instructional leadership categories, and the independent variables are the factors that may contribute to principals' perceived self-efficacy; moreover, mentoring and demographic variables. The primary focus of the independent variable is on mentoring experiences, while controlling for demographic variables. Social cognitive theory (Bandura, 1996) was used as a theoretical base for the research, with self-efficacy as a main component in the developed conceptual frame. Bandura's work in the area of self-efficacy was tested as the researcher analyzed the outside factors that may have contributed to the identified subject's perceived self-efficacy.

A pilot study was used to determine design inefficiencies and to test logistics prior to the large-scale study. The survey instrument (see Appendix A) was administered to K-12 principals in local public school districts in Washtenaw County, Michigan. The pilot survey allowed the researcher to test the accuracy of the survey, clarity of the directions, and logistics of data collection. Data from the pilot survey were examined for validity, reliability, and readability prior to presenting to the Human Subject's Committee at Eastern Michigan University. Participants in the pilot survey were asked to provide feedback on the time it took

to complete the survey, ease of use, and clarity of questions. The feedback from the participants uncovered some misunderstandings regarding the sections of the survey and whether the participants should answer based on their current position or previous position. More clarity for each section was suggested. Thus, an informational page was inserted before each section. One principal caught a flaw in the survey design, which prevented him or her from answering some of the questions. In addition, participants noted that it took about 15 minutes to take the survey. When modifications and other revisions were made to address identified concerns, enhance clarity, and to prevent difficulties for future participants, the revised survey instrument was sent to all K-12 public school principals in the State of Michigan.

Descriptive statistics, Confirmatory Factor Analysis, and Structural Equation Modeling were used to analyze the survey results to determine if there is a significant relationship between a principal's sense of self-efficacy in instructional leadership and his or her mentoring experiences or if there were any resulting relationship in a principal's perceived self-efficacy in identified instructional leadership categories and gender, school type, experience, age, educational level and area of study.

Research Questions and Null Hypothesis

The study was guided by the following research questions and null hypotheses:

Q 1. Is there a significant relationship between a principal's perceived sense of self-efficacy in instructional leadership and his or her mentoring experiences?

Null Hypothesis: There will be no relationship between a principal's perceived self-efficacy in the identified instructional leadership categories and their mentoring experiences.

Q 2. Is there any resulting relationship in a principal's perceived self-efficacy in instructional leadership and gender, school type, school level, experience (tenure), age, educational level, school size, and race/ethnicity?

Null Hypothesis: There will be no resulting relationship between a principal's perceived self-efficacy and the identified instructional leadership categories.

Research Design and Approach

A quasi-experimental causal-comparative quantitative design using structural equation modeling was used to determine if any relationship exists between a principal's mentoring and mentoring relationships and perceived self-efficacy in defined instructional leadership behaviors.

Data Collection

The relationship between mentoring and mentoring relationships and perceived self-efficacy in instructional leadership were studied by surveying current building administrators from across the State of Michigan. The survey also included questions that controlled for gender, school type, experience/tenure, age, educational level, school size and race/ethnicity. Survey Monkey© was used to administer the online survey. The system controlled for multiple submissions by only allowing for one submission per computer. A reminder email was sent after the first and second week after the survey is administered, and the survey was closed three weeks after initially administered.

Access to an email list of all principals in the State of Michigan was made available from the Michigan Department of Education Educational Entity Master. Identified principals were asked via email to participate in the study. An informed consent letter explaining the study (Appendix B) and a link to the survey in Survey Monkey© were included. The survey

was entirely voluntarily and submitted anonymously. The researcher hoped to identify and collect data from a significantly large sample size of at least 200 to improve the validity and reliability of the data.

Instrumentation

The survey was developed and questions were modified from the School Administrators Efficacy Scale (SAES) (NCPEA, 2007). The SAES was utilized as a resource to develop a comprehensive scale tailored specifically for this study. The researcher developed mentoring questions specific to the study, which were based on Kathy Kram's (1985) career and psychosocial divisions of mentoring and Bandura's (1997) vicarious and verbal persuasion facets of his self-efficacy theory. Permission to use the SAES was given via email by Dr. Dan McCollum (September 26, 2013), the author of the survey (see Appendix C).

Data Analysis

Structural equation modeling and path analysis were used to analyze the data where the principal's self-efficacy in instructional leadership categories is the dependent variable and the independent variables are the factors that may contribute to their perceived self-efficacy (see Figure 3). Mentoring is the primary focus of the study, although controlling for other variables were deemed important. The dependent variable is regarded as completely determined by some combination of variables in the system but will focus on perceived self-efficacy. Structural equation modeling is comparable to common statistical methods, such as correlation, multiple regression, and analysis of variance (ANOVA). A path diagram breaks down the SEM into very basic conceptual parts (see Figure 3), although SEM further defined the multiple variables involved to create a more formal model. "One difference between

SEM and other methods, and an advantage of SEM allowed for the use of multiple measures to represent constructs and addresses the issue of measure-specific error (Weston & Gore, 2006, p. 723)." SEM is really a combination of a measurement model and a structural model. "The measurement model describes the relationships between observed variables and the construct or constructs those variables are hypothesized to measure. In contrast, the structural model describes the interrelationships among the constructs. Used together, they are called a full structural model (Weston & Gore, 2006, p. 724)." Results from the survey were analyzed through the use of SPSS and AMOS statistical software. Running the data through the SPSS software provided an observed item correlation or covariance matrix and basic descriptive statistics, and then the use of AMOS provided an evaluation of the model and the scale items used to measure the constructs.

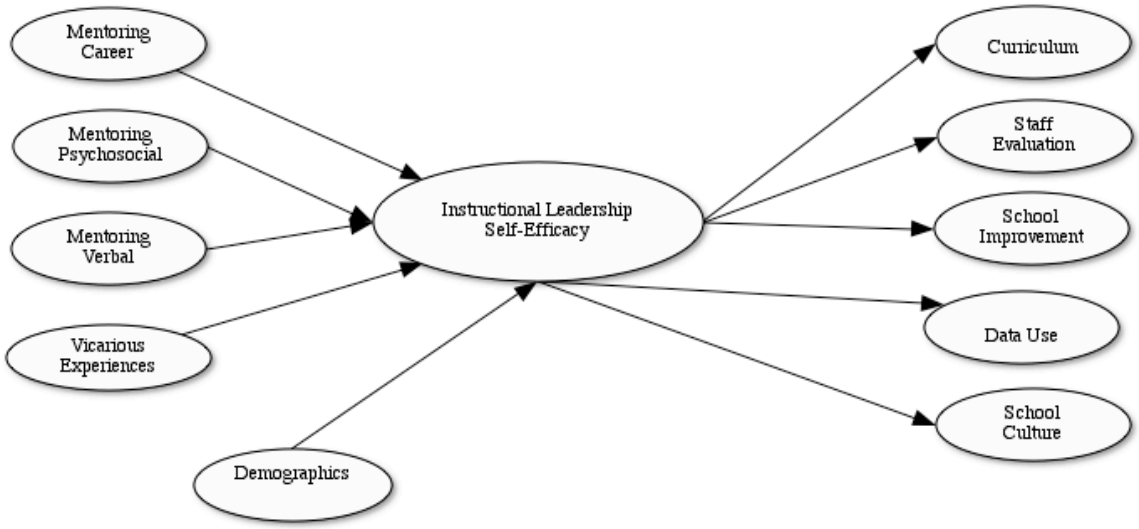


*Figure 3***.** Structural Equation Model (SEM)

Ethical Considerations

Ethical issues must be considered whenever primary research is employed (Krathwohl, 2009). Eastern Michigan University's Human Subjects Review Committee reviewed and approved the study prior to distributing the survey (see Appendix D). Participants received information on the purpose of the study and confidentiality agreements (see Appendix A). Principals were informed that participation was voluntary and the data were collected anonymously and reported anonymously. Assurance was provided to the subjects regarding data security.

Summary

The purpose of this study was to investigate whether there is a significant relationship between a principal's sense of self-efficacy in instructional leadership and his or her mentoring experiences. The dependent variable in this study was identified as the perceived self-efficacy in instructional leadership categories and the independent variables are the factors that may have contributed to principals' perceived self-efficacy; moreover, mentoring and demographic variables. A cross-sectional survey was used (Creswell, 2009); specifically, a Web-based survey using Survey Monkey© was administered to all K-12 traditional public school building principals in the State of Michigan. A causal-comparative quantitative design using inferential statistics and structural equation modeling (SEM) was used to analyze the data. Social cognitive theory (Bandura, 1996) was used as a theoretical base for the research with self-efficacy as a main component in the developed conceptual frame. Bandura's work in the area of self-efficacy was tested as the researcher analyzed the outside factors that may have contributed to the identified subject's perceived self-efficacy. The findings of this study will add to the body of research on self-efficacy and mentoring in

public schools and may assist schools and universities in developing effective mentoring programs that impact instructional leadership.

Chapter Four–Presentation and Analysis of Data

The purpose of this study was to investigate whether there is a significant relationship between a principal's sense of self-efficacy in instructional leadership and his or her mentoring experiences. Data determined relationships in principals' perceived self-efficacy in identified instructional leadership categories and gender, school type, experience, age, educational level, and area of study. A self-efficacy survey for principals focused on identified instructional leadership categories and the level of mentoring or mentoring relationships these principals experienced. Questions were developed to determine the level and quality of mentoring experiences the principals acquired.

The results of this research contributed to the existing knowledge about the effects of mentoring programs on perceived instructional leadership self-efficacy and may be beneficial school district and building leaders and college and university administrators across the state and country as they strive to improve principal preparation, mentoring, and instructional leadership programs. Data were gathered from principals in the State of Michigan through the use of an online survey. The data were analyzed through the use of descriptive and inferential statistics, confirmatory factor analysis, and structural equation modeling.

Description of the sample.

Variable summaries. Table 1 shows frequencies of responses for the sample demographics.

Table 1

Frequencies

	N	Percent
Gender		
Male	276	54.9
Female	227	45.1
Age		
24 to 34	23	4.6
35 to 44	192	38.0
45 to 54	173	34.3
55 to 64	109	21.6
65+	8	1.6
Setting		
Rural	247	48.6
Suburban	196	38.6
Urban	65	12.8
School Type		
Elementary	230	45.5
K-8	15	3.0
Middle School	87	17.2
High School+Middle School	27	5.3
K-12	23	4.5
High School	124	24.5
R's Education		
Master	332	65.4
Educational Specialist	135	26.6
Ph.D.	41	8.1
Race		
Non-African American	474	94.0
African American	30	6.0
Tenure		
Less than 1 year	26	5.1
1 to 3 years	81	16.0
4 to 6 years	119	23.6
7 to 10 years	107	21.2
10+ years	172	34.1

Note. N = 505. Last column is percentage of non-missing

[1] An additional respondent was dropped when the regression diagnostics revealed an outlier, and closer inspection discovered that the respondent simply clicked the same response for all mentoring and self-efficacy items without giving much apparent thought to the responses.

The total N was 505, although only 295 completed the mentoring scale questions. The sample had slightly more male respondents than females, with the modal age range between 35 and 44. Nearly half of respondents were from rural schools and taught at the elementary level. More than half of subjects had a Master's Degree, with the remaining having a Ph.D. or other education specialization. Only 6% of respondents were African American. Most respondents had received tenure more than a year prior to the survey, with the modal year range being more than ten years prior to the survey.

The primary variables of interest are mentoring and self-efficacy, with both concepts being measured with a unique, multi-question instrument derived from existing surveys. The a priori expectation behind those question choices was that the 12 items tapping mentoring would form four distinct subscales: career, psychosocial, vicarious, and verbal mentoring. It was also expected that the 27 items tapping self-efficacy would fall into five separate subscales: curriculum, staff evaluation, school improvement, data use, and positive culture.

Exploratory factor analysis. An exploratory factor analysis was used to determine the relationships among the variables. The results from running a principal axis factor analysis with oblique (oblimin) rotation on the mentoring items are shown in Table 2. A screeplot and check of eigenvalues greater than one suggested a two-factor solution. The entries in the table represent the correlations between each item and the two factors, meaning that the numbers can range from -1 to +1. The largest correlation for the items is highlighted in bold. The results show that the loadings do not demonstrate any pattern that lines up with the a priori expectations. All but three questions load most highly on the first factor. In addition, although the eigenvalues suggested a two-factor solution, the two factors are highly

correlated (r = .563). Thus, the results suggest that it may be reasonable to combine all of the items into a single scale.

The exploratory factor analysis in Table 2 was complemented by confirmatory factor analyses that were run to return model fit statistics and to examine modification indices that may suggest how the model could be improved. The model fit indices for the a priori model were poor. The results for the two-factor model suggested by Table 2 were only slightly better. The modification indices from the latter model suggested further improvements could be made if adding a loading for the second and third career items on the first factor, which is again consistent with a one-dimensional interpretation of the items. The mentoring questions were therefore combined into a single mentoring scale by taking the mean across the items.

Table 2

Mentoring Scale - Factor Structure Matrix

Item	A priori subscale	Factor 1	Factor 2
My mentor was more of a coach who guided me in understanding the roles of the principal	Career	**.613**	.462
My mentor gave me challenging assignments to help develop my skills as a leader	Career	.330	**.694**
My mentor helped to sponsor the advancement in my career	Career	.601	**.712**
My mentor was someone who I could trust for advice and support	Psychosocial	**.830**	.422
I would consider my mentor a trusted friend	Psychosocial	**.749**	.395
My mentor provided counseling advice to me	Psychosocial	**.687**	.354
My mentor modeled leadership behaviors that I use in my career	Vicarious	**.779**	.523
I worked alongside my mentor while learning the tasks of the job	Vicarious	**.553**	.409
I am very similar to my mentor	Vicarious	.520	**.781**
My mentor gave me verbal encouragement and feedback	Verbal Persuasion	**.730**	.412
My mentor had the knowledge and skills to help guide my development as a principal	Verbal Persuasion	**.780**	.413
I would consider my mentor to be a skilled leader in their position	Verbal Persuasion	**.797**	.426

Note. Principal factor extraction with oblique (oblimin) rotation. Entries are correlations between items and factors.

Table 3 presents the results of performing an exploratory factor analysis on the self-efficacy items. The screeplot and eigenvalues suggested a three- or four-factor solution, with the fourth eigenvalue being just above one (1.01). The three-factor model was chosen for parsimony. The factor structure matrix in the table shows that the items tied to curriculum, staff evaluation, and school improvement items all have the largest correlations with the first factor. The data use items form their own separate factor, as do the positive culture items. This suggests that the questions collapse into three, rather than five, subscales.

Table 3

Self-Efficacy Scale - Factor Structure Matrix

Item	A priori subscale	Factor 1	Factor 2	Factor 3
I am able to understand the process of curriculum design, implementation, and evaluation	Curriculum	**0.685**	-0.343	0.55
I am confident that I possess the skills needed to implement the effective use of resources so that priority is given to support student learning	Curriculum	**0.747**	-0.519	0.515
I am confident in my understanding of all of the instructional programs in my school	Curriculum	**0.639**	-0.367	0.415
I am confident in my ability to monitor the classroom curriculum to see that it covers the school's curricular objectives	Curriculum	**0.681**	-0.372	0.533
I understand how to align curriculum in all content areas	Curriculum	**0.635**	-0.28	0.557
I am able to develop a systematic process for mentoring teachers on my campus	Staff Evaluation	**0.565**	-0.478	0.352
I understand the development of a professional growth plan	Staff Evaluation	**0.703**	-0.557	0.474
I am confident in my abilities to evaluate my staff	Staff Evaluation	**0.763**	-0.552	0.41

Table 3 *Continued*

I am confident in my knowledge of instruction when facilitating conversations with my staff	Staff Evaluation	**0.761**	-0.525	0.474
I possess the ability to facilitate meaningful dialogue to assist staff in their own professional growth	Staff Evaluation	**0.775**	-0.573	0.441
I have the ability to lead staff to set professional goals based on reflective practice	Staff Evaluation	**0.769**	-0.574	0.453
I am confident in my skills to assess the staff development needs of the school	School Improvement	**0.744**	-0.527	0.564
I am confident in my knowledge of best-practice research related to instructional practices	School Improvement	**0.652**	-0.446	0.606

Summary statistics for the four scales as well as reliabilities (Cronbach's alpha) are shown in Table 4. The reliabilities are very good for each of the scales, with the lowest being .873 for the data use scale and the highest being .941 for the general (enactment) self-efficacy scale. The mean scores, highlighted in bold in table 4 demonstrate the mean ranking for these variables. All three mean scores in the self-efficacy ratings are in the 3 range with the enactiment score being the highest. This indicates that principals feel more efficacious over curriculum, staff evaluation, and school improvement rather than data use and setting a positive school culture. Principals generally favorably ranked their mentors, however the mentoring scale was on 5-point scale vs. the 4-point scale for self-efficacy.

Table 4

Scale Descriptive Statistics

	N	Min.	Max	Mean	SD	Alpha
Mentoring	295	1.00	5.00	**3.922**	0.742	0.903
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	508	1.06	4.00	**3.274**	0.440	0.941
Self-Efficacy: Data Use	508	1.00	4.00	**3.251**	0.505	0.873
Self-Efficacy: Positive Culture	508	1.00	4.00	**3.220**	0.524	0.924

Figure 4 displays boxplots for the four measures. The boxes in these figures represent the interquartile range of the data (from the 25th percentile to the 75th percentile), with the line in the box representing the median (the 50th percentile). The lines extending from the box cover the remaining observations up to 1.5 times the distance of the interquartile range. Observations beyond the line may be considered outliers. A normally distributed variable would have a line in the center of the box, lines extending equal distance on each side, and very few outliers.

The results show that, for all but the enactment self-efficacy scale, there is a negative skew to each scale's distribution. That is, the distributions have heavy tails on the low end of values. Given the exploratory nature of this study, and to keep interpretation simple, no further transformations to the scales were made.

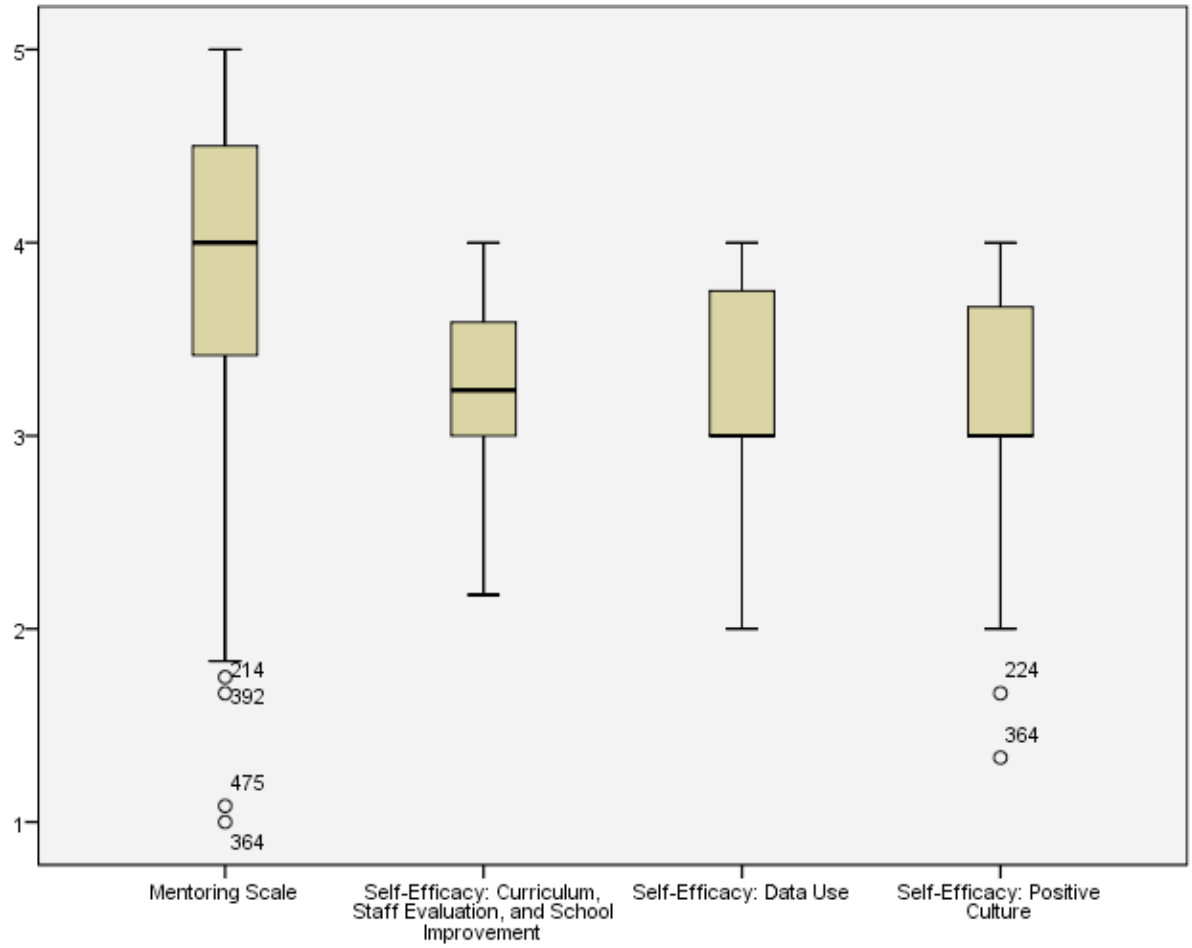


Figure 4. Boxplots – Interquartile Ranges

Multivariate Results

Tests of each independent variable by itself–that is, before adding other variables as controls–were first run against the different dependent variables in order to maximize power and see what relationships emerged before fitting a fully specified model. With four dependent variables (mentoring, general/enactment self-efficacy, data use self-efficacy, and positive culture self-efficacy), there is an increased possibility of making a Type-I error and falsely finding a significant result that is merely due to sampling variability. Thus, Table 5 reports Wilks' lambdas that result from performing a MANOVA or MANCOVA on all of the dependent variables simultaneously. The null hypothesis is that the respective independent

variable does not influence any of the dependent variables. A significant result would mean that one must follow up the ANOVA with an MANOVA or regression to find out which dependent variables were affected by the independent variables.

Table 5

Simple MANOVAs

	Wilks' Lambda	F	df_1	df_2	p
Gender	0.959*	3.058	4	288	0.017
African American	0.987	0.947	4	288	0.437
Urban/Suburban/Rural	0.919*	3.115	8	578	0.002
School Type	0.91	1.368	20	946	0.129
R's Education	0.905*	3.683	8	578	<.001
Age	0.948*	3.997	4	289	0.004
Tenure	0.927*	5.711	4	288	<.001

Note. Each IV entered by itself in separate MANOVAs.

Shown with an asterisk in the table, five of the predictors yield significant results: gender school setting, the respondent's education, age, and tenure. Neither race nor school type appear to play a significant role in affecting mentoring or self-efficacy scores.

Table 6 presents independent samples t tests for gender. The dichotomously coded race is also included for completeness, although the multivariate test in Table 5 did not indicate any difference (and none of the t tests are significant in Table 6). According to Table 6, gender has a significant effect on the general self-efficacy scale and the data use scale, as shown by an asterisk. In both cases, females have higher average scores than males.

A confirmatory factor analysis was again run to examine model fit statistics and modification indices. The model fit statistics for the a priori model were poor, $\chi^2(314) = 1026.226$, $p < .001$, $RMSEA = .067$. The model fit for the three factor model suggested by Table 3 did not offer an improvement, $\chi^2(321) = 1376.545$, $p < .001$, $RMSEA = .08$. The

modification indices did not offer any suggestions to have much of an impact on the chi-square. Thus, three scales were created as per Table 3: a general/enactment self-efficacy scale consisting of the curriculum, staff evaluation, and school improvement items; a data use self-efficacy scale; and a positive culture self-efficacy scale.

Table 6

Independent Samples t-test: Gender and Race

	t	df	p	Mean Diff.	SE Diff.
Gender					
Mentoring	-.789	278.310	.431	-0.068	0.086
Self-Efficacy: General/Enactment	-2.076	463.252	.038	-0.080	0.039
Self-Efficacy: Data Use	-2.310*	445.535	.021	-0.104	0.045
Self-Efficacy: Positive Culture	.096	472.949	.924	0.005	0.047
African American					
Mentoring	-1.576	24.899	.128	-0.249	0.158
Self-Efficacy: General/Enactment	-.090	31.679	.929	-0.009	0.096
Self-Efficacy: Data Use	-.386	31.889	.702	-0.041	0.107
Self-Efficacy: Positive Culture	.476	31.704	.637	0.054	0.114

Note. t tests adjusted for unequal group variances.

Table 7 looks at separate ANOVAs for the school setting, school type, and education variables. There are significant differences between school settings on mentoring and the positive culture scale, as shown by asterisk. Post hoc tests using Tukey's method revealed that the significant results for the former scale were due to suburban teachers scoring higher on the scale than rural teachers ($p = .001$). This was also the case for the positive culture scale ($p = .007$). There were no significant differences between rural and urban teachers.

The multivariate results of Table 5 indicated no significant differences for the school type variable. Table 7 includes school type for completeness, and some of the p-values are less than .05. However, given the lack of significant results from the multivariate omnibus

test, which controls for the inflated chance of erroneously finding a significant result simply due to carrying out more tests, these p-values were not be interpreted as significant.

The respondents' education levels were significant for general/enactment self-efficacy, data use, and positive culture. Tukey post hoc tests revealed that, for the general/enactment elf-efficacy scale, this was due to Ed.D.s/Ph.D.s scoring significantly higher than both master's-level respondents ($p < .001$) and educational specialists ($p = 0009$). The same pattern occurred for the other self-efficacy scales: Ph.D.s scored higher than respondents with other educational credentials, whereas there are no significant differences between masters-level teachers and educational specialists.

Table 7

One-way ANOVA Results

	F	df1	df2	p
Urban/Suburban/Rural				
Mentoring	7.118*	2	294	0.001
Self-Efficacy: General	2.923	2	507	0.055
Self-Efficacy: Data Use	.886	2	507	0.413
Self-Efficacy: Positive Culture	4.709*	2	507	0.009
School Type				
Mentoring	0.601	5	293	0.699
Self-Efficacy: General	1.149	5	505	0.333
Self-Efficacy: Data Use	2.61	5	505	0.024
Self-Efficacy: Positive Culture	2.384	5	505	0.037
R's Education				
Mentoring	0.982	2	294	0.376
Self-Efficacy: General	9.882*	2	507	<.001
Self-Efficacy: Data Use	7.985*	2	507	<.001
Self-Efficacy: Positive Culture	5.429*	2	507	0.005

Table 8 reports the bivariate relationships between age and tenure on one hand, and the four scales on the other. Age and tenure were measured on ordinal scales, and therefore, Kendall's tau was used as the measure of association. Kendall's tau is interpreted in the

same manner as Pearson's correlation, ranging from -1 to +1 and with zero indicating no relationship. Age has a positive correlation with general/enactment self-efficacy and positive culture. That is, being older leads to higher levels of self-efficacy on both scales. Likewise, longer tenure leads to higher general/enactment self-efficacy and positive culture self-efficacy.

Although these results indicate that there may be systematic differences in mentoring and self-efficacy due to variation in demographics, it remains to be seen if these differences remain when controlling for other factors. For example, the significant result for tenure may really be due to age, as longer tenure is more common among older respondents. The next section presents the full regression models with mentoring and the three self-efficacy scales being the dependent variables.

Table 8

Nonparametric Correlations (Kendall's tau)

	tau	p
Age		
Mentoring	-0.057	0.203
Self-Efficacy: General	0.119*	0.001
Self-Efficacy: Data Use	0.035	0.345
Self-Efficacy: Positive Culture	0.105*	0.004
Tenure		
Mentoring	-0.015	0.736
Self-Efficacy: General	0.144*	<.001
Self-Efficacy: Data Use	0.035	0.335
Self-Efficacy: Positive Culture	0.157*	<.001

Regression Results

Table 9 shows the results for the mentoring scale. The bivariate results only found school setting to predict mentoring scores, and this same variable turns out to produce the

only significant result in the table. Setting was entered into the model as a dummy variable with rural as the reference category, so the significant result is interpreted as showing that suburban schools yield on average mentoring scores that are .286 units higher than rural schools (*SE* = .098, *p* = .004). This is just over one third of a standard deviation increase (recalling from Table 4 that the standard deviation for the mentoring scale was .742). All of the variables together are only able to account for 2.2% of the total variability in mentoring. In other words, total mentoring experiences are poorly explained simply by demographics variables.

Table 9

Multiple Regression Results: Mentoring Scale

	B	SE	Beta	t	p
(Constant)	3.772	.220		17.164	.000
Female	.084	.091	.058	.928	.354
Age (categorized)	-.044	.055	-.055	-.803	.423
Urban	.205	.158	.096	1.300	.195
Suburban	.286	.098	.194	2.914	.004
Middle	-.040	.093	-.025	-.428	.669
HS	-.045	.097	-.029	-.468	.640
R's Education	.024	.067	.022	.366	.714
African American	.130	.192	.048	.676	.499
Tenure	.015	.041	.025	.363	.717

Note. Adjusted R2 = .022.

Table 10 shows the results for the general/enactment self-efficacy scale. The regression model includes all of the demographics from Table 9 and also adds in mentoring as a predictor. Each one unit increase in mentoring yields a .102 increase in general/enactment self-efficacy, *SE* = .031, *p* = .001. Using the standardized coefficient (beta), this is equivalent to saying that a one standard deviation increase in mentoring will produce a .193 standard deviation increase in general/enactment self-efficacy.

Three of the demographics variables are significant, as shown by an asterisk. First, females have self-efficacy scales that are .097 higher than males. Also, each unit increase on the education scale leads to a .104 increase. Finally, each unit increase in tenure leads to a .057 increase in self-efficacy. Together, the variables account for 10.1% of the variance in the dependent variable.

Table 10

Multiple Regression Results: Self-Efficacy General/Enactment Scale

	B	SE	Beta	t	p
(Constant)	2.353	.161		14.633	.000
Mentoring Scale	.102	.031	.193	3.347	.001
Female	.097*	.046	.125	2.088	.038
Age (categorized)	.013	.028	.031	.475	.635
Urban	.034	.081	.030	.419	.675
Suburban	-.009	.051	-.012	-.186	.853
Middle	.011	.047	.013	.239	.812
HS	-.006	.049	-.007	-.124	.901
R's Education	.104*	.034	.178	3.066	.002
African American	-.069	.098	-.048	-.709	.479
Tenure	.057*	.021	.177	2.729	.007

Note. Adjusted R2 = .101

Table 11 displays results for data use self-efficacy. No single variable turns out to be significant, and together the variables only explain 1.1% of the variance.

Table 11

Multiple Regression Results: Self-Efficacy Data Use Scale

	B	SE	Beta	t	p
(Constant)	2.912	.199		14.602	.000
Mentoring Scale	.052	.038	.082	1.360	.175
Female	.081	.057	.089	1.417	.158
Age (categorized)	-.019	.035	-.038	-.551	.582
Urban	-.025	.100	-.019	-.251	.802
Suburban	-.113	.063	-.122	-1.793	.074
Middle	.018	.059	.019	.314	.754
HS	-.112	.061	-.115	-1.841	.067
R's Education	.051	.042	.074	1.210	.227
African American	-.097	.121	-.056	-.795	.427
Tenure	.041	.026	.107	1.573	.117

Note. Adjusted R2 = .011

Table 12 shows the regression results for positive culture self-efficacy. Mentoring again returns to significant. A one standard deviation increase on the mentoring scale leads to a .246 standard deviation increase in positive culture self-efficacy. In addition, urban school principals score significantly higher than rural school principals. African American principals score significantly lower than other respondents. Finally, longer tenure is also significant. Together, these variables explain 12.4% of the total variability in positive culture self-efficacy.

Table 12

Multiple Regression Results: Self-Efficacy Positive Culture Scale

	B	SE	Beta	t	p
(Constant)	1.998	.202		9.902	.000
Mentoring Scale	.166*	.038	.246	4.323	.000
Female	-.052	.058	-.052	-.891	.374
Age (categorized)	.062	.035	.114	1.748	.081
Urban	.225*	.101	.156	2.226	.027
Suburban	.042	.064	.042	.658	.511
Middle	.045	.060	.042	.748	.455
HS	.005	.062	.004	.076	.940
R's Education	.071	.043	.095	1.658	.098
African American	-.249*	.123	-.135	-2.028	.044
Tenure	.066*	.026	.161	2.508	.013

Note. Adjusted R2 = .124

Each of the regression models was followed up with standard diagnostic tests to determine if 1) the residuals were distributed normally with constant variance (i.e. homoscedastic); 2) the functional form was correct (i.e. no variable transformations were needed); 3) multicolinearity was not leading to imprecise estimates; and 4) no outliers were unduly affecting the results.

The first assumption was checked by comparing a histogram of residuals to a normal curve, and constant variance was checked using a plot of standardized residuals by predicted values. Figures 5-10 show the histograms from the regressions for each scale, with several revealing clear deviations from the ideal. The histograms that are closest to normal are general self-efficacy and positive culture, whereas the mentoring and–especially–the data use scales deviate far from normality. Not surprisingly, the most non-normal residuals coincide with the scales for which it was most difficult to find significant results.

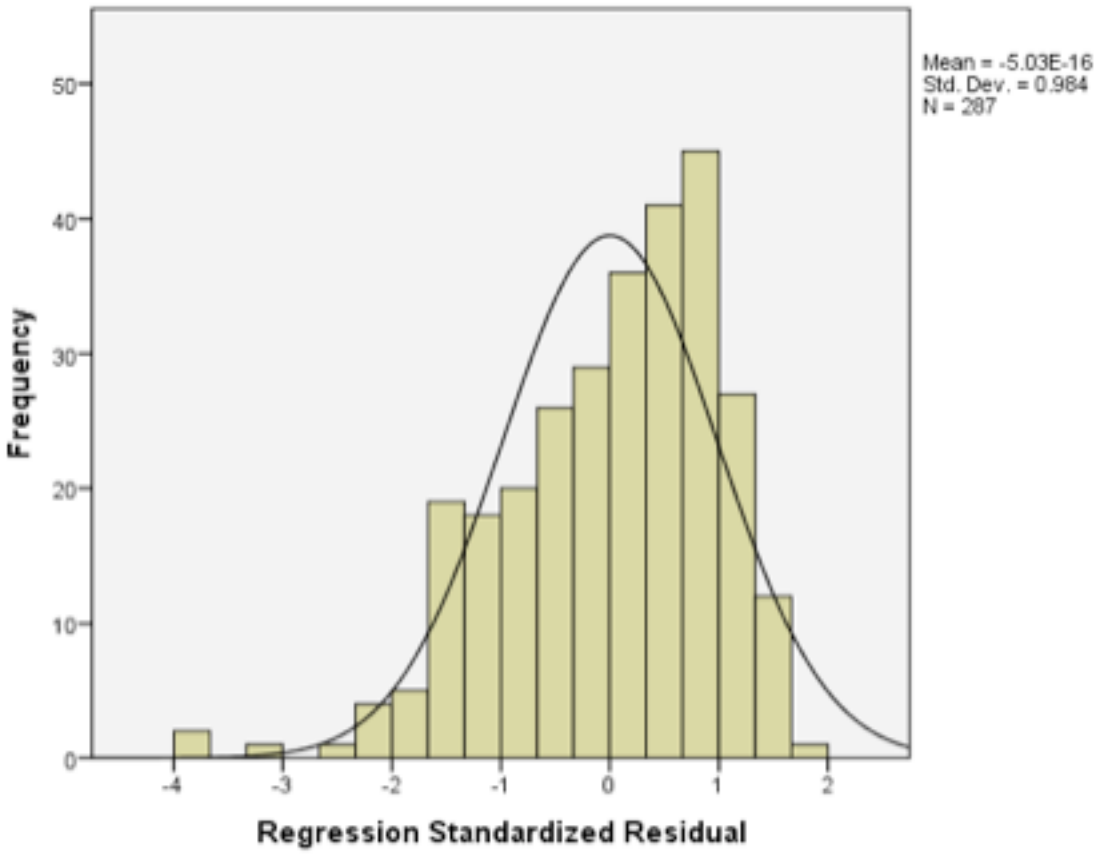


Figure 5. Dependent Variable: Mentoring Scale

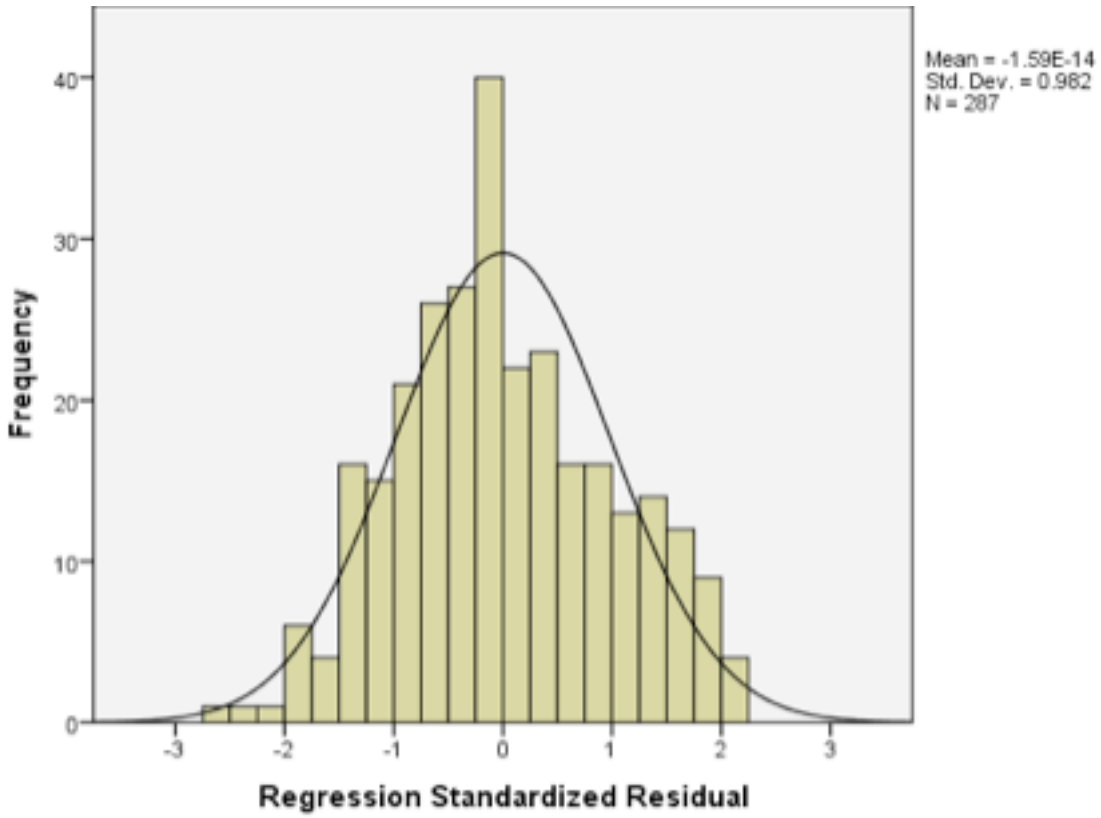


Figure 6. Dependent Variable: Enactment Self-efficacy

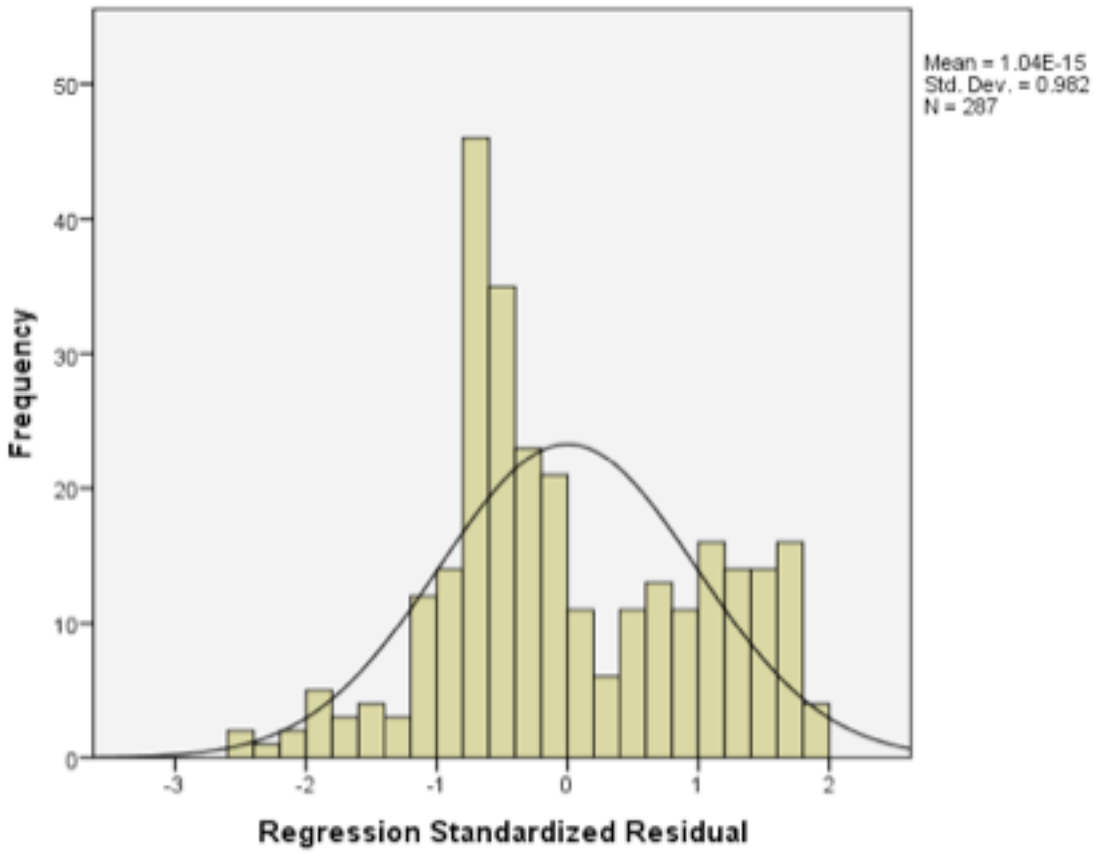


Figure 7. Dependent Variable: Data Use Self-efficacy

Reasons for non-normal residuals include the exclusion of relevant variables, not correctly accounting for nonlinear relationships, or poor measurement for one of the concepts. All data have been collected, so it is not possible to explore the first explanation. It is possible to check for nonlinearities by using partial regression plots between each independent variable and the dependent variable, as in Figure 8. There would be evidence of nonlinearities if the dots in the figure seemed to follow a snaking pattern, tending to move up and then down (or vice versa) when reading across the plot. There is no evidence of any relationship at all, meaning the plot does not indicate an incorrect functional form. An examination of all partial plots for each regression model failed to reveal any obvious variable transformations for any model.

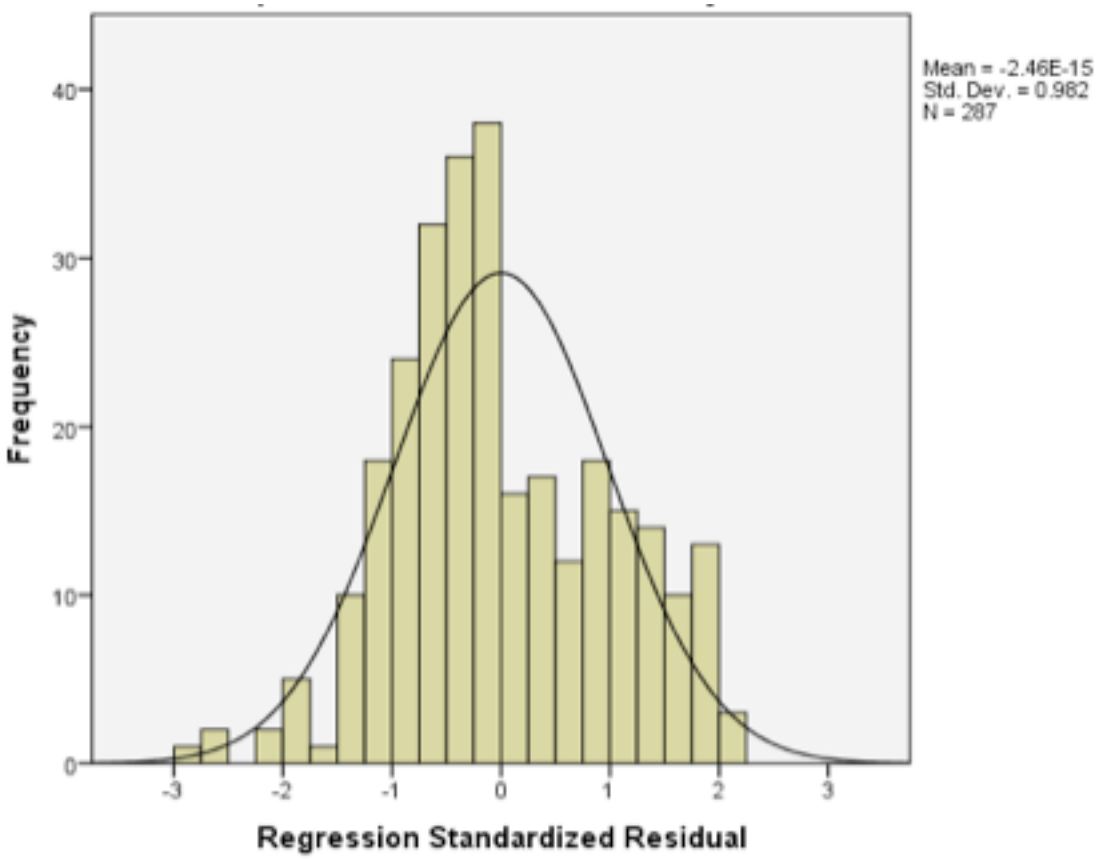


Figure 8. Dependent Variable: Positive Culture Self-efficacy

The most likely cause of the non-normal residuals is that the measurement scales for the dependent variables were themselves skewed, as indicated in the boxplots of Figure 4. The general/enactment self-efficacy scale was most normal to begin with, and its regression produced the best-behaved residuals. This suggests that future work needs to go into developing mentoring and self-efficacy scales that better differentiate subjects as well as meet rigorous validity tests. The factor analyses described above showed that the scales are not psychometrically valid at this point, and results should only be interpreted as suggestive rather than definitive. In exploratory research, these results are not uncommon.

The remaining diagnostics failed to indicate any problems. Homoscedasticity was checked by looking at residuals by predictions plots, such as the one in Figures 9 and 10.

The assumption is met when the dots are equally spread out around the horizontal line extending from zero. The lack of any obvious pattern in the figure means the assumption is met.

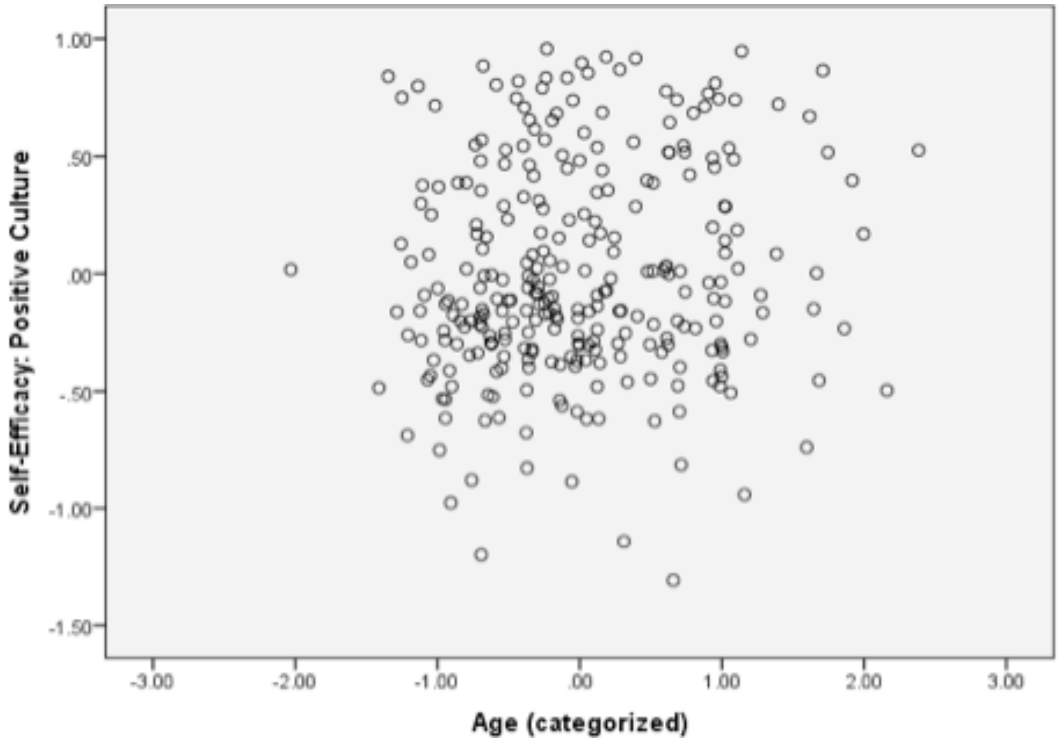


Figure 9. Partial Regression Plot: Dependent Variable: Positive Culture Self-efficacy

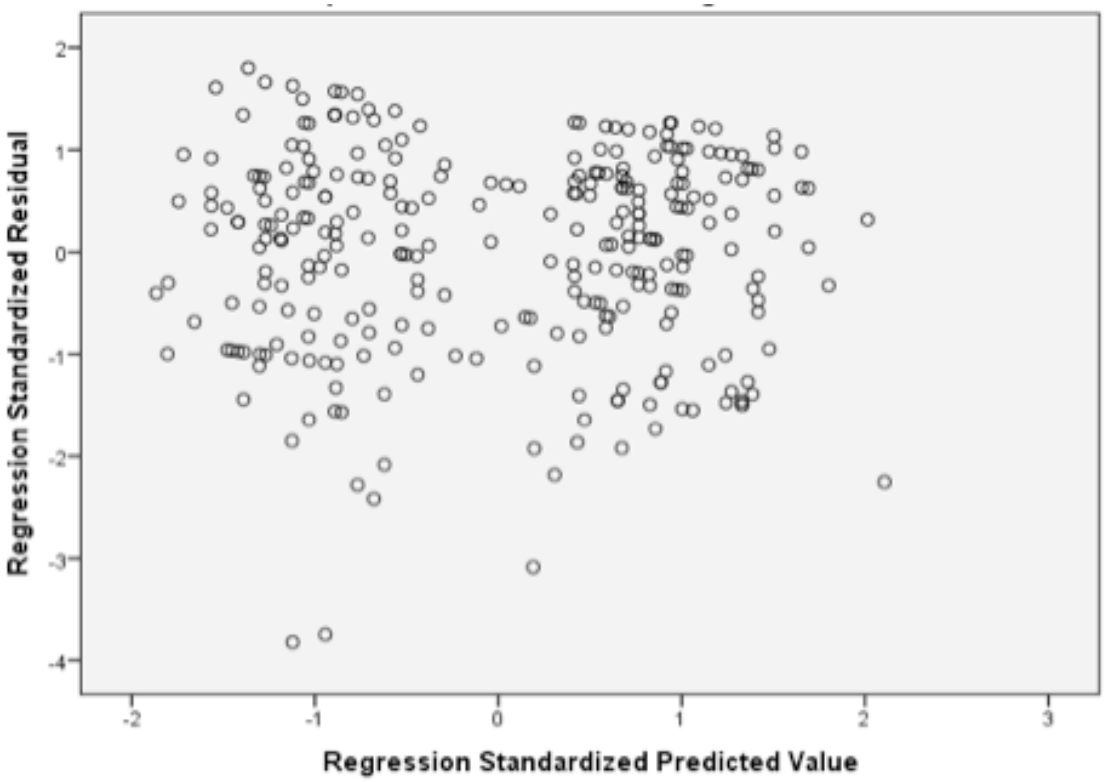


Figure 10. Scatterplot: Dependent Variable: Mentoring Scale

Variance inflation factors (VIF) and tolerance statistics were also explored to see if multicolinearity was an issue. Multicolinearity occurs when one independent variable is nearly perfectly predicted by the other independent variables, making it difficult to determine the partial effect of the one variable and hence causing problems for finding a significant result. The tolerance statistics were always .625 or higher, and the VIFs were always 1.6 or less, both indicating that multicolinearity was not a problem.

Finally, outliers were assessed by looking at the size of standardized residuals (with anything larger than 3 being suspect) and calculating DFfit statistics, a measure of how much one observation is affecting the estimates. Neither examination revealed any problems.

Structural Equation Modeling (SEM)

AMOS was used to analyze the data through a confirmatory factor analysis (CFA) and structural equation model (SEM). Figure 11 outlines the final SEM. This final analysis supported the findings in the previous multi-variate analysis. The measurement model (CFA) supported the decision to collapse the mentoring scale. The latent variables are all highly correlated indicating they are acting as one scale. Additionally, the latent variables in the other scales: culture, data use and enactment demonstrate estimates that would support a relatively good model fit. Once the model fit was determined, a structural model was developed with the SEM. The SEM revealed that mentoring impacts self-efficacy in all three areas; *SE Culture p = < .01, SE Data p = .022, and SE Enactment p = .004.* The standardized estimates here show that for every one standard deviation in mentoring there is a .25 increase in a principal's self-efficacy in culture, .15 increase in a principal's self-efficacy in using data, and a .19 increase in a principal's self-efficacy in enactment. Principals with EdDs/PhDs were more efficacious in all three self-efficacy categories; *SE Culture – p = .020 , SE Data – p = .027, and SE Enactment p = .004* than those who have not earned this degree. Elementary principals felt more efficacious in the use of data than middle school or high school principals *p = .002*. In addition, there was a significant correlation between tenure and self-efficacy in building a positive school culture *p = .003*. For every unit of change in tenure there was a .17 increase in self-efficacy in building positive school culture. These results use the most sophisticated software and are the most reliable when interpreting the results of this study because they control for all other variables.

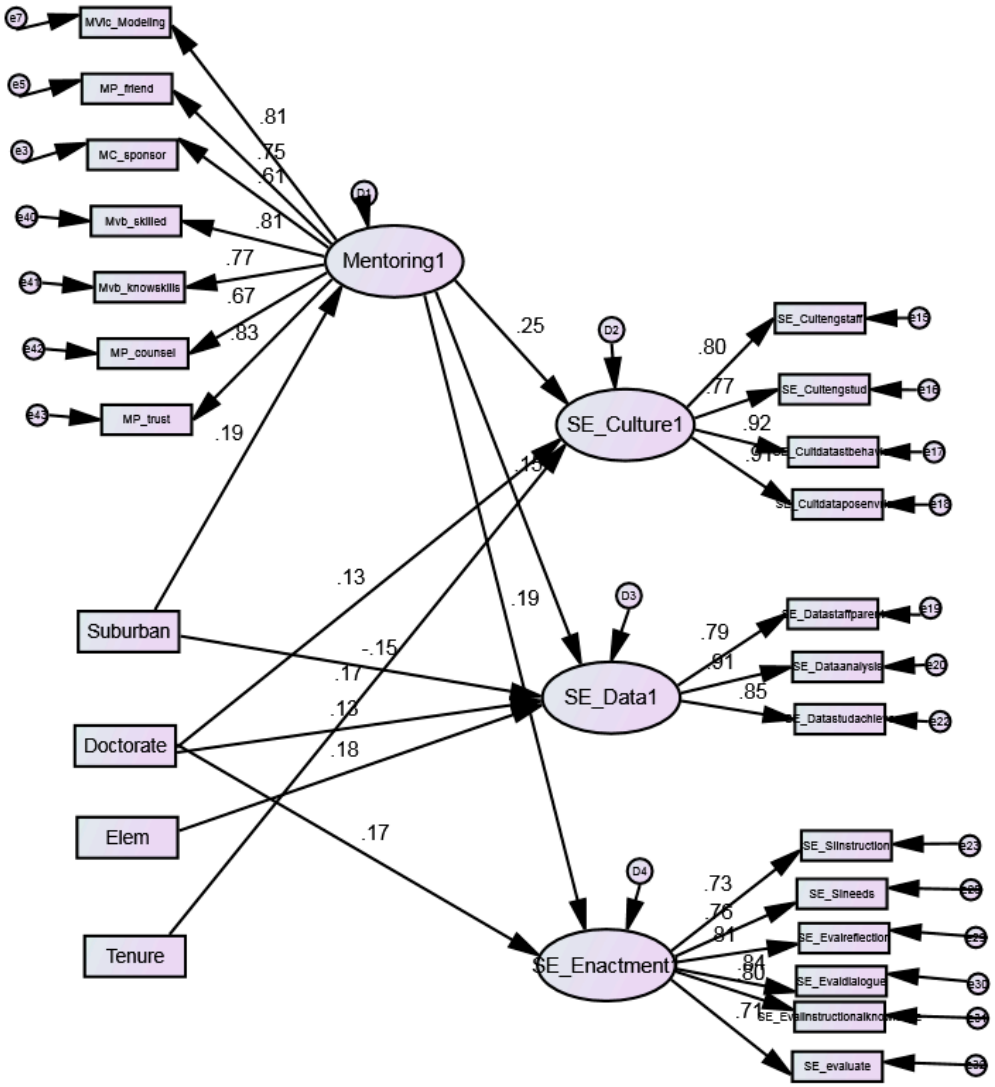


Figure 11. Structural Equation Model

Summary

The findings in this study indicated that mentoring has a significant impact on a principal's self-efficacy in the instructional leadership categories of building a positive school culture, using data, and enactment (school improvement, curriculum and instruction, and evaluation of personnel). Therefore, the null hypothesis: There will be no relationship between a principal's perceived self-efficacy in the identified instructional leadership categories and his or her mentoring experiences is refuted. Additionally, the data indicated a significant finding in the demographic variables. Suburban principals felt more positive about their mentoring experiences. Principals with doctorate degrees were more efficacious in all three self-efficacy categories. Elementary principals felt more efficacious over the use of data in their buildings and principals who have served longer tenures felt more efficacious over building positive school cultures. The findings in the demographic variables refute the second null hypothesis: There will be no resulting relationship between a principal's perceived self-efficacy and the identified instructional leadership categories.

Chapter 5–Summary, Conclusions, Inferences, Implications, and Recommendations for Further Study

This chapter includes a summary of the key findings from the study, a review of the methods employed and connections to previous research on mentoring, self-efficacy, and instructional leadership. In addition, recommendations for future research, higher education, and practitioners are discussed.

Purpose of the Study

The purpose of this study was to determine if there is a significant relationship between a principal's sense of self-efficacy in instructional leadership and his or her mentoring experiences, or if there is any resulting relationship in a principal's perceived self-efficacy in identified instructional leadership categories and gender, school type, experience, age, educational level, and race/ethnicity. Further, the study examined how an increased or decreased sense of self-efficacy impacts instructional leadership qualities. The study compared the responses of principals on a self-efficacy survey that focused on instructional leadership and the level and types of mentoring or mentoring relationships experienced by these principals.

Significance of the Proposed Inquiry

Most principals can identify mentors who have had an influence in their professional lives. Does this influence impact their perceived self-efficacy? "Mentoring as a critical component of more effective leadership development programs is now being implemented in a large number of university-based administrator pre-service preparation programs across the U.S.A." (Daresh, 1995, p. 7). Extreme variability exists in formal and informal mentoring

programs across the U. S., and there is controversy about whether a single mentor is effective, or if multiple mentors have a greater impact on behavior. "Because enhancing leadership self-efficacy should be an important objective for those responsible for improving the quality of leadership in school" (Tschannen-Moran & Gareis, 2004, p. 583), attention should be paid to developing a principal's sense of self-efficacy. This development could be enhanced through efficacy expectations and modeling.

Social cognitive theory provided guidance on observational learning and how "most human behavior is learned through modeling" (Bandura, 1986, p. 47). Self-efficacy beliefs are constructed from five principal sources of information: enactive mastery experiences, vicarious experiences, verbal persuasion, physiological and affective states, and integration of efficacy information (Bandura, 1997). By studying how mentoring is associated with a principal's self-efficacy, beliefs in relation to instructional leadership, an establishment of a research-driven theory-based mentoring program could result. In addition, the results of this research add to the current research on self-efficacy in school leaders and how mentoring programs, both informal and formal, career and psychosocial, influence perceived self-efficacy.

Research Questions and Null Hypotheses

This study was guided by two research questions:

Q 1. Is there a significant relationship between a principal's perceived sense of self-efficacy in instructional leadership and his or her mentoring experiences?

Null Hypothesis: There will be no relationship between a principal's perceived self-efficacy in the identified instructional leadership categories and his or her mentoring experiences.

Q 2. Is there any resulting relationship in a principal's perceived self-efficacy in instructional leadership and gender, school type, experience, age, educational level, and race/ethnicity?

Null Hypothesis: There will be no resulting relationship between a principal's perceived self-efficacy and the identified instructional leadership and gender, school type, experience, age, educational level, and race/ethnicity.

Study Design

A quantitative survey was sent to all principals in the State of Michigan using the 2013-2014 Michigan Department of Education Educational Entity Master. The survey was completed by 505 kindergarten through twelfth grade public school principals. The survey identified factors such as gender, school type, experience, age, educational level, and race/ethnicity, but primarily focused on principals' mentoring experiences. The survey also contained questions to identify the levels and types of mentoring experiences a principal may or may not have had and questions identifying the quality of their mentor. Additionally, participants identified their perceived self-efficacy in identified instructional leadership qualities using a Likert scale. Descriptive, bivariate, multivariate statistics, regression and factor analysis, and confirmatory factor analysis (CFA) and structural equation modeling (SEM) were employed using SPSS and AMOS statistical software to determine the relationships among the variables.

Conceptual Framework/ Theoretical Base

Albert Bandura's (1977) Social Learning Theory and Social Cognitive Theory (1986) were used as the theoretical base for this study. These theories, along with Bandura's research in the field of self-efficacy served as the conceptual framework that guided the

research. Additionally, research in mentoring and instructional leadership contributed to the framework. Finally, Kathy Kram's (1995), *Mentoring at Work* influenced the researcher to look at two components of mentoring defined as career and psychosocial.

Summary of Key Findings

In this study, the researcher examined effective types of mentoring as portrayed in the self-efficacy ratings of the five instructional leadership subscales. The data supported the combining of the mentoring subscales into one subscale and the five instructional leadership subscales into three. Self-efficacy Enactment represented the results when combining the curriculum, staff evaluation, and school improvement self-efficacy scales into one. Self-efficacy Curriculum and self-efficacy Data round out the three scales represented in the results. Although changes to the original structural equation model were necessary, there were significant results identified in the data.

Research Question 1. "Is there a significant relationship between a principal's perceived sense of self-efficacy in instructional leadership and his or her mentoring experiences?"

The Structural Equation Model (SEM) revealed the mentoring was statistically significant in all three self-efficacy categories; positive school culture, data use, and enactment. This means that those who were mentored felt more efficacious over leading instructionally in their profession. This evidence supports the notion that formal and informal mentoring programs should be instituted for new and practicing principals. Those who have a higher sense of self-efficacy tend to perform at higher levels than those who do not. Building a principal's self-efficacy in instructional leadership could have a positive impact on student achievement and teacher development.

Research Question 2. "Is there any resulting relationship in a principal's perceived self-efficacy in instructional leadership and gender, school type, experience, age, educational level, and race/ethnicity?"

The Structural Equation Model indicated that principals from suburban schools scored higher on the mentoring scale than principals from urban and rural schools, with a significant positive correlation *($p < .001$)*. Principals from suburban schools have the resources to implement mentoring programs that their urban or rural counterparts may not. Principals from suburban schools may have more time to dedicate to a mentoring program than principals from urban or rural schools. Rural principals tend to "wear more hats" and principals from urban schools have higher discipline rates and more urgency for increasing student achievement, which may limit the time they can dedicate to a mentoring program (Canales, Tejeda-Delgado, & Slate, 2008).

Interestingly, the SEM indicated that urban and rural principals felt more efficacious over using data in instructional leadership. This finding is interesting because in previous analysis, just the opposite was found. Once a control for other variables was in place, the results reversed. Principals of rural and urban schools tend to have lower student achievement than principals from suburban schools. Perhaps, less of a focus on student achievement exists in the suburban schools because there is a lack of urgency to improve like there is in urban and rural schools.

Elementary principals had higher ratings of self-efficacy than secondary principals in the using data in their building. Elementary principals may interpret use of data to improve instruction differently than secondary principals. With the focus on reading at the elementary grades, perhaps elementary principals consider running records or progress monitoring as

their primary use of data. Readers' and writers' workshops have become very popular at the elementary level. With these programs, a system of progress monitoring is typically used to determine growth in student achievement. It would make sense that a principal from an elementary school who implemented such programs would feel efficacious over using data because they use it constantly to assess reading and writing levels, as students are learning to read and write. After students are fluent readers and writers, they read to learn in content areas so there is a shift of focus to other measures of assessment. Principals at the secondary level may interpret these measures differently, as they rank their efficacy in using data to improve instruction and achievement.

Principals with doctorate degrees were more efficacious in all three self-efficacy categories. It makes sense that principals with a Ph.D or Ed.D. would be more efficacious in the three SE categories; of interest, the strongest correlation was in the area of enactment first, culture second, and then data use. One might conclude that principals who have earned the highest degree in their field would feel more efficacious in their job, in general. Bandura's (1977) Reciprocal Causation Model would support the fact that personal, environmental, and behavioral experiences are intertwined, and the more knowledge a principal acquires over the course of their career and the more experiences they have in the field, the more efficacious they would feel about their career and their ability to carry out instructional leadership functions.

There was a significant correlation between tenure and self-efficacy in building a positive school culture. For every unit of change in tenure there was an increase in self-efficacy in building a positive school culture. For example, a principal who has served 4-6 years in their position felt more efficacious over building culture than principals who had

served 1-3 years. Principals who have served longer terms may be more efficacious over the culture in their schools because of a comfort level they have maintained. Staff, parents, and students may feel more comfortable with the leadership; thus, creating a positive school culture. The older the age of principal, or the longer a school principal served impacted their self-efficacy ratings resulting in higher scores for setting a positive school culture. Since self-efficacy is built through career, psychosocial, verbal persuasion, and vicarious experiences, it makes sense that a higher self-efficacy can be attributed with longer tenure. Principals who have been in the business of education for a long period of time have experiences that far outweigh their younger counterparts. Often, more experienced principals are asked to serve as mentors to the younger aspiring principals. Although, tenure impacted self-efficacy ratings in positive school culture, there was no correlation with a stronger or more impactful mentoring experience. More experienced principals did not report a significant mentoring experience that focused on enactment or positive school culture. This may be an area for future development in terms of a mentoring program.

Connections to Research and Theory

Albert Bandura's (1977) social learning and self-efficacy theories provided the foundation for this study. Kathy Kram's (1985) research outlined in *Mentoring at Work* provided an application for the study. The goal was to determine how mentoring experiences impacted how a principal feels about the work they do on a daily basis. There are many tasks required of a principal and many more continue to be layered on. This study focused on the instructional leadership aspects of a principal's job. Bandura (1977) posited that behavior is determined by the idea that the personal, behavioral and environmental conditions work together continuously to induce behavior. Self-efficacy resides in the personal domain of

the Reciprocal Causation Model (Bandura, 1997). Five main sources of efficacy influences include enactive mastery, vicarious experience, verbal persuasion, physiological and affective states, and the integration of efficacy information (Bandura, 1997). Self-efficacy is determined by a person's experiences with theses efficacy influences. Principals who are intentionally mentored, and even those who identify informal mentors, are able to build their knowledge through the efficacy influences. Additionally, Levinson, (1978**)** described the phases that man goes through in his book, *Seasons of a Man's Life.* He found that a man's relationships with other people greatly influence the man he will become. Levinson referenced the importance that relationships play in different stages of a man's life and how these relationships impact his development. Both Albert Bandura (1977) and Knowles (2002) would agree that direct and indirect knowledge and experience impact self-efficacy and behavior.

The conceptual framework used in this study as outlined in Chapter Two demonstrated how social learning theory and the theory of self-efficacy work together to produce behavior. A strong mentoring program, as outlined by Kathy Kram (1985), would facilitate a means for these experiences to take place. Focusing on the career and psychosocial aspects of mentoring while combining what we know about social learning theory, self-efficacy, and adult learning and development would be a sound basis for a mentoring program for principals and others in leadership positions.

Inferences and Limitations

As stated in Chapter One, this study was limited based on the researcher's assumption that honest answers to the survey were given in all cases. In addition, the data were collected at one point in time, and the researcher could not control the quality of responses. Principals were asked to rank the quality of their mentoring experiences. Because quality is difficult to quantify, the researcher cannot control for the quality of the mentoring experiences that principals identified. Principals have hectic schedules and may have rushed through the survey causing results to be skewed. The geography of the research study, which included participants only in the State of Michigan, presented a delimiting factor. Expanding the study to other states in the region or to all states would provide a larger sample size and may reveal expanded results. It would also provide a more diverse sample of participants.

Although the survey was piloted prior to the administration, there is a need to develop better scales to differentiate the types of mentoring outlined: verbal, vicarious, career and psychosocial. This would help to identify which type of mentoring makes the most impact on self-efficacy in instructional leadership. Further, the study identified three dimensions of instructional leadership self-efficacy: enactment, culture, and data use instead of the anticipated five areas. School improvement, curriculum, and staff evaluation collapsed into one scale identified as enactment. This study focused on how mentoring impacted self-efficacy. For those who study theory, this study could be expanded by focusing on leadership behavior instead of how leaders feel about their behavior. In other words, studying principal's leadership behaviors as it relates to their mentoring experience would provide actual examples of which behaviors seem most prevalent. This could lead to an

identification of what successful mentoring programs provide and what they might improve upon.

Implications for School District Leaders

New principals need to be mentored. Intentional mentoring is very inconsistent across school districts. District leaders should put efforts into their local-based mentoring programs by investing in the development of a quality mentoring program. With limited funding and resources, along with other priorities, it will be difficult for local school districts to make this investment. This study proved that there is a direct correlation to a principal's self-efficacy in instructional leadership and their mentoring experiences. I would suggest that an investment in leadership development for new principals would pay dividends far into the future for school buildings and districts.

Instructional leadership has become more important over the past several years. Teacher evaluation, school improvement, knowledge of curriculum and instruction, using data for instruction and building positive school cultures have dominated the landscape in schools during this time. As a building leader, an investment in learning as much as possible about these components of instructional leadership is a necessity. School districts should recognize this and support their principals accordingly. Current building principals need to seek out information, training, and guidance to instructionally lead their staff. Teachers rely on the principals' leadership and knowledge to help them develop in their profession. They also rely on principals to provide guidance through their evaluations and observations of their teaching. Parents rely on building principals to provide a positive school culture that promotes increased levels of teaching and learning. Students expect their principals to be instructional role models who monitor teaching and learning in the school to provide them

with the best possible learning experiences available. It is imperative that building leaders focus on instructional leadership and for district leaders to make this a priority in their hiring practices.

Implications for Theory

The confirmatory factor analysis revealed that the mentoring and self-efficacy scales were supported by the latent variables identified in the study.

Mentoring: Interestingly, the findings demonstrate the need for all types of mentoring; career, psychosocial, verbal and vicarious. The latent variables acted as one indicator for the mentoring variable. This means that although there may be perceived dimensions of mentoring working independent of one another, this study shows that the types of mentoring identified all work together and without one the other may not be possible.

Self-efficacy: Instructional leadership self-efficacy was divided into three dimensions: culture, data use, and enactment. While the three dimensions are separate, each dimension has its own set of latent variables that must exist to inform the dimension. Without one latent variable, the others do not act in the same manner. More specifically the enactment dimension includes curriculum, school improvement and staff evaluation as instructional leadership qualities that all act in the same manner inform the dimension.

Recommendations for Further Study

The current research on mentoring for principals is extremely limited. Although there are mentoring/internship programs for aspiring principals, there is no proven mentoring program for school leaders that place a focus on instructional leadership. The changing landscape of principal leadership gives credence to the development of local and state mentoring guidance. Local school districts should evaluate their current administration to

determine if there are needs in the area of instructional leadership with their current building principals. Mentoring programs should be developed at the local levels that focus on theory-based research regarding behavior and self-efficacy. Institutes of higher education should consider their internship requirements and determine if they are providing effective mentors for their aspiring principals. Based on this study, the researcher recommends several topics for further research.

Institutions of higher education typically have a component that requires the aspiring principal to serve as an intern to an experienced administrator. By designing these internship programs to reflect the theoretical research on mentoring, a solid mentoring program could be developed. Connecting their mentoring programs to behavior theory may reveal solid evidence of how leadership behaviors are developed and impacted through the influence of a mentor. Further research on the mentoring and internship programs at colleges and universities would be recommended.

Research outlining the mentoring programs that state departments of education around the United States and local school districts would provide a springboard to learning about best-practice mentoring programs. By looking at what makes these mentoring programs successful, a researcher could identify components of a solid mentoring program. This may lead to the development of a model mentoring program for districts to use.

Mentoring programs are unique to different school settings. Conducting research on mentoring programs in rural, urban, and suburban settings would provide information on the differences that may exist in these settings and help district administrators, state boards of education, and higher education develop specific mentoring programs to meet the needs of principals working at schools in a variety of settings.

Research on specific types of mentoring that increase a principal's self-efficacy in instructional leadership would contribute to the development of a strong mentoring program that maintains a focus on instructional leadership. This would provide a resource that school leaders could use to develop their own mentoring programs. Using the research that exists on mentoring in the private sector could influence the development of a mentoring program for principals.

This study indicated that principals with longer tenure do not feel more efficacious over using data to improve instruction. By studying this phenomenon, a researcher may be able to identify exactly why this is true. This could lead to professional development associated with data use for longer-tenured principals; thus, increasing self-efficacy of principals in the area of data use in schools.

Because principals of urban and rural schools feel more efficacious than principals from suburban schools over using data to improve instruction, a study identifying why this is true could contribute to the research on data use in schools and perhaps promote stronger self-efficacy in this area.

A study involving self-efficacy in instructional leadership with principals who have doctoral degrees may identify why these principals feel more efficacious about using data to improve instruction, building positive school cultures, and enactment processes.

Further research identifying why elementary principals feel more efficacious than secondary principals about using data to improve instruction and student achievement could reveal important information about data use at these levels of schooling. This may lead to further guidance for principals at all levels on the importance of the use of data and the application of how results can be used to inform instruction.

Summary

Although the focus educator effectiveness at the local, state and national level has increased, our building principals are being neglected. Increased attention on principal leadership will pay dividends in the area of teacher effectiveness. The principal should and must be the learning leader in the school. They must lead by example, know what research says about teaching and learning, understand curriculum, be able to evaluate their staff from an improvement-based mindset, build a positive school culture, and use data to improve instruction. To do these things well, principals need guidance. Because levels of motivation and performance rely heavily on efficacy beliefs (Bandura & Locke, 2003), and we know that mentoring increases levels of self-efficacy, the development a quality mentoring program is valid. According to the research in this study, a structured and theory-based mentoring program would improve a principal's self-efficacy in instructional leadership principles; thus, giving him or her the confidence to lead their staff to instructional improvements and their students to higher levels of achievement.

References

Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (1994). Encyclopedia of human psychology. In *Self-Efficacy* (4). Retrieved from www.des.emory.edu/mfp/BanEncy.html

Bandura, A. (1994). Self-Efficacy. *Encyclopedia of Human Behavior*, *4*, 71-81.

Bandura, A. (1997). *Self-efficacy, the exercise of control*. New York: Freeman.

Bandura, A., & Locke, E. A. (2003). Negative self-efficacy and goal effects revisited. *Journal of Applied Psychology*, *88*, 87-99. http://dx.doi.org/10.1037/0021-9010.88.1.87

Barth, R. (1990). *Improving schools from within*. San Francisco: Jossey-Bass.

Blase, J., & Blase, J. (1999, August). Principals' instructional leadership and teacher development: Teachers' perspectives. *Educational Administration Quarterly*, *35*, 349-378. http://dx.doi.org/10.1177/0013161X99353003

Canales, M., Tejeda-Delgado, C., & Slate, J. (2008). Leadership behaviors of superintendent/principals in small, rural school districts in Texas. *Rural Educator, 29*(3), 1-7. Retrieved December 16, 2014, from http://eric.ed.gov/?id=EJ869292

Coladarci, T. (1992). Teachers' sense of efficacy and commitment to teaching. *The Journal of Experimental Education*, *60* (4), pp. 323-337.

Cotton, K. (2003). *Principals and student achievement: What the research says.* Association for Supervision and Curriculum Development. Alexandria, VA: ASCD.

Council for Chief State School Officers. (1996). *Interstate school leaders' licensure consortium: Standards for school leaders*. Washington DC

Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). Thousand Oaks, CA: Sage.

Danielson, C. (2007). *Enhancing professional practice: A framework for teaching* (2nd ed.). Association for Supervision and Curriculum Development. Alexandria, VA: ASCD.

Daresh, J. C. (1995). Research base on mentoring for educational leaders: What do we know? *Journal of Educational Administration*, *33*(5), 7-16.

Daresh, J. C. (2001). *Leaders helping leaders: A practical guide to administrative mentoring*. Thousand Oaks, CA: Corwin.

Daresh, J. C., & Playko, M. A. (April 1, 1990). Mentoring for effective school administration. *Urban Education*, *25*, 43. http://dx.doi.org/10.1177/0042085990025001005

Darling-Hammond, L.; LaPoint, M.; Meyerson, D.; Orr, M. T., & Cohen, C. (2007). Preparing school leaders for a changing world: Lessons from exemplary leadership development programs. *Stanford Educational Leadership Institute*. Retrieved from http://seli.standford.edu

DuFour, R. (2002, May). The learning centered principal. *Educational Leadership*, *59*(8), 12-15.

Duncan, O. D. (1966, July). Path analysis: Sociological examples. *The American Journal of Sociology*, *72*(1), 1-33. Retrieved from http://www.jstor.org/discover/10.2307/2775755?uid=3739728&uid=2134&uid=4575101287&uid=2&uid=70&uid=3&uid=4575101277&uid=3739256&uid=60&purchase-type=article&accessType=none&sid=21101244160037&showMyJstorPss=false&seq=2&showAccess=false

Educational Leadership Policy Standards. (2008). Retrieved from http://www.ccsso.org/documents/2008/educational_leadership_policy_standards_2008.pdf

Ehrich, L. C., Hansford, B., & Tennent, L. (2004, October). Formal mentoring programs in education and other professions: A review of the literature. *Educational Administration Quarterly*, *40*, 518-540. http://dx.doi.org/10.1177/0013161X04267118

Elmore, R. F. (2000). Building a new structure for leadership [Research paper].

Fink, E., & Resnik, L. B. (2001). Developing principals as instructional leaders. *Phi Delta Kappan*. Retrieved from http://www.lrdc.pitt.edu/hplc/publications/finkresnick.pdf

Fiore, D. J. (2004). *Introduction to educational administration standards, theories, and practices*. Larchmont, NY: Eye on Education.

Glickman, C. D. (2002). *Leadership for learning, "How to help teachers succeed*." Alexandria, VA: ASCD

Glickman, C. D., Gordon, S. P., & Ross-Gordon, J. M. (2004). *Supervision and instructional leadership: A developmental approach* (6th ed.). Boston: Pearson.

Goldberg, M., & Harvey, J. (1983). A nation at risk: The report of the national commission on excellence in education. *Phi Delta Kapan*, *65*(1), 14-18. Retrieved from http://www.jstor.org/discover/10.2307/20386898?uid=3739728&uid=2134&uid=2&uid=70&uid=4&uid=3739256&sid=47699038106387

Hallinger, P. (2005). Instructional leadership and the school principal: A passing fancy that refuses to fade away. *Leadership and Policy in Schools*, *4*, 221-239. http://dx.doi.org/10.1080/15700760500244793

Hallinger, P., Chung, W., & Wen, C. (2012). Assessing the measurement properties of the principal instructional management rating scale: A meta-analysis of reliability studies [Monograph]. *Gateways to Leading Learning: APCLC Monograph Series*, *4*.

Hallinger, P., & Heck, R. H. (1998). Exploring the principal's contribution to school effectiveness: 1980-1995. *School Effectiveness and School Improvement: An International Journal of Research, Policy, and Practice*, *9*(2), 157-191. Retrieved from http://dx.doi.org/10.1080/0924345980090203

Hallinger, P., Leithwood, K., & Murphy, J. (1993). *Cognitive perspectives on educational leadership*. New York: Teachers College, Columbia University.

Hallinger, P., & McCary, C. E. (1990, November). Developing the strategic thinking of instructional leaders. *The Elementary School Journal*, *91*(2), 89-108. Retrieved from http://www.jstor.org/stable/1001745

Hallinger, P., & Murphy, J. F. (1987). Assessing and developing principal instructional leadership. *Educational leadership*, *45*(1), 54-61.

Harris, S. L., & Lowery, S. (2002, May). A view from the classroom. *Educational Leadership*, *59*(8), 64-65.

Healy, C. C., & Welchert, A. J. (1990, December). Mentoring relations: A definition to advance research and practice. *American Educational Research Association*, *19*(9), 17-21. Retrieved from http://www.jstor.org/stable/1176974.

Hess, F. M., & Kelly, A. P. (2007). Learning to lead: What gets taught in principal-preparation programs [Featured article]. *Teachers College Record*, *109*(1), 244-274. Retrieved from http://corwin.emich.edu.ezproxy.emich.edu/sfx_local?sid=CSA

Hopkins, D., & Jackson, D. (2003). Building the capacity for leading and learning, in A. Harris, C. Day, M. Hadfield, D. Hopkins, A. Hargreaves, and C. Chapman, (EDS). *Effective Leadership for School Improvement*, 84-101.

Hoy, W. K., Tarter, C. J., & Kottencamp (1991). Faculty trust in colleagues: Linking the principal with school effectiveness. *Journal of Research and Development in Education*, *26*, 38-45.

Hoyle, R. H. (2007). *Encyclopedia of social science research methods: Confirmatory factor analysis* (1 ed.). http://dx.doi.org/http://dx.doi.org/10.4135/9781412950589.n156

Interstate school leaders' licensure consortium: Standards for school leaders. (1996). Retrieved from www.ccsso.org/.../educational_leadership_policy_standards_2008.pd

Jourdan, F. (1991). *The influence of feedback framing on the self-regulatory mechanizms governing complex decision making* (Doctoral dissertation). Retrieved from Ph.D. diss, Stanford, CA: Stanford University.

Knowles, M. (2002). Malcolm Knowles, informal adult education, self-direction, and andragogy. *The Encyclopedia of Informal Education*. Retrieved from www.infed.org/thinkers/et-knowl.htm

Knowles, M.S. (1980). *The modern practice of adult education: From pedagogy to andragogy*. Chicago: Follett.

Kram, K. E. (1985). *Mentoring at work*. Lanham, MD: University Press of America.

Krathwohl, D. R. (2009). *Methods of educational and social science research* (3rd ed.). Long Grove, IL: Waveland.

Leithwood, K., Jantzi, D., & Steinbach, R. (1999). *Changing leadership for changing times*. Philadelphia: Open University Press.

Levinson, D. J. (1978). *The seasons of a man's life*. NY: Ballantine Books.

Linn, R. L., Baker, E. L., & Bettebenner, D. W. (2002, August). Accountability systems: Implications of requirements of the no child left behind act of 2001. *Educational Researcher*, *31*(6), 3-16. doi:10.3102/0013189X031006003

Liu, C. J. (1984). *An identification of principals' instructional leadership in effective high schools* (Unpublished doctoral dissertation). University of Cincinnati, Ohio.

McCormick, M. J. (2001). Self-efficacy and leadership effectiveness: Applying social cognitive theory to leadership. *Journal of Leadership Studies*, *8*(1), 22-33.

McQuitty, S., & Wolf, M. (2013). Structural equation modeling: A practical introduction. *Journal of African Business*, *14*, 58-69. http://dx.doi.org/10.1080/15228916.2013.765325

Paglis, L. L., & Green, S. G. (2002, March). Leadership self-efficacy and managers' motivation for leading change. *Journal of Organizational Behavior*, *23*, 215-235. http://dx.doi.org/10.1002/job.137

Pajares, F. (2002, Spring). Gender and perceived self-efficacy in self-regulated learning. *Theory into Practice*, *41*, 116-125. Retrieved from URL: http://www.jstor.org/stable/1477463

Ragins, B. R., & Kram, K. E. (2007). *The handbook of mentoring at work: Theory, research, and practice*. Thousand Oaks, CA: Sage.

Schmoker, M. (2004). The tipping point: From feckless reform to substantive instructional improvement. *Phi Delta Kappan*, *85*(6), 224-232.

Scholtz, U., Gutierrez-Dona, B., Sud, S., & Schwarzer, R. (2002). Is general self-efficacy a universal construct? Psychometric findings from 25 countries. *European Journal of Psychological Assessment*, *18*, 242-251. http://dx.doi.org/http://dx.doi.org/10.1027//1015-5759.18.3.242

School administrators' efficacy: A model and measure [Connexions]. (2007, August 7). *National Council of Professors of Educational Administration*. Retrieved from http://cnx.org/content/m14845/1.1/

Schunk, D. H. (2011, November 21). Self-Efficacy and academic motivation. *Educational Psychologist*, *26*(3-4), 207-231. http://dx.doi.org/10.1080/00461520.1991.9653133

Senge, P. (2000). *Schools that learn: A fifth discipline fieldbook for educators, parents, and everyone who cares about education*. New York: Doubleday.

Shipman, N. J., Queen, J. A., & Peel, H. A. (2007). *Transforming school leadership with the ISLLC and ELCC*. Retrieved from www.eyeoneducation.com

Sirin, S. R. (2005). Socioeconomic status and academic achievement: A meta-analytic review of the research. *Review of Educational Research*, *75*(3), 417-453. http://dx.doi.org/0.3102/00346543075003417

Spillane, J. P., Halverson, R., & Diamond, J. B. (April 1, 2001). Investigating school leadership practice: A distributed perspective. *Educational Researcher*, 23-27. http://dx.doi.org/10.3102/0013189X030003023

Spillane, J. P., Halverson, R., & Diamond, J. B. (2004). Towards a theory of leadership practice: Toward a distributed perspective. *Journal of Curriculum Studies*, *36*, 3-34. http://dx.doi.org/10.1080/0022027032000106726

Thompson, J. D. (2008). *Organizations in action: Social science bases of administrative theory* (2nd ed.). New Brunswick, NJ: McGraw-Hill.

Tschannen-Moran, M., & Gareis, C. R. (2004). Principals' sense of efficacy: Assessing a promising construct. *Journal of Educational Administration*, *42*(5), 573-585. doi:10.1108/09578230410554070

Tschannen-Moran, M., & Hoy, W. (1998). Trust in schools: A conceptual and empirical analysis. *Journal of Educational Administration*, *36*(4), 334-352. doi:10.1108/09578239810211518

Wasden, D. (1988). *The mentoring handbook.* Provo, UT: Brigham Young University, College of Education.

Weick, K. E. (1982, June). Administering education in loosely coupled schools. *The Phi Delta Kappan*, *63*(10), 673-676. Retrieved from http://.jstor.org/stable/20386508

Weston, R., & Gore, P. A., Jr., (2006, August 10). A brief guide to structural equation modeling. *The Counseling Psychologist*, *34*, 719-751. http://dx.doi.org/10.1177/0011000006286345

Wilson, M. (2004). Toward coherence between classroom assessment and accountability. Chicago: *University of Chicago Press*.

Wood, M. (1997). Gender differences in mentoring: A biographical reflection. *Educational Management and Administration*, *25*(1), 25-34.

Wood, R., & Bandura, A. (1989). Social cognitive theory of organizational management. *Academy of Management Review*, *14*(3), 361-84.

Wright, J., & Mischel, W. (1982). Influence of affect on cognitive social learning person variables. *Journal of Personality and Social Psychology*, *43*, 901-914.

Appendices

Appendix A–Survey Instrument

Part One – Demographic Factors and Mentoring – Please answer the following demographic questions.

Gender

1 What is your Gender? Male or Female

Age

2. What is your age?

<25 25-35 35-45 45-55 >55

School Type

3. How would you characterize the school type where you are the principal?

Urban Rural Suburban

Race/Ethnicity

4. How do you identify yourself in terms of race/ethnicity?

African American Hispanic White Native Hawaiian Pacific Islander American Indian or Alaskan Native Asian Other

Educational Experience

5. What is your educational level?

Doctorate Ed. Specialist Masters Bachelors

6. How long have you been a principal?

<1year 1-3 years 4-6 years 7-10 years >10 years

7. What is the level of the school in which you are the principal?

Elementary Middle School High School other (explain)

8. What is the student population of the school in which you work?

<200 200-500 500-1000 1000-1500 >1500

Mentoring Experiences (Kram/Bandura)

- Mentoring Relationships (as used in this study) –a relationship between an older, more experienced mentor and a younger, less experienced protégé for the purpose of helping and developing the protégé's career (Kram, 1985; Levinson, 1978; Ragins & Kram, 2007, p. 5).
    - Formal Mentoring - A formal mentor is typically assigned as part of a student's educational program in administration. These mentors are typically

given a set of criteria that the mentees needs to accomplish to complete their program. Sometimes a school district will assign a mentor to a new principal.

- Informal Mentoring - Informal mentors are those who help to guide a potential principal and, "show them the ropes" of the job. Informal mentoring relationships are developed over the natural course of a career.

Please answer the following questions regarding your mentoring experiences based upon the above definitions.

1. Did you have a formal supervised educational leadership mentoring experience?

Yes No

2. If not, did you have any other supervised educational leadership mentoring experience?
No Yes, if so please describe _____

3. Did you have a formal mentor at your internship site(s)?

No, I did not have a mentor at any internship site
Yes, the principal served as my mentor
Yes, someone else served as my mentor (specify role):_____

4. Did you have a mentor (either formal or informal, based on the above definitions) work with you regularly?

No, my mentor was rarely available to work with me directly on my personal development

Yes, a mentor was available to work with me regularly in at least one of my internship sites

I did not have a mentor

If you did not have a formal or informal mentor that assisted you in learning the position of principal, move on to the Section II Self-efficacy and Instructional Leadership. If you answered yes, continue with the survey.

(All answers will be selected from a Likert Scale: Strongly Disagree, Disagree, Agree, Strongly Agree, Neutral

Career

6. My mentor was more of a coach who guided me in understanding the roles of the principal.

1 2 3 4 5

7. My mentor gave me challenging assignments to help develop my skills as a leader.

1 2 3 4 5

8. My mentor helped to sponsor the advancement in my career.

1 2 3 4 5

Psychosocial

9. My mentor was someone I could trust for advice and support.

1 2 3 4 5

10. I would consider my mentor to be a trusted friend.

1 2 3 4 5

11. My mentor provided counseling advice to me.

1 2 3 4 5

Vicarious

12. My mentor modeled leadership behaviors that I use in my career.

1 2 3 4 5

13. I worked alongside my mentor while learning the tasks of the job.

1 2 3 4 5

14. I am very similar to my mentor.

1 2 3 4 5

Verbal

15. My mentor gave me verbal encouragement and feedback.

1 2 3 4 5

16. My mentor had the knowledge and skills to help guide my development as a principal.

1 2 3 4 5

17. I would consider my mentor to be a skilled leader in their position.

1 2 3 4 5

Quality

18. Rank the quality of your mentoring experience?
Extremely Low Quality, Low Quality, Average Quality, High Quality, Extremely High Quality
1 2 3 4 5

Section Two – Self-efficacy in Instructional Leadership categories (School Administrators Efficacy Scale, Dr. Dan McCollum – email permission). Some self developed.

Principals are required to have a broad skill set and have many responsibilities. Please answer the following questions about how you perceive your abilities in your current position of principal.

Curriculum

1. I am able to understand the process of curriculum design, implementation, and evaluation

   1 2 3 4 5

2. I am confident that I possess the skills needed to implement the effective use of resources so that priority is given to supporting student learning.

   1 2 3 4 5

3. I am confident in my understanding of all of the instructional programs in my school

   1 2 3 4 5

4. I am confident in my ability to monitor the classroom curriculum to see that it covers the school's curricular objectives

   1 2 3 4 5

5. I understand how to align curriculum in all content areas

   1 2 3 4 5

Staff Evaluation

1. I am able to develop a systematic process for mentoring teachers on my campus.

1 2 3 4 5

2. I understand the development of a professional growth plan

   1 2 3 4 5

3. I am confident in my abilities to evaluate my staff

   1 2 3 4 5

4. I am confident in my knowledge of instruction when facilitating conversations with my staff

   1 2 3 4 5

5. I possess the ability to facilitate meaningful dialogue to assist staff in their own professional growth

   1 2 3 4 5

6. I have the ability to lead staff to set professional goals based on reflective practice

   1 2 3 4 5

School Improvement

1. I am confident in my skills to assess the staff development needs of a school

   1 2 3 4 5

2. I am confident in my knowledge of best-practice research related to instructional practices

   1 2 3 4 5

3. I am confident in my skills to engage staff in the development of effective campus improvement plans that result in improved student learning

   1 2 3 4 5

4. I am confident that I understand and can communicate to staff the complex instructional and motivational issues that are presented by a diverse student population

   1 2 3 4 5

5. I am able to use strategic planning processes to develop the vision of the school

1 2 3 4 5

6. I am confident that I possess the skills to lead a school community in the development of a clear vision

1 2 3 4 5

7. I am confident in my ability to lead teacher staff development activities centered on instruction

1 2 3 4 5

Use of Data to Improve Instruction

1. I am confident that I know how to use data about our school climate to encourage appropriate student behavior

1 2 3 4 5

2. I am confident that I know how to use data about our school climate to support a positive learning environment

1 2 3 4 5

3. I am confident that I know how to use data about our school climate to improve the school culture in ways that promotes staff and student morale.

1 2 3 4 5

4. I can explain to staff and parents how student data is used to increase student achievement.

1 2 3 4 5

5. I am confident in my ability to examine student performance data to extract the information necessary for school improvement planning

1 2 3 4 5

Creating a Positive School Culture

1. I have the ability to assess school climate using multiple methods

1 2 3 4 5

2. I have the ability to engage parents in the assessment of our school climate

1 2 3 4 5

3. I have the ability to engage staff in the assessment of our school climate

1 2 3 4 5

4. I have the ability to engage students in the assessment of our school climate

1 2 3 4 5

Thank you for taking part in this important research. You have made a valuable contribution to my study and to the understanding of how mentoring impacts self-efficacy in instructional leadership behavior.

Appendix B–Informed Consent Letter

To:	K-12 Grade Public School Principals
Researcher:	Julie D. Helber Principal – Saline High School, Saline, Michigan Eastern Michigan University Doctoral Student
Dissertation Title:	Mentoring and its impact on K-12 public school principals' instructional leadership self-efficacy.

I am a doctoral student at Eastern Michigan University. To complete my degree program I have chosen to conduct a study that I believe has significant relevance in education today. The current literature lacks information on the impact of mentoring and mentoring relationships to a principal's self-efficacy in instructional leadership tasks. The purpose of this study is to attempt to provide greater clarity on the influence of mentors on educational practice.

This survey is divided into two sections. It is important that both sections are completed to perform a thorough analysis of the survey results.

Only a code number will identify your questionnaire response. The survey is anonymous. At no time will your name be associated with your responses to the questionnaire. All information will be secure at all times.

There are no foreseeable risks to you by completing this survey, as all results will be kept completely confidential. The expected benefits to this study will be that the research will provide information on how mentoring influences self-efficacy in instructional leadership for principals.

Participation in this study is voluntary. Once the completed questionnaire is returned to me, your participation will have been completed. You may choose not to participate. If you do decide to participate, you can change your mind at any time and withdraw from the study without negative consequences.

Results will be presented in aggregate form only. No names or individually identifying information will be revealed. Results may be presented at research meetings and conferences, in scientific publications, and as part of a doctoral thesis being conducted by the principal researcher.

This research protocol and informed consent document has been reviewed and approved by the Eastern Michigan University Human Subjects Review Committee for use from April 13, 2014 to April 13, 2017. If you have questions about the approval process, please contact the USHRC at human.subjects@emich.edu or call 734-486-0042.

If you have any questions concerning your participation now or in the future, you can contact the principal researcher, Julie D. Helber at helberj@salineschools.org or 734-429-8032 or you may contact the dissertation chair, Dr. Ron Williamson at rwilliamson@emich.edu.

Sincerely,

Julie D. Helber

Consent to Participate:

I have read or had read to me all of the above information about this research study, including the research procedures, possible risks, side effects, and the likelihood of any benefit to me.

By clicking "I agree" in the electronic version of the survey (*Survey Monkey)* your completion and returning of the survey constitutes consent to participate and no other signature is needed. Further, by agreeing, you are indicating that you are a building principal and understand the consent form and agree to participate in the research study.

Appendix C–Permission to Use Survey Instruments

RE: Feedback on Connexions module: School Administrators' Efficacy: A Model and Measure
3 messages

Kajs, Lawrence <kajs@uhcl.edu>
To: Julie Helber <helberj@salineschools.org>
Cc: Dan McCollum <dan.mccollum@umuc.edu>
Julie,

I am sending a cc to Dr. Dan McCollum at the University of Maryland, who is first author on this work,

asking him to respond to your email.

The very best in your research.

Sincerely,

Larry Kajs

Lawrence T. Kajs, EdD

Professor & Chair

Educational Leadership

University of Houston-Clear Lake

2700 Bay Area Blvd.

Houston, TX 77059

281.283.3555 (office)

281.283.3630 (fax)

From: Theodore Creighton [mailto:tcreigh@vt.edu]

Sent: Tuesday, September 24, 2013 6:21 AM **To:** Julie Helber; Kajs, Lawrence

Subject: Re: Feedback on Connexions module: School Administrators' Efficacy: A Model and Measure

Julie - I represent the publisher, and we do not have the rights to this publication, so I am

forwarding your request to author, Dr. Larry Kajs, who owns the rights to the survey instrument

you reference. You may contact him directly at the University of Houston Clear Lake

(email: kajs@uhcl.edu)

School Administrators' Efficacy: A Model and Measure

On Mon, Sep 23, 2013 at 7:48 PM, Julie Helber <helberj@salineschools.org> wrote:

Hello, I am interested in using parts of the ELCC Questionnaire for a survey I am developing for my dissertation research. I am studying how mentoring impacts a principal's self efficacy in instructional leadership. How might I obtain permission to use parts of your survey?

Feedback on Connexions module: School Administrators' Efficacy: A Model and Measure

(http://cnx.org/content/m14845/latest/)

Julie Helber Principal Saline High School

Dan McCollum <dan.mccollum@umuc.edu>
To: Julie Helber <helberj@salineschools.org>
Cc: "Kajs, Lawrence" <kajs@uhcl.edu>
Thank you Larry.

Hi Julie,

You have my permission to use parts of the instrument for your research work.
You cannot use the instrument for any work that would lead to making a profit.
If you are not already, be aware that using parts of the instrument rather than using it how it currently exists will change its psychometric properties (e.g., reliability).
With that said, I see that you are creating a new survey instrument so you will probably evaluate all of that anyway.

Please cite and reference our work appropriately in your paper.

Best wishes,

Dr. Dan McCollum, Ph.D.
[Quoted text hidden]
--
Dr. Dan McCollum, Ph.D.
Senior Research Associate
Institutional Research Office

University of Maryland University College
Dan.McCollum@UMUC.edu
301-789-8044

Julie Helber <helberj@salineschools.org>
To: Dan McCollum <dan.mccollum@umuc.edu>
Cc: "Kajs, Lawrence" <kajs@uhcl.edu>
Dr. McCollum,

Thank you very much for granting me permission to use parts of the survey.
I appreciate your work and assure you that I am only using this for my dissertation research.
Your work will be referenced properly.

My sincere thanks,
Julie
[Quoted text hidden]
--
Julie D. Helber
Principal - Saline High School
1300 Campus Parkway
Saline, MI 48176
734-429-8030
The Pursuit of Excellence

Appendix D – Human Subjects Approval Form

EASTERN MICHIGAN UNIVERSITY

Education First

April 14, 2014 **UHSRC Initial Application Determination: EXPEDITED APPROVAL**

To: **Julie D. Helber**
Eastern Michigan University – Leadership & Counseling

Re: **UHSRC # 140310**
Category: Approved Expedited Research Project
Approval Date: April 13, 2014
Expiration Date: April 13, 2017

Title: **Self-efficacy and Instructional Leadership: Does Mentoring Make a Difference?**

The Eastern Michigan University Human Subjects Review Committee (UHSRC) has completed their review of your project. I am pleased to advise you that **your expedited research has been approved** in accordance with federal regulations.

Renewals: Expedited protocols need to be renewed annually. If the project is continuing, please submit the **Human Subjects Continuation Form** prior to the approval expiration. If the project is completed, please submit the **Human Subjects Study Completion Form** (both forms are found on the UHSRC website).

Revisions: Expedited protocols do require revisions. If changes are made to a protocol, please submit a **Human Subjects Minor Modification Form** or new **Human Subjects Approval Request Form** (if major changes) for review (see UHSRC website for forms).

Problems: If issues should arise during the conduct of the research, such as unanticipated problems, adverse events, or any problem that may increase the risk to human subjects and change the category of review, notify the UHSRC office within 24 hours. Any complaints from participants regarding the risk and benefits of the project must be reported to the UHSRC.

Follow-up: If your expedited research project is not completed and closed after **three years**, the UHSRC office will require a new **Human Subjects Approval Request Form** prior to approving a continuation beyond three years.

Please use the UHSRC number listed above on any forms submitted that relate to this project, or on any correspondence with the UHSRC office.

Good luck in your research. If we can be of further assistance, please contact us at 734-487-0042 or via e-mail at gs_human_subjects@emich.edu. Thank you for your cooperation.

Sincerely,

Kristine J Ajrouch

Dr. Kristine Ajrouch
Faculty Co-chair
University Human Subjects Review Committee

University Human Subjects Review Committee · Eastern Michigan University · 200 Boone Hall
Ypsilanti, Michigan 48197
Phone: 734.487.0042 Fax: 734.487.0060
E-mail: human.subjects@emich.edu
www.ord.emich.edu (see Federal Compliance)

Appendix E– SPSS Output

Frequencies

Statistics

		Female	Age (categorized)	School is rural/suburban/urban	School is elementary/middle school/high school	What education did the respondent have?
N	Valid	503	505	508	506	508
	Missing	5	3	0	2	0

Statistics

		AfAmer	Tenure - how long has the respondent been a principal?
N	Valid	504	505
	Missing	4	3

Frequency Table

Female

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male Respondents	276	54.3	54.9	54.9
	Female Respondents	227	44.7	45.1	100.0
	Total	503	99.0	100.0	
Missing	System	5	1.0		
Total		508	100.0		

Age (categorized)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	24 to 34	23	4.5	4.6	4.6
	35 to 44	192	37.8	38.0	42.6
	45 to 54	173	34.1	34.3	76.8
	55 to 64	109	21.5	21.6	98.4
	65+	8	1.6	1.6	100.0
	Total	505	99.4	100.0	
Missing	System	3	.6		
Total		508	100.0		

School is rural/suburban/urban

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rural	247	48.6	48.6	48.6
	Suburban	196	38.6	38.6	87.2
	Urban	65	12.8	12.8	100.0
	Total	508	100.0	100.0	

School is elementary/middle school/high school

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Elementary	230	45.3	45.5	45.5
	K-8	15	3.0	3.0	48.4
	Middle School	87	17.1	17.2	65.6
	High School+Middle School	27	5.3	5.3	70.9
	K-12	23	4.5	4.5	75.5
	High School	124	24.4	24.5	100.0
	Total	506	99.6	100.0	
Missing	System	2	.4		
Total		508	100.0		

What education did the respondent have?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Master	332	65.4	65.4	65.4
	Educational Specialist	135	26.6	26.6	91.9
	Ph.D.	41	8.1	8.1	100.0
	Total	508	100.0	100.0	

AfAmer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	474	93.3	94.0	94.0
	1.00	30	5.9	6.0	100.0
	Total	504	99.2	100.0	

Missing	System	4	.8		
Total		508	100.0		

Tenure - how long has the respondent been a principal?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 1 year	26	5.1	5.1	5.1
	1 to 3 years	81	15.9	16.0	21.2
	4 to 6 years	119	23.4	23.6	44.8
	7 to 10 years	107	21.1	21.2	65.9
	10+ years	172	33.9	34.1	100.0
	Total	505	99.4	100.0	
Missing	System	3	.6		
Total		508	100.0		

Factor Analysis

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
C_coach	4.0932	.93604	279
MC_Challenge	3.3763	1.34577	279
MC_sponsor	3.8996	1.20130	279
MP_trust	4.3907	.84482	279
MP_friend	3.9606	1.08384	279
MP_counsel	3.9462	1.07655	279
MVic_Modeling	4.1362	1.05056	279
Mvic_similar	3.0072	1.23204	279
Mvic_alongside	3.6738	1.25423	279
Mvb_encourage	4.1326	.92932	279
Mvb_knowskills	4.1792	.96156	279
Mvb_skilled	4.1900	.96510	279

Correlation Matrix

		C_coach	MC_Challenge	MC_sponsor	MP_trust	MP_friend
Correlation	C_coach	1.000	.258	.437	.500	.475
	MC_Challenge	.258	1.000	.500	.259	.215
	MC_sponsor	.437	.500	1.000	.489	.403
	MP_trust	.500	.259	.489	1.000	.700

	MP_friend	.475	.215	.403	.700	1.000
	MP_counsel	.308	.225	.360	.577	.572
	MVic_Modeling	.463	.299	.535	.645	.554
	Mvic_similar	.333	.228	.380	.364	.445
	Mvic_alongside	.440	.540	.549	.389	.406
	Mvb_encourage	.499	.222	.495	.598	.541
	Mvb_knowskills	.557	.253	.439	.618	.511
	Mvb_skilled	.462	.269	.469	.672	.540

Correlation Matrix

		MP_counsel	MVic_Modeling	Mvic_similar	Mvic_alongside
Correlation	C_coach	.308	.463	.333	.440
	MC_Challenge	.225	.299	.228	.540
	MC_sponsor	.360	.535	.380	.549
	MP_trust	.577	.645	.364	.389
	MP_friend	.572	.554	.445	.406
	MP_counsel	1.000	.569	.445	.344
	MVic_Modeling	.569	1.000	.455	.479
	Mvic_similar	.445	.455	1.000	.393
	Mvic_alongside	.344	.479	.393	1.000
	Mvb_encourage	.496	.530	.395	.355
	Mvb_knowskills	.527	.567	.424	.365
	Mvb_skilled	.515	.677	.447	.366

Correlation Matrix

		Mvb_encourage	Mvb_knowskills	Mvb_skilled
Correlation	C_coach	.499	.557	.462
	MC_Challenge	.222	.253	.269
	MC_sponsor	.495	.439	.469
	MP_trust	.598	.618	.672
	MP_friend	.541	.511	.540
	MP_counsel	.496	.527	.515
	MVic_Modeling	.530	.567	.677
	Mvic_similar	.395	.424	.447
	Mvic_alongside	.355	.365	.366
	Mvb_encourage	1.000	.609	.549

	Mvb_knowskills	.609	1.000	.692
	Mvb_skilled	.549	.692	1.000

Communalities

	Initial	Extraction
C_coach	.436	.396
MC_Challenge	.361	.487
MC_sponsor	.502	.566
MP_trust	.669	.692
MP_friend	.577	.562
MP_counsel	.487	.474
MVic_Modeling	.604	.618
Mvic_similar	.343	.320
Mvic_alongside	.482	.619
Mvb_encourage	.513	.533
Mvb_knowskills	.609	.609
Mvb_skilled	.635	.636

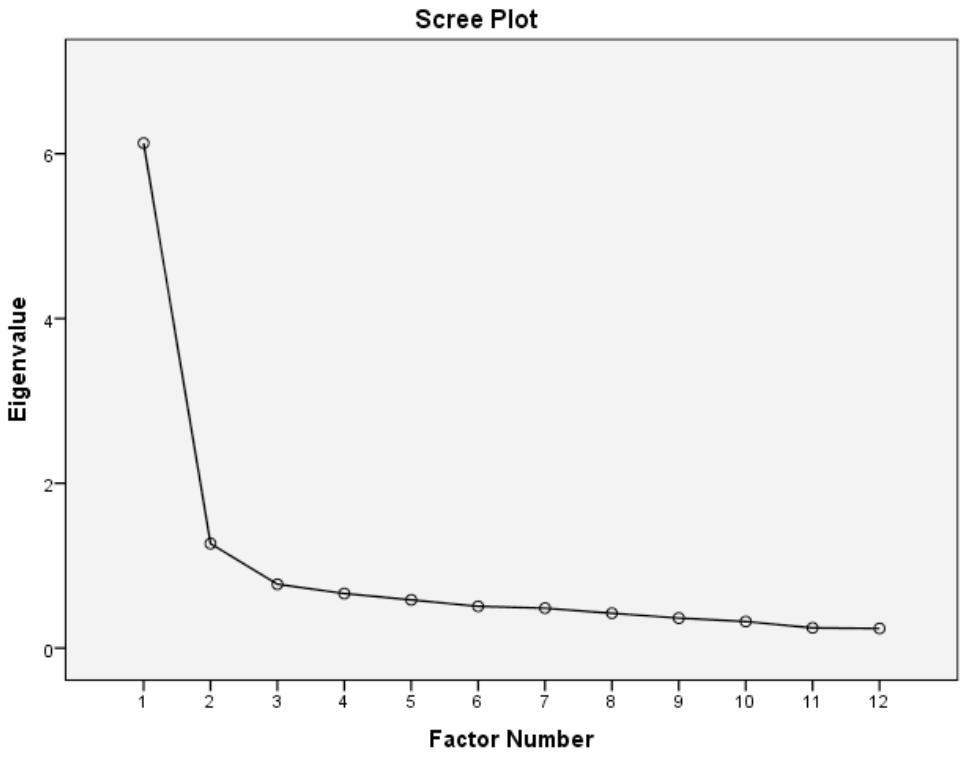
Extraction Method: Principal Axis Factoring.

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.129	51.078	51.078	5.690	47.419	47.419
2	1.268	10.566	61.645	.822	6.850	54.269
3	.775	6.456	68.101			
4	.662	5.516	73.617			
5	.585	4.873	78.490			
6	.506	4.221	82.711			
7	.484	4.031	86.742			
8	.423	3.522	90.264			
9	.364	3.031	93.295			
10	.322	2.686	95.981			
11	.245	2.041	98.023			
12	.237	1.977	100.000			

Extraction Method: Principal Axis Factoring.

a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.



Factor Matrix[a]

	Factor	
	1	2
C_coach	.629	.028
MC_Challenge	.437	.544
MC_sponsor	.674	.335
MP_trust	.806	-.205
MP_friend	.731	-.168
MP_counsel	.669	-.164
MVic_Modeling	.785	-.041
Mvic_similar	.565	.016
Mvic_alongside	.619	.486
Mvb_encourage	.718	-.131
Mvb_knowskills	.761	-.174
Mvb_skilled	.779	-.172

Extraction Method: Principal Axis Factoring.[a]

a. 2 factors extracted. 8 iterations required.

Pattern Matrix[a]

	Factor	
	1	2
C_coach	.516	.172
MC_Challenge	-.088	.744
MC_sponsor	.293	.547
MP_trust	.867	-.066
MP_friend	.770	-.038
MP_counsel	.714	-.048
MVic_Modeling	.709	.124
Mvic_similar	.472	.144
Mvic_alongside	.117	.715
Mvb_encourage	.729	.002
Mvb_knowskills	.802	-.039
Mvb_skilled	.816	-.033

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.[a]

a. Rotation converged in 4 iterations.

Structure Matrix

	Factor	
	1	2
C_coach	.613	.462
MC_Challenge	.330	.694
MC_sponsor	.601	.712
MP_trust	.830	.422
MP_friend	.749	.395
MP_counsel	.687	.354
MVic_Modeling	.779	.523
Mvic_similar	.553	.409
Mvic_alongside	.520	.781
Mvb_encourage	.730	.412
Mvb_knowskills	.780	.413

Mvb_skilled	.797	.426

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.

Factor Correlation Matrix

Factor	1	2
1	1.000	.563
2	.563	1.000

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.

Reliability

Scale: Mentoring

Case Processing Summary

		N	%
Cases	Valid	279	54.9
	Excluded[a]	229	45.1
	Total	508	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.903	12

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
C_coach	42.8925	71.298	.596	.896
MC_Challenge	43.6093	70.318	.419	.908
MC_sponsor	43.0860	67.244	.655	.893
MP_trust	42.5950	70.415	.738	.891
MP_friend	43.0251	68.327	.675	.892
MP_counsel	43.0394	69.297	.622	.895
MVic_Modeling	42.8495	67.697	.740	.889
Mvic_similar	43.9785	68.942	.544	.899
Mvic_alongside	43.3118	67.589	.603	.896
Mvb_encourage	42.8530	70.342	.667	.893
Mvb_knowskills	42.8065	69.437	.701	.891
Mvb_skilled	42.7957	69.156	.717	.891

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
46.9857	81.597	9.03310	12

Factor Analysis

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
SE_process	3.3464	.57100	485
SE_Curresource	3.4330	.58753	485
SE_Curinstruprogram	3.2763	.65394	485
SE_curmonitor	3.2660	.61773	485
SE_curalign	3.1113	.66802	485
SE_Evalprocformentoring	3.0268	.65026	485
SE_Evalgrowthplan	3.2784	.62228	485
SE_evaluate	3.4082	.62517	485

SE_Evalinstructionalknowledge	3.4082	.60502	485
SE_Evaldialogue	3.3711	.61523	485
SE_Evalreflection	3.3443	.61573	485
SE_SIneeds	3.3134	.59676	485
SE_SIbpresearch	3.2165	.63028	485
SE_SIengagestaff	3.2144	.60933	485
SE_SIstrategplan	3.0928	.62129	485
SE_SIvision	3.2557	.61372	485
SE_SIinstruction	3.3031	.59690	485
SE_Datastaffparent	3.3485	.59285	485
SE_Dataanalysis	3.2742	.60050	485
SE_Datatypes	3.1526	.59389	485
SE_Datastudachieve	3.2454	.59579	485
SE_Cultassess	3.2103	.65009	485
SE_Cultengpar	3.0907	.63312	485
SE_Cultengstaff	3.2722	.59971	485
SE_Cultengstud	3.2000	.60234	485
SE_Cultdatastbehavior	3.2577	.61116	485
SE_Cultdataposenvrion	3.2804	.60961	485

Correlation Matrix

		SE_process	SE_Curresource	SE_Curinstruprogram	SE_curmonitor
Correlation	SE_process	1.000	.568	.485	.535
	SE_Curresource	.568	1.000	.581	.559
	SE_Curinstruprogram	.485	.581	1.000	.564
	SE_curmonitor	.535	.559	.564	1.000
	SE_curalign	.592	.461	.473	.569
	SE_Evalprocformentoring	.309	.364	.332	.394
	SE_Evalgrowthplan	.467	.534	.415	.484
	SE_evaluate	.471	.592	.461	.494
	SE_Evalinstructionalknowledge	.493	.507	.435	.444
	SE_Evaldialogue	.445	.549	.412	.430
	SE_Evalreflection	.453	.581	.415	.443
	SE_SIneeds	.475	.561	.487	.457

	SE_SIbpresearch	.440	.461	.436	.425
	SE_SIengagestaff	.469	.496	.432	.419
	SE_SIstrategplan	.439	.433	.389	.420
	SE_SIvision	.448	.495	.364	.452
	SE_SIinstruction	.546	.538	.441	.509
	SE_Datastaffparent	.491	.509	.359	.457
	SE_Dataanalysis	.445	.477	.364	.471
	SE_Datatypes	.392	.420	.312	.435
	SE_Datastudachieve	.466	.487	.351	.462
	SE_Cultassess	.299	.448	.334	.349
	SE_Cultengpar	.256	.361	.274	.303
	SE_Cultengstaff	.334	.498	.356	.367
	SE_Cultengstud	.333	.455	.342	.329
	SE_Cultdatastbehavior	.401	.529	.406	.409
	SE_Cultdataposenvrion	.397	.543	.386	.400

Correlation Matrix

		SE_curalign	SE_Evalprocformentoring	SE_Evalgrowthplan	SE_evaluate
Correlation	SE_process	.592	.309	.467	.471
	SE_Curresource	.461	.364	.534	.592
	SE_Curinstruprogram	.473	.332	.415	.461
	SE_curmonitor	.569	.394	.484	.494
	SE_curalign	1.000	.359	.457	.410
	SE_Evalprocformentoring	.359	1.000	.543	.451
	SE_Evalgrowthplan	.457	.543	1.000	.600
	SE_evaluate	.410	.451	.600	1.000
	SE_Evalinstructionalknowledge	.419	.434	.510	.678
	SE_Evaldialogue	.412	.471	.555	.626
	SE_Evalreflection	.414	.457	.547	.595
	SE_SIneeds	.425	.420	.521	.542
	SE_SIbpresearch	.394	.364	.410	.452
	SE_SIengagestaff	.413	.387	.463	.453
	SE_SIstrategplan	.448	.377	.446	.402
	SE_SIvision	.399	.356	.452	.508

	SE_Slinstruction	.449	.405	.512	.526
	SE_Datastaffparent	.476	.335	.465	.435
	SE_Dataanalysis	.465	.336	.475	.411
	SE_Datatypes	.426	.407	.416	.466
	SE_Datastudachieve	.471	.351	.473	.424
	SE_Cultassess	.279	.466	.478	.449
	SE_Cultengpar	.201	.350	.397	.392
	SE_Cultengstaff	.306	.389	.522	.508
	SE_Cultengstud	.289	.419	.463	.485
	SE_Cultdatastbehavior	.309	.430	.523	.503
	SE_Cultdataposenvrion	.314	.403	.524	.518

Correlation Matrix

		SE_Evalinstructionalknowledge	SE_Evaldialogue	SE_Evalreflection	SE_SIneeds
Correlation	SE_process	.493	.445	.453	.475
	SE_Curresource	.507	.549	.581	.561
	SE_Curinstruprogram	.435	.412	.415	.487
	SE_curmonitor	.444	.430	.443	.457
	SE_curalign	.419	.412	.414	.425
	SE_Evalprocformentoring	.434	.471	.457	.420
	SE_Evalgrowthplan	.510	.555	.547	.521
	SE_evaluate	.678	.626	.595	.542
	SE_Evalinstructionalknowledge	1.000	.724	.620	.549
	SE_Evaldialogue	.724	1.000	.747	.600
	SE_Evalreflection	.620	.747	1.000	.617
	SE_SIneeds	.549	.600	.617	1.000
	SE_SIbpresearch	.537	.469	.526	.572
	SE_SIengagestaff	.468	.509	.524	.610
	SE_SIstrategplan	.421	.445	.478	.468
	SE_SIvision	.464	.514	.521	.531
	SE_Slinstruction	.589	.537	.559	.597
	SE_Datastaffparent	.501	.483	.474	.497
	SE_Dataanalysis	.459	.468	.443	.486
	SE_Datatypes	.476	.450	.444	.506

	SE_Datastudachieve	.467	.444	.451	.545
	SE_Cultassess	.443	.522	.500	.432
	SE_Cultengpar	.383	.385	.439	.362
	SE_Cultengstaff	.473	.532	.529	.500
	SE_Cultengstud	.416	.446	.471	.463
	SE_Cultdatastbehavior	.519	.503	.477	.503
	SE_Cultdataposenvrion	.512	.521	.502	.491

Correlation Matrix

		SE_SIbpresearch	SE_SIengagestaff	SE_SIstrategplan	SE_SIvision
Correlation	SE_process	.440	.469	.439	.448
	SE_Curresource	.461	.496	.433	.495
	SE_Curinstruprogram	.436	.432	.389	.364
	SE_curmonitor	.425	.419	.420	.452
	SE_curalign	.394	.413	.448	.399
	SE_Evalprocformentoring	.364	.387	.377	.356
	SE_Evalgrowthplan	.410	.463	.446	.452
	SE_evaluate	.452	.453	.402	.508
	SE_Evalinstructionalknowledge	.537	.468	.421	.464
	SE_Evaldialogue	.469	.509	.445	.514
	SE_Evalreflection	.526	.524	.478	.521
	SE_SIneeds	.572	.610	.468	.531
	SE_SIbpresearch	1.000	.589	.429	.444
	SE_SIengagestaff	.589	1.000	.570	.522
	SE_SIstrategplan	.429	.570	1.000	.637
	SE_SIvision	.444	.522	.637	1.000
	SE_SIinstruction	.578	.542	.498	.555
	SE_Datastaffparent	.505	.473	.507	.482
	SE_Dataanalysis	.520	.505	.480	.437
	SE_Datatypes	.480	.486	.432	.414
	SE_Datastudachieve	.563	.509	.480	.421
	SE_Cultassess	.398	.423	.448	.512
	SE_Cultengpar	.344	.373	.446	.424
	SE_Cultengstaff	.396	.445	.476	.518

	SE_Cultengstud	.381	.429	.425	.499
	SE_Cultdatastbehavior	.461	.506	.486	.529
	SE_Cultdataposenvrion	.428	.516	.466	.520

Correlation Matrix

		SE_Slinstruction	SE_Datastaffparent	SE_Dataanalysis
Correlation	SE_process	.546	.491	.445
	SE_Curresource	.538	.509	.477
	SE_Curinstruprogram	.441	.359	.364
	SE_curmonitor	.509	.457	.471
	SE_curalign	.449	.476	.465
	SE_Evalprocformentoring	.405	.335	.336
	SE_Evalgrowthplan	.512	.465	.475
	SE_evaluate	.526	.435	.411
	SE_Evalinstructionalknowledge	.589	.501	.459
	SE_Evaldialogue	.537	.483	.468
	SE_Evalreflection	.559	.474	.443
	SE_SIneeds	.597	.497	.486
	SE_SIbpresearch	.578	.505	.520
	SE_SIengagestaff	.542	.473	.505
	SE_SIstrategplan	.498	.507	.480
	SE_SIvision	.555	.482	.437
	SE_Slinstruction	1.000	.530	.511
	SE_Datastaffparent	.530	1.000	.729
	SE_Dataanalysis	.511	.729	1.000
	SE_Datatypes	.505	.500	.549
	SE_Datastudachieve	.517	.693	.764
	SE_Cultassess	.421	.394	.334
	SE_Cultengpar	.359	.317	.337
	SE_Cultengstaff	.473	.430	.400
	SE_Cultengstud	.394	.371	.356
	SE_Cultdatastbehavior	.482	.487	.471
	SE_Cultdataposenvrion	.481	.495	.456

Correlation Matrix

		SE_Datatypes	SE_Datastudachieve	SE_Cultassess
Correlation	SE_process	.392	.466	.299
	SE_Curresource	.420	.487	.448
	SE_Curinstruprogram	.312	.351	.334
	SE_curmonitor	.435	.462	.349
	SE_curalign	.426	.471	.279
	SE_Evalprocformentoring	.407	.351	.466
	SE_Evalgrowthplan	.416	.473	.478
	SE_evaluate	.466	.424	.449
	SE_Evalinstructionalknowledge	.476	.467	.443
	SE_Evaldialogue	.450	.444	.522
	SE_Evalreflection	.444	.451	.500
	SE_SIneeds	.506	.545	.432
	SE_SIbpresearch	.480	.563	.398
	SE_SIengagestaff	.486	.509	.423
	SE_SIstrategplan	.432	.480	.448
	SE_SIvision	.414	.421	.512
	SE_SIinstruction	.505	.517	.421
	SE_Datastaffparent	.500	.693	.394
	SE_Dataanalysis	.549	.764	.334
	SE_Datatypes	1.000	.571	.393
	SE_Datastudachieve	.571	1.000	.389
	SE_Cultassess	.393	.389	1.000
	SE_Cultengpar	.353	.335	.616
	SE_Cultengstaff	.382	.391	.685
	SE_Cultengstud	.371	.381	.636
	SE_Cultdatastbehavior	.398	.484	.643
	SE_Cultdataposenvrion	.412	.447	.643

Correlation Matrix

		SE_Cultengpar	SE_Cultengstaff	SE_Cultengstud
Correlation	SE_process	.256	.334	.333
	SE_Curresource	.361	.498	.455
	SE_Curinstruprogram	.274	.356	.342
	SE_curmonitor	.303	.367	.329

	SE_curalign	.201	.306	.289
	SE_Evalprocformentoring	.350	.389	.419
	SE_Evalgrowthplan	.397	.522	.463
	SE_evaluate	.392	.508	.485
	SE_Evalinstructionalknowledge	.383	.473	.416
	SE_Evaldialogue	.385	.532	.446
	SE_Evalreflection	.439	.529	.471
	SE_SIneeds	.362	.500	.463
	SE_SIbpresearch	.344	.396	.381
	SE_SIengagestaff	.373	.445	.429
	SE_SIstrategplan	.446	.476	.425
	SE_SIvision	.424	.518	.499
	SE_SIinstruction	.359	.473	.394
	SE_Datastaffparent	.317	.430	.371
	SE_Dataanalysis	.337	.400	.356
	SE_Datatypes	.353	.382	.371
	SE_Datastudachieve	.335	.391	.381
	SE_Cultassess	.616	.685	.636
	SE_Cultengpar	1.000	.659	.684
	SE_Cultengstaff	.659	1.000	.764
	SE_Cultengstud	.684	.764	1.000
	SE_Cultdatastbehavior	.564	.705	.696
	SE_Cultdataposenvrion	.550	.746	.674

Correlation Matrix

		SE_Cultdatastbehavior	SE_Cultdataposenvrion
Correlation	SE_process	.401	.397
	SE_Curresource	.529	.543
	SE_Curinstruprogram	.406	.386
	SE_curmonitor	.409	.400
	SE_curalign	.309	.314
	SE_Evalprocformentoring	.430	.403
	SE_Evalgrowthplan	.523	.524
	SE_evaluate	.503	.518
	SE_Evalinstructionalknowledge	.519	.512
	SE_Evaldialogue	.503	.521

	SE_Evalreflection	.477	.502
	SE_SIneeds	.503	.491
	SE_SIbpresearch	.461	.428
	SE_SIengagestaff	.506	.516
	SE_SIstrategplan	.486	.466
	SE_SIvision	.529	.520
	SE_SIinstruction	.482	.481
	SE_Datastaffparent	.487	.495
	SE_Dataanalysis	.471	.456
	SE_Datatypes	.398	.412
	SE_Datastudachieve	.484	.447
	SE_Cultassess	.643	.643
	SE_Cultengpar	.564	.550
	SE_Cultengstaff	.705	.746
	SE_Cultengstud	.696	.674
	SE_Cultdatastbehavior	1.000	.870
	SE_Cultdataposenvrion	.870	1.000

Communalities

	Initial	Extraction
SE_process	.532	.498
SE_Curresource	.599	.563
SE_Curinstruprogram	.485	.411
SE_curmonitor	.528	.482
SE_curalign	.509	.459
SE_Evalprocformentoring	.416	.344
SE_Evalgrowthplan	.552	.516
SE_evaluate	.617	.605
SE_Evalinstructionalknowledge	.667	.583
SE_Evaldialogue	.707	.620
SE_Evalreflection	.657	.609
SE_SIneeds	.603	.570
SE_SIbpresearch	.538	.483
SE_SIengagestaff	.562	.503
SE_SIstrategplan	.553	.455

SE_SIvision	.568	.485
SE_SIinstruction	.577	.567
SE_Datastaffparent	.634	.646
SE_Dataanalysis	.691	.736
SE_Datatypes	.474	.446
SE_Datastudachieve	.683	.735
SE_Cultassess	.611	.620
SE_Cultengpar	.572	.548
SE_Cultengstaff	.736	.763
SE_Cultengstud	.696	.705
SE_Cultdatastbehavior	.801	.723
SE_Cultdataposenvrion	.806	.719

Extraction Method: Principal Axis Factoring.

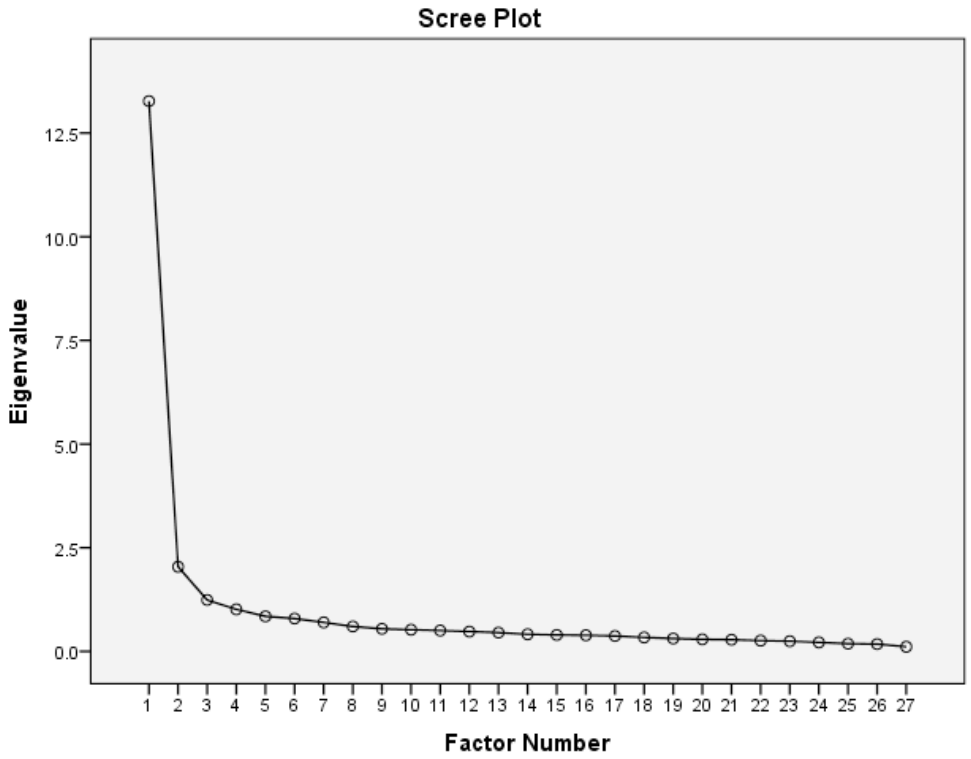
Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.271	49.154	49.154	12.852	47.599	47.599
2	2.041	7.560	56.714	1.675	6.204	53.803
3	1.240	4.592	61.306	.867	3.209	57.012
4	1.014	3.755	65.062			
5	.845	3.128	68.190			
6	.794	2.940	71.130			
7	.699	2.590	73.719			
8	.600	2.224	75.943			
9	.545	2.017	77.960			
10	.523	1.938	79.899			
11	.503	1.863	81.762			
12	.479	1.774	83.536			
13	.453	1.678	85.214			
14	.413	1.531	86.745			
15	.396	1.467	88.212			
16	.389	1.442	89.655			
17	.371	1.375	91.030			
18	.336	1.246	92.275			
19	.311	1.153	93.428			
20	.291	1.078	94.506			

21	.282	1.045	95.551			
22	.260	.965	96.516			
23	.246	.912	97.428			
24	.218	.807	98.235			
25	.187	.694	98.929			
26	.177	.656	99.584			
27	.112	.416	100.000			

Extraction Method: Principal Axis Factoring.

a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.



Factor Matrix[a]

	Factor		
	1	2	3
SE_process	.641	.278	-.101
SE_Curresource	.730	.094	-.146
SE_Curinstruprogram	.591	.156	-.192
SE_curmonitor	.645	.233	-.104
SE_curalign	.593	.324	-.055
SE_Evalprocformentoring	.573	-.047	-.116

SE_Evalgrowthplan	.708	.004	-.120
SE_evaluate	.725	.013	-.280
SE_Evalinstructionalknowledge	.730	.075	-.211
SE_Evaldialogue	.747	.012	-.249
SE_Evalreflection	.747	.012	-.226
SE_SIneeds	.743	.107	-.080
SE_SIbpresearch	.672	.166	.059
SE_SIengagestaff	.701	.091	.048
SE_SIstrategplan	.666	.025	.105
SE_SIvision	.695	-.044	-.003
SE_SIinstruction	.733	.164	-.051
SE_Datastaffparent	.702	.236	.312
SE_Dataanalysis	.693	.289	.415
SE_Datatypes	.636	.156	.130
SE_Datastudachieve	.703	.280	.403
SE_Cultassess	.677	-.402	.020
SE_Cultengpar	.594	-.432	.097
SE_Cultengstaff	.732	-.474	.048
SE_Cultengstud	.683	-.483	.068
SE_Cultdatastbehavior	.757	-.363	.132
SE_Cultdataposenvrion	.754	-.375	.104

Extraction Method: Principal Axis Factoring.[a]

a. 3 factors extracted. 6 iterations required.

Pattern Matrix[a]

	Factor		
	1	2	3
SE_process	.664	.143	.169
SE_Curresource	.668	-.079	.045
SE_Curinstruprogram	.687	.062	-.013
SE_curmonitor	.644	.092	.144
SE_curalign	.601	.192	.236
SE_Evalprocformentoring	.456	-.200	-.026
SE_Evalgrowthplan	.566	-.188	.027
SE_evaluate	.799	-.110	-.159
SE_Evalinstructionalknowledge	.745	-.071	-.044

SE_Evaldialogue	.768	-.133	-.117
SE_Evalreflection	.737	-.142	-.088
SE_SIneeds	.593	-.099	.135
SE_SIbpresearch	.400	-.071	.315
SE_SIengagestaff	.387	-.162	.271
SE_SIstrategplan	.252	-.252	.299
SE_SIvision	.373	-.293	.141
SE_SIinstruction	.582	-.043	.195
SE_Datastaffparent	.116	-.118	.663
SE_Dataanalysis	.002	-.100	.813
SE_Datatypes	.278	-.102	.388
SE_Datastudachieve	.019	-.109	.795
SE_Cultassess	.122	-.710	-.012
SE_Cultengpar	-.047	-.751	.047
SE_Cultengstaff	.072	-.826	.000
SE_Cultengstud	.013	-.828	.009
SE_Cultdatastbehavior	.039	-.745	.162
SE_Cultdataposenvrion	.067	-.744	.123

Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser Normalization.[a]

a. Rotation converged in 7 iterations.

Structure Matrix

	Factor		
	1	2	3
SE_process	.685	-.343	.550
SE_Curresource	.747	-.519	.515
SE_Curinstruprogram	.639	-.367	.415
SE_curmonitor	.681	-.372	.533
SE_curalign	.635	-.280	.557
SE_Evalprocformentoring	.565	-.478	.352
SE_Evalgrowthplan	.703	-.557	.474
SE_evaluate	.763	-.552	.410
SE_Evalinstructionalknowledge	.761	-.525	.474
SE_Evaldialogue	.775	-.573	.441

SE_Evalreflection	.769	-.574	.453
SE_SIneeds	.744	-.527	.564
SE_SIbpresearch	.652	-.446	.606
SE_SIengagestaff	.669	-.514	.590
SE_SIstrategplan	.608	-.528	.564
SE_SIvision	.652	-.584	.502
SE_SIinstruction	.738	-.488	.595
SE_Datastaffparent	.627	-.450	.785
SE_Dataanalysis	.600	-.419	.853
SE_Datatypes	.597	-.429	.610
SE_Datastudachieve	.611	-.432	.850
SE_Cultassess	.563	-.782	.346
SE_Cultengpar	.459	-.740	.310
SE_Cultengstaff	.594	-.872	.371
SE_Cultengstud	.542	-.840	.341
SE_Cultdatastbehavior	.617	-.833	.480
SE_Cultdataposenvrion	.619	-.835	.458

Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser Normalization.

Factor Correlation Matrix

Factor	1	2	3
1	1.000	-.632	.658
2	-.632	1.000	-.391
3	.658	-.391	1.000

Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser Normalization.

Reliability

Scale: Self-Efficacy General

Case Processing Summary

		N	%
Cases	Valid	491	96.7
	Excluded[a]	17	3.3
	Total	508	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.941	17

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
SE_process	52.3279	50.947	.660	.938
SE_Curresource	52.2464	50.325	.719	.937
SE_Curinstruprogram	52.3992	50.530	.614	.939
SE_curmonitor	52.4073	50.491	.659	.938
SE_curalign	52.5642	50.418	.613	.939
SE_Evalprocformentoring	52.6477	51.102	.554	.941
SE_Evalgrowthplan	52.3971	50.220	.687	.938
SE_evaluate	52.2688	49.932	.718	.937
SE_Evalinstructionalknowledge	52.2688	50.119	.721	.937
SE_Evaldialogue	52.3055	49.919	.733	.937
SE_Evalreflection	52.3299	49.854	.739	.936
SE_SIneeds	52.3625	50.105	.734	.937
SE_SIbpresearch	52.4582	50.441	.651	.938
SE_SIengagestaff	52.4623	50.396	.683	.938
SE_SIstrategplan	52.5804	50.709	.629	.939
SE_SIvision	52.4196	50.522	.661	.938
SE_SIinstruction	52.3727	50.153	.728	.937

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
55.6762	56.648	7.52649	17

Reliability

Scale: Self-Efficacy Data Use

Case Processing Summary

		N	%
Cases	Valid	501	98.6
	Excluded[a]	7	1.4
	Total	508	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.873	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
SE_Datastaffparent	9.6587	2.401	.735	.835
SE_Dataanalysis	9.7385	2.281	.799	.809
SE_Datatypes	9.8523	2.610	.598	.888
SE_Datastudachieve	9.7625	2.321	.790	.813

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
13.0040	4.100	2.02484	4

Reliability
Scale: Self-Efficacy Positive Culture

Case Processing Summary

		N	%
Cases	Valid	508	100.0
	Excluded[a]	0	.0
	Total	508	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.924	6

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
SE_Cultassess	16.1063	6.928	.739	.916
SE_Cultengpar	16.2264	7.106	.701	.921
SE_Cultengstaff	16.0453	6.931	.827	.904
SE_Cultengstud	16.1161	6.959	.807	.907
SE_Cultdatastbehavior	16.0630	6.915	.811	.906
SE_Cultdataposenvrion	16.0374	6.912	.812	.906

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
19.3189	9.870	3.14173	6

Descriptives

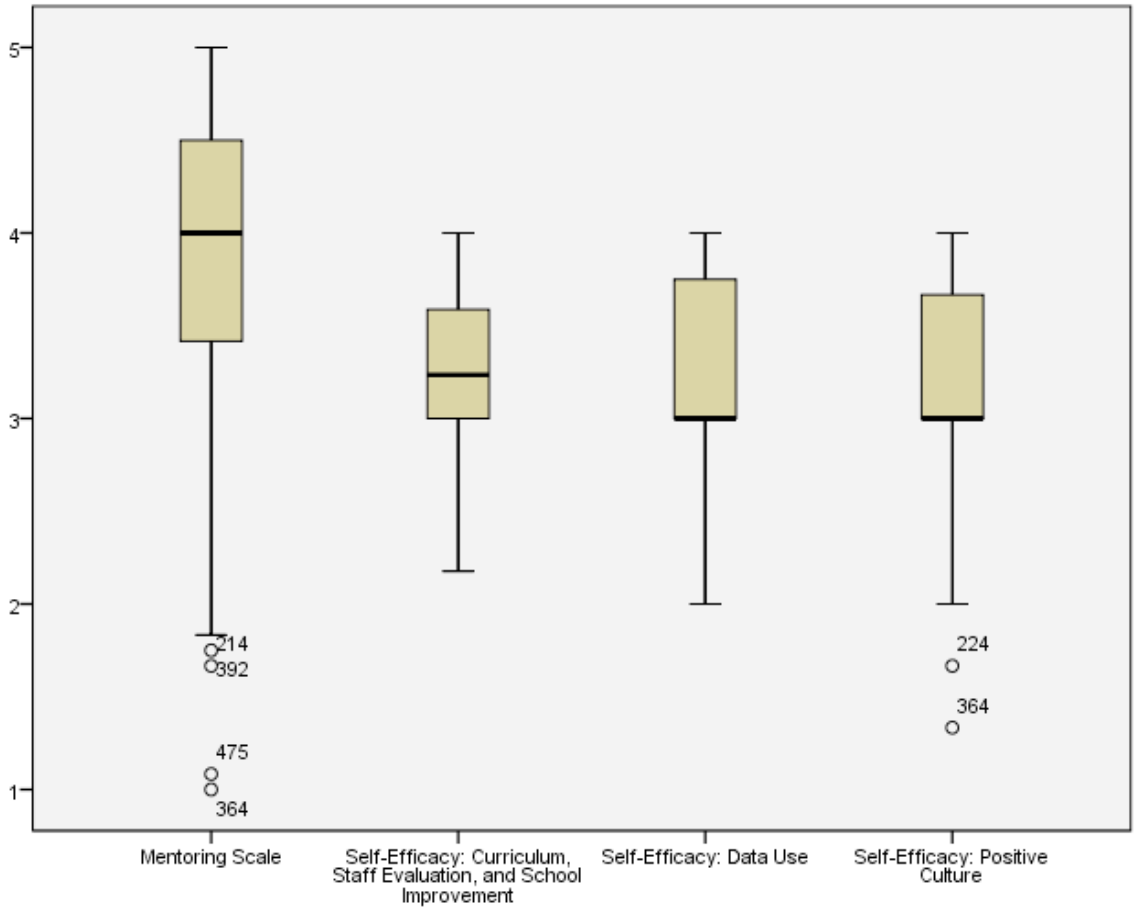
Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Mentoring Scale	295	1.00	5.00	3.9223	.74183
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	508	1.06	4.00	3.2743	.43996
Self-Efficacy: Data Use	508	1.00	4.00	3.2508	.50476
Self-Efficacy: Positive Culture	508	1.00	4.00	3.2198	.52362
Valid N (listwise)	295				

Explore

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Mentoring Scale	295	58.1%	213	41.9%	508	100.0%
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	295	58.1%	213	41.9%	508	100.0%
Self-Efficacy: Data Use	295	58.1%	213	41.9%	508	100.0%
Self-Efficacy: Positive Culture	295	58.1%	213	41.9%	508	100.0%



General Linear Model

Between-Subjects Factors

		Value Label	N
Female	.00	Male Respondents	162

	1.00	Female Respondents	131

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.989	6591.197[b]	4.000	288.000	.000
	Wilks' Lambda	.011	6591.197[b]	4.000	288.000	.000
	Hotelling's Trace	91.544	6591.197[b]	4.000	288.000	.000
	Roy's Largest Root	91.544	6591.197[b]	4.000	288.000	.000
Female	Pillai's Trace	.041	3.058[b]	4.000	288.000	.017
	Wilks' Lambda	.959	3.058[b]	4.000	288.000	.017
	Hotelling's Trace	.042	3.058[b]	4.000	288.000	.017
	Roy's Largest Root	.042	3.058[b]	4.000	288.000	.017

a. Design: Intercept + Female

b. Exact statistic

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Mentoring Scale	.334[a]	1	.334	.622	.431
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	.749[b]	1	.749	5.134	.024
	Self-Efficacy: Data Use	.495[c]	1	.495	2.425	.120
	Self-Efficacy: Positive Culture	.048[d]	1	.048	.200	.655
Intercept	Mentoring Scale	4484.179	1	4484.179	8347.490	.000
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	3136.047	1	3136.047	21486.417	.000
	Self-Efficacy: Data Use	3117.952	1	3117.952	15270.879	.000
	Self-Efficacy: Positive Culture	3018.649	1	3018.649	12564.025	.000
Female	Mentoring Scale	.334	1	.334	.622	.431

	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	.749	1	.749	5.134	.024
	Self-Efficacy: Data Use	.495	1	.495	2.425	.120
	Self-Efficacy: Positive Culture	.048	1	.048	.200	.655
Error	Mentoring Scale	156.322	291	.537		
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	42.473	291	.146		
	Self-Efficacy: Data Use	59.415	291	.204		
	Self-Efficacy: Positive Culture	69.916	291	.240		
Total	Mentoring Scale	4683.321	293			
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	3204.406	293			
	Self-Efficacy: Data Use	3204.757	293			
	Self-Efficacy: Positive Culture	3125.361	293			
Corrected Total	Mentoring Scale	156.656	292			
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	43.222	292			
	Self-Efficacy: Data Use	59.911	292			
	Self-Efficacy: Positive Culture	69.964	292			

a. R Squared = .002 (Adjusted R Squared = -.001)

b. R Squared = .017 (Adjusted R Squared = .014)

c. R Squared = .008 (Adjusted R Squared = .005)

d. R Squared = .001 (Adjusted R Squared = -.003)

General Linear Model

Notes

Output Created	09-JAN-2015 10:54:45
Comments	

Input	Data	C:\Users\Jeremy\Dropbox\MCAA\Julie Helber\Jeremy's Work\Helber Final Data 8-15-14.sav
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Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on all cases with valid data for all variables in the model.
Syntax		GLM Mentoring SE_General SE_DataUse SE_PosCult BY AfAmer /METHOD=SSTYPE(3) /INTERCEPT=INCLUDE /CRITERIA=ALPHA(.05) /DESIGN= AfAmer.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.01

Between-Subjects Factors

		N
AfAmer	.00	271
	1.00	22

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.962	1847.451[b]	4.000	288.000	.000
	Wilks' Lambda	.038	1847.451[b]	4.000	288.000	.000
	Hotelling's Trace	25.659	1847.451[b]	4.000	288.000	.000
	Roy's Largest Root	25.659	1847.451[b]	4.000	288.000	.000
AfAmer	Pillai's Trace	.013	.947[b]	4.000	288.000	.437
	Wilks' Lambda	.987	.947[b]	4.000	288.000	.437
	Hotelling's Trace	.013	.947[b]	4.000	288.000	.437

Roy's Largest Root	.013	.947[b]	4.000	288.000	.437

a. Design: Intercept + AfAmer

b. Exact statistic

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Mentoring Scale	1.259[a]	1	1.259	2.293	.131
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	.003[b]	1	.003	.017	.895
	Self-Efficacy: Data Use	.065[c]	1	.065	.314	.576
	Self-Efficacy: Positive Culture	.064[d]	1	.064	.270	.604
Intercept	Mentoring Scale	1320.225	1	1320.225	2403.542	.000
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	883.305	1	883.305	5906.796	.000
	Self-Efficacy: Data Use	862.646	1	862.646	4163.733	.000
	Self-Efficacy: Positive Culture	838.631	1	838.631	3522.420	.000
AfAmer	Mentoring Scale	1.259	1	1.259	2.293	.131
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	.003	1	.003	.017	.895
	Self-Efficacy: Data Use	.065	1	.065	.314	.576
	Self-Efficacy: Positive Culture	.064	1	.064	.270	.604
Error	Mentoring Scale	159.841	291	.549		
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	43.516	291	.150		
	Self-Efficacy: Data Use	60.290	291	.207		
	Self-Efficacy: Positive Culture	69.282	291	.238		
Total	Mentoring Scale	4667.481	293			

	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	3213.984	293			
	Self-Efficacy: Data Use	3211.757	293			
	Self-Efficacy: Positive Culture	3133.361	293			
Corrected Total	Mentoring Scale	161.101	292			
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	43.519	292			
	Self-Efficacy: Data Use	60.355	292			
	Self-Efficacy: Positive Culture	69.347	292			

a. R Squared = .008 (Adjusted R Squared = .004)

b. R Squared = .000 (Adjusted R Squared = -.003)

c. R Squared = .001 (Adjusted R Squared = -.002)

d. R Squared = .001 (Adjusted R Squared = -.003)

General Linear Mode

Between-Subjects Factors

		Value Label	N
School is rural/suburban/urban	1	Rural	135
	2	Suburban	122
	3	Urban	38

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.986	4954.021[b]	4.000	289.000	.000
	Wilks' Lambda	.014	4954.021[b]	4.000	289.000	.000
	Hotelling's Trace	68.568	4954.021[b]	4.000	289.000	.000
	Roy's Largest Root	68.568	4954.021[b]	4.000	289.000	.000
Rural_Sub_Urban	Pillai's Trace	.081	3.069	8.000	580.000	.002
	Wilks' Lambda	.919	3.115[b]	8.000	578.000	.002
	Hotelling's Trace	.088	3.160	8.000	576.000	.002
	Roy's Largest Root	.084	6.093[c]	4.000	290.000	.000

a. Design: Intercept + Rural_Sub_Urban

b. Exact statistic

c. The statistic is an upper bound on F that yields a lower bound on the significance level.

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Mentoring Scale	7.521[a]	2	3.761	7.118	.001
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	.393[b]	2	.197	1.324	.268
	Self-Efficacy: Data Use	.123[c]	2	.061	.296	.744
	Self-Efficacy: Positive Culture	1.528[d]	2	.764	3.249	.040
Intercept	Mentoring Scale	3361.100	1	3361.100	6361.752	.000
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	2327.996	1	2327.996	15679.468	.000
	Self-Efficacy: Data Use	2302.864	1	2302.864	11135.360	.000
	Self-Efficacy: Positive Culture	2275.253	1	2275.253	9673.568	.000
Rural_Sub_Urban	Mentoring Scale	7.521	2	3.761	7.118	.001
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	.393	2	.197	1.324	.268
	Self-Efficacy: Data Use	.123	2	.061	.296	.744
	Self-Efficacy: Positive Culture	1.528	2	.764	3.249	.040
Error	Mentoring Scale	154.272	292	.528		
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	43.354	292	.148		
	Self-Efficacy: Data Use	60.387	292	.207		
	Self-Efficacy: Positive Culture	68.679	292	.235		
Total	Mentoring Scale	4700.161	295			
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	3232.047	295			

	Self-Efficacy: Data Use	3229.757	295			
	Self-Efficacy: Positive Culture	3147.806	295			
Corrected Total	Mentoring Scale	161.794	294			
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	43.748	294			
	Self-Efficacy: Data Use	60.510	294			
	Self-Efficacy: Positive Culture	70.208	294			

a. R Squared = .046 (Adjusted R Squared = .040)

b. R Squared = .009 (Adjusted R Squared = .002)

c. R Squared = .002 (Adjusted R Squared = -.005)

General Linear Model

Between-Subjects Factors

		Value Label	N
School is elementary/middle school/high school	1	Elementary	134
	2	K-8	9
	3	Middle School	55
	4	High School+Middle School	14
	5	K-12	11
	6	High School	71

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.974	2625.899[b]	4.000	285.000	.000
	Wilks' Lambda	.026	2625.899[b]	4.000	285.000	.000
	Hotelling's Trace	36.855	2625.899[b]	4.000	285.000	.000
	Roy's Largest Root	36.855	2625.899[b]	4.000	285.000	.000
Elem_Middle_HS	Pillai's Trace	.092	1.363	20.000	1152.000	.131
	Wilks' Lambda	.910	1.368	20.000	946.188	.129
	Hotelling's Trace	.097	1.370	20.000	1134.000	.127
	Roy's Largest Root	.059	3.426[c]	5.000	288.000	.005

a. Design: Intercept + Elem_Middle_HS

b. Exact statistic

c. The statistic is an upper bound on F that yields a lower bound on the significance level.

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Mentoring Scale	1.666[a]	5	.333	.601	.699
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	.465[b]	5	.093	.621	.684
	Self-Efficacy: Data Use	2.754[c]	5	.551	2.750	.019
	Self-Efficacy: Positive Culture	1.417[d]	5	.283	1.201	.309
Intercept	Mentoring Scale	1714.515	1	1714.515	3092.131	.000
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	1258.649	1	1258.649	8416.919	.000
	Self-Efficacy: Data Use	1277.246	1	1277.246	6377.511	.000
	Self-Efficacy: Positive Culture	1226.567	1	1226.567	5196.090	.000
Elem_Middle_HS	Mentoring Scale	1.666	5	.333	.601	.699
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	.465	5	.093	.621	.684
	Self-Efficacy: Data Use	2.754	5	.551	2.750	.019
	Self-Efficacy: Positive Culture	1.417	5	.283	1.201	.309
Error	Mentoring Scale	159.689	288	.554		
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	43.067	288	.150		
	Self-Efficacy: Data Use	57.679	288	.200		
	Self-Efficacy: Positive Culture	67.984	288	.236		
Total	Mentoring Scale	4679.154	294			

	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	3224.074	294			
	Self-Efficacy: Data Use	3220.757	294			
	Self-Efficacy: Positive Culture	3142.361	294			
Corrected Total	Mentoring Scale	161.355	293			
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	43.532	293			
	Self-Efficacy: Data Use	60.433	293			
	Self-Efficacy: Positive Culture	69.401	293			

General Linear Model

Between-Subjects Factors

		Value Label	N
What education did the respondent have?	2	Master	184
	3	Educational Specialist	84
	4	Ph.D.	27

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.982	3984.410[b]	4.000	289.000	.000
	Wilks' Lambda	.018	3984.410[b]	4.000	289.000	.000
	Hotelling's Trace	55.148	3984.410[b]	4.000	289.000	.000
	Roy's Largest Root	55.148	3984.410[b]	4.000	289.000	.000
Education	Pillai's Trace	.097	3.691	8.000	580.000	.000
	Wilks' Lambda	.905	3.683[b]	8.000	578.000	.000
	Hotelling's Trace	.102	3.676	8.000	576.000	.000
	Roy's Largest Root	.063	4.585[c]	4.000	290.000	.001

a. Design: Intercept + Education

b. Exact statistic

c. The statistic is an upper bound on F that yields a lower bound on the significance level.

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Mentoring Scale	1.081[a]	2	.540	.982	.376
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	1.849[b]	2	.925	6.444	.002
	Self-Efficacy: Data Use	1.086[c]	2	.543	2.668	.071
	Self-Efficacy: Positive Culture	2.620[d]	2	1.310	5.660	.004
Intercept	Mentoring Scale	2608.474	1	2608.474	4739.354	.000
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	1863.960	1	1863.960	12990.435	.000
	Self-Efficacy: Data Use	1822.015	1	1822.015	8953.073	.000
	Self-Efficacy: Positive Culture	1808.102	1	1808.102	7811.604	.000
Education	Mentoring Scale	1.081	2	.540	.982	.376
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	1.849	2	.925	6.444	.002
	Self-Efficacy: Data Use	1.086	2	.543	2.668	.071
	Self-Efficacy: Positive Culture	2.620	2	1.310	5.660	.004
Error	Mentoring Scale	160.713	292	.550		
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	41.898	292	.143		
	Self-Efficacy: Data Use	59.424	292	.204		
	Self-Efficacy: Positive Culture	67.587	292	.231		
Total	Mentoring Scale	4700.161	295			

	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	3232.047	295			
	Self-Efficacy: Data Use	3229.757	295			
	Self-Efficacy: Positive Culture	3147.806	295			
Corrected Total	Mentoring Scale	161.794	294			
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	43.748	294			
	Self-Efficacy: Data Use	60.510	294			
	Self-Efficacy: Positive Culture	70.208	294			

a. R Squared = .007 (Adjusted R Squared = .000)

b. R Squared = .042 (Adjusted R Squared = .036)

c. R Squared = .018 (Adjusted R Squared = .011)

d. R Squared = .037 (Adjusted R Squared = .031)

General Linear Model

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.902	665.879[b]	4.000	289.000	.000
	Wilks' Lambda	.098	665.879[b]	4.000	289.000	.000
	Hotelling's Trace	9.216	665.879[b]	4.000	289.000	.000
	Roy's Largest Root	9.216	665.879[b]	4.000	289.000	.000
Age	Pillai's Trace	.052	3.997[b]	4.000	289.000	.004
	Wilks' Lambda	.948	3.997[b]	4.000	289.000	.004
	Hotelling's Trace	.055	3.997[b]	4.000	289.000	.004
	Roy's Largest Root	.055	3.997[b]	4.000	289.000	.004

a. Design: Intercept + Age

b. Exact statistic

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Mentoring Scale	.233[a]	1	.233	.422	.516

	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	.883[b]	1	.883	6.019	.015
	Self-Efficacy: Data Use	.031[c]	1	.031	.149	.700
	Self-Efficacy: Positive Culture	1.870[d]	1	1.870	7.997	.005
Intercept	Mentoring Scale	495.389	1	495.389	896.295	.000
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	302.289	1	302.289	2060.849	.000
	Self-Efficacy: Data Use	326.106	1	326.106	1574.495	.000
	Self-Efficacy: Positive Culture	277.869	1	277.869	1188.227	.000
Age	Mentoring Scale	.233	1	.233	.422	.516
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	.883	1	.883	6.019	.015
	Self-Efficacy: Data Use	.031	1	.031	.149	.700
	Self-Efficacy: Positive Culture	1.870	1	1.870	7.997	.005
Error	Mentoring Scale	161.391	292	.553		
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	42.831	292	.147		
	Self-Efficacy: Data Use	60.478	292	.207		
	Self-Efficacy: Positive Culture	68.285	292	.234		
Total	Mentoring Scale	4681.384	294			
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	3220.002	294			
	Self-Efficacy: Data Use	3219.194	294			
	Self-Efficacy: Positive Culture	3138.806	294			
Corrected Total	Mentoring Scale	161.624	293			
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	43.714	293			

	Self-Efficacy: Data Use	60.509	293			
	Self-Efficacy: Positive Culture	70.155	293			

a. R Squared = .001 (Adjusted R Squared = -.002)

b. R Squared = .020 (Adjusted R Squared = .017)

c. R Squared = .001 (Adjusted R Squared = -.003)

d. R Squared = .027 (Adjusted R Squared = .023)

General Linear Model

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.901	654.634[b]	4.000	288.000	.000
	Wilks' Lambda	.099	654.634[b]	4.000	288.000	.000
	Hotelling's Trace	9.092	654.634[b]	4.000	288.000	.000
	Roy's Largest Root	9.092	654.634[b]	4.000	288.000	.000
Tenure	Pillai's Trace	.073	5.711[b]	4.000	288.000	.000
	Wilks' Lambda	.927	5.711[b]	4.000	288.000	.000
	Hotelling's Trace	.079	5.711[b]	4.000	288.000	.000
	Roy's Largest Root	.079	5.711[b]	4.000	288.000	.000

a. Design: Intercept + Tenure

b. Exact statistic

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Mentoring Scale	.008[a]	1	.008	.015	.903
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	1.814[b]	1	1.814	12.678	.000
	Self-Efficacy: Data Use	.402[c]	1	.402	1.951	.164
	Self-Efficacy: Positive Culture	3.705[d]	1	3.705	16.426	.000
Intercept	Mentoring Scale	474.213	1	474.213	879.078	.000

	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	290.396	1	290.396	2029.720	.000
	Self-Efficacy: Data Use	311.752	1	311.752	1513.190	.000
	Self-Efficacy: Positive Culture	261.822	1	261.822	1160.706	.000
Tenure	Mentoring Scale	.008	1	.008	.015	.903
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	1.814	1	1.814	12.678	.000
	Self-Efficacy: Data Use	.402	1	.402	1.951	.164
	Self-Efficacy: Positive Culture	3.705	1	3.705	16.426	.000
Error	Mentoring Scale	156.978	291	.539		
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	41.634	291	.143		
	Self-Efficacy: Data Use	59.953	291	.206		
	Self-Efficacy: Positive Culture	65.641	291	.226		
Total	Mentoring Scale	4675.793	293			
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	3215.074	293			
	Self-Efficacy: Data Use	3211.757	293			
	Self-Efficacy: Positive Culture	3133.361	293			
Corrected Total	Mentoring Scale	156.986	292			
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	43.448	292			
	Self-Efficacy: Data Use	60.355	292			
	Self-Efficacy: Positive Culture	69.347	292			

a. R Squared = .000 (Adjusted R Squared = -.003)

b. R Squared = .042 (Adjusted R Squared = .038)

c. R Squared = .007 (Adjusted R Squared = .003)

d. R Squared = .053 (Adjusted R Squared = .050)

T-Test

Group Statistics

	Female	N	Mean	Std. Deviation
Mentoring Scale	Male Respondents	162	3.9002	.73294
	Female Respondents	131	3.9681	.73293
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	Male Respondents	276	3.2407	.40966
	Female Respondents	227	3.3209	.44858
Self-Efficacy: Data Use	Male Respondents	276	3.2065	.45568
	Female Respondents	227	3.3102	.53542
Self-Efficacy: Positive Culture	Male Respondents	276	3.2240	.51092
	Female Respondents	227	3.2195	.53597

Group Statistics

	Female	Std. Error Mean
Mentoring Scale	Male Respondents	.05758
	Female Respondents	.06404
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	Male Respondents	.02466
	Female Respondents	.02977
Self-Efficacy: Data Use	Male Respondents	.02743
	Female Respondents	.03554
Self-Efficacy: Positive Culture	Male Respondents	.03075
	Female Respondents	.03557

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means
		F	Sig.	t
Mentoring Scale	Equal variances assumed	.008	.927	-.789
	Equal variances not assumed			-.789
Self-Efficacy: Curriculum,	Equal variances assumed	1.820	.178	-2.095

Staff Evaluation, and School Improvement	Equal variances not assumed			-2.076
Self-Efficacy: Data Use	Equal variances assumed	11.543	.001	-2.346
	Equal variances not assumed			-2.310
Self-Efficacy: Positive Culture	Equal variances assumed	3.010	.083	.096
	Equal variances not assumed			.096

Independent Samples Test

		t-test for Equality of Means		
		df	Sig. (2-tailed)	Mean Difference
Mentoring Scale	Equal variances assumed	291	.431	-.06791
	Equal variances not assumed	278.310	.431	-.06791
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	Equal variances assumed	501	.037	-.08026
	Equal variances not assumed	463.252	.038	-.08026
Self-Efficacy: Data Use	Equal variances assumed	501	.019	-.10368
	Equal variances not assumed	445.535	.021	-.10368
Self-Efficacy: Positive Culture	Equal variances assumed	501	.923	.00450
	Equal variances not assumed	472.949	.924	.00450

Independent Samples Test

		t-test for Equality of Means		
		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
Mentoring Scale	Equal variances assumed	.08612	-.23741	.10159
	Equal variances not assumed	.08612	-.23744	.10162
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	Equal variances assumed	.03832	-.15555	-.00498
	Equal variances not assumed	.03866	-.15623	-.00430
Self-Efficacy: Data Use	Equal variances assumed	.04420	-.19052	-.01685
	Equal variances not assumed	.04489	-.19191	-.01546
Self-Efficacy: Positive	Equal variances assumed	.04681	-.08745	.09646

Culture	Equal variances not assumed	.04702	-.08790	.09691

T-Test

Group Statistics

	AfAmer	N	Mean	Std. Deviation	Std. Error Mean
Mentoring Scale	.00	271	3.9031	.74356	.04517
	1.00	22	4.1519	.70924	.15121
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	.00	474	3.2761	.43623	.02004
	1.00	30	3.2847	.51600	.09421
Self-Efficacy: Data Use	.00	474	3.2504	.50234	.02307
	1.00	30	3.2917	.57267	.10455
Self-Efficacy: Positive Culture	.00	474	3.2264	.51834	.02381
	1.00	30	3.1722	.61039	.11144

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means
		F	Sig.	t
Mentoring Scale	Equal variances assumed	.185	.667	-1.514
	Equal variances not assumed			-1.576
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	Equal variances assumed	2.263	.133	-.104
	Equal variances not assumed			-.090
Self-Efficacy: Data Use	Equal variances assumed	2.056	.152	-.433
	Equal variances not assumed			-.386
Self-Efficacy: Positive Culture	Equal variances assumed	.605	.437	.550
	Equal variances not assumed			.476

Independent Samples Test

	t-test for Equality of Means

		df	Sig. (2-tailed)	Mean Difference
Mentoring Scale	Equal variances assumed	291	.131	-.24879
	Equal variances not assumed	24.899	.128	-.24879
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	Equal variances assumed	502	.917	-.00863
	Equal variances not assumed	31.679	.929	-.00863
Self-Efficacy: Data Use	Equal variances assumed	502	.665	-.04132
	Equal variances not assumed	31.889	.702	-.04132
Self-Efficacy: Positive Culture	Equal variances assumed	502	.583	.05422
	Equal variances not assumed	31.704	.637	.05422

Independent Samples Test

		t-test for Equality of Means		
		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
Mentoring Scale	Equal variances assumed	.16430	-.57215	.07458
	Equal variances not assumed	.15781	-.57388	.07630
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	Equal variances assumed	.08307	-.17184	.15457
	Equal variances not assumed	.09632	-.20490	.18764
Self-Efficacy: Data Use	Equal variances assumed	.09539	-.22872	.14609
	Equal variances not assumed	.10707	-.25944	.17681
Self-Efficacy: Positive Culture	Equal variances assumed	.09867	-.13963	.24807
	Equal variances not assumed	.11396	-.17799	.28643

Onewa

ANOVA

		Sum of Squares	df	Mean Square	F
Mentoring Scale	Between Groups	7.521	2	3.761	7.118
	Within Groups	154.272	292	.528	
	Total	161.794	294		
Self-Efficacy: Curriculum, Staff Evaluation, and School	Between Groups	1.123	2	.561	2.923
	Within Groups	97.014	505	.192	

Improvement	Total	98.137	507		
Self-Efficacy: Data Use	Between Groups	.452	2	.226	.886
	Within Groups	128.721	505	.255	
	Total	129.173	507		
Self-Efficacy: Positive Culture	Between Groups	2.545	2	1.273	4.709
	Within Groups	136.464	505	.270	
	Total	139.009	507		

ANOVA

		Sig.
Mentoring Scale	Between Groups	.001
	Within Groups	
	Total	
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	Between Groups	.055
	Within Groups	
	Total	
Self-Efficacy: Data Use	Between Groups	.413
	Within Groups	
	Total	
Self-Efficacy: Positive Culture	Between Groups	.009
	Within Groups	
	Total	

Post Hoc Tests

Multiple Comparisons

Tukey HSD

Dependent Variable	(I) School is rural/suburban/urban	(J) School is rural/suburban/urban	Mean Difference (I-J)
Mentoring Scale	Rural	Suburban	-.32722*
		Urban	-.29649
	Suburban	Rural	.32722*
		Urban	.03073
	Urban	Rural	.29649
		Suburban	-.03073

Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	Rural	Suburban	-.10066*
		Urban	-.02786
	Suburban	Rural	.10066*
		Urban	.07280
	Urban	Rural	.02786
		Suburban	-.07280
Self-Efficacy: Data Use	Rural	Suburban	-.06289
		Urban	-.00924
	Suburban	Rural	.06289
		Urban	.05365
	Urban	Rural	.00924
		Suburban	-.05365
Self-Efficacy: Positive Culture	Rural	Suburban	-.15105*
		Urban	-.09703
	Suburban	Rural	.15105*
		Urban	.05402
	Urban	Rural	.09703
		Suburban	-.05402

Multiple Comparisons

Tukey HSD

Dependent Variable	(I) School is rural/suburban/urban	(J) School is rural/suburban/urban	Std. Error	Sig.
Mentoring Scale	Rural	Suburban	.09080	.001
		Urban	.13348	.069
	Suburban	Rural	.09080	.001
		Urban	.13503	.972
	Urban	Rural	.13348	.069
		Suburban	.13503	.972
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	Rural	Suburban	.04193	.044
		Urban	.06110	.892
	Suburban	Rural	.04193	.044
		Urban	.06273	.477
	Urban	Rural	.06110	.892
		Suburban	.06273	.477
Self-Efficacy: Data Use	Rural	Suburban	.04830	.395
		Urban	.07038	.991

	Suburban	Rural	.04830	.395
		Urban	.07226	.738
	Urban	Rural	.07038	.991
		Suburban	.07226	.738
Self-Efficacy: Positive Culture	Rural	Suburban	.04973	.007
		Urban	.07247	.374
	Suburban	Rural	.04973	.007
		Urban	.07440	.748
	Urban	Rural	.07247	.374
		Suburban	.07440	.748

Multiple Comparisons

Tukey HSD

Dependent Variable	(I) School is rural/suburban/urban	(J) School is rural/suburban/urban	95% Confidence Interval Lower Bound
Mentoring Scale	Rural	Suburban	-.5411
		Urban	-.6109
	Suburban	Rural	.1133
		Urban	-.2874
	Urban	Rural	-.0180
		Suburban	-.3488
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	Rural	Suburban	-.1992
		Urban	-.1715
	Suburban	Rural	.0021
		Urban	-.0747
	Urban	Rural	-.1158
		Suburban	-.2203
Self-Efficacy: Data Use	Rural	Suburban	-.1764
		Urban	-.1747
	Suburban	Rural	-.0506
		Urban	-.1162
	Urban	Rural	-.1562
		Suburban	-.2235
Self-Efficacy: Positive Culture	Rural	Suburban	-.2679
		Urban	-.2674
	Suburban	Rural	.0342

		Urban	-.1209
	Urban	Rural	-.0733
		Suburban	-.2289

Multiple Comparisons

Tukey HSD

Dependent Variable	(I) School is rural/suburban/urban	(J) School is rural/suburban/urban	95% Confidence Interval Upper Bound
Mentoring Scale	Rural	Suburban	-.1133
		Urban	.0180
	Suburban	Rural	.5411
		Urban	.3488
	Urban	Rural	.6109
		Suburban	.2874
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	Rural	Suburban	-.0021
		Urban	.1158
	Suburban	Rural	.1992
		Urban	.2203
	Urban	Rural	.1715
		Suburban	.0747
Self-Efficacy: Data Use	Rural	Suburban	.0506
		Urban	.1562
	Suburban	Rural	.1764
		Urban	.2235
	Urban	Rural	.1747
		Suburban	.1162
Self-Efficacy: Positive Culture	Rural	Suburban	-.0342
		Urban	.0733
	Suburban	Rural	.2679
		Urban	.2289
	Urban	Rural	.2674
		Suburban	.1209

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

Mentoring Scale

Tukey HSD[a,b]

School is rural/suburban/urban	N	Subset for alpha = 0.05	
		1	2
Rural	135	3.7488	
Urban	38		4.0453
Suburban	122		4.0760
Sig.		1.000	.965

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 71.565.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement

Tukey HSD[a,b]

School is rural/suburban/urban	N	Subset for alpha = 0.05
		1
Rural	247	3.2319
Urban	65	3.2597
Suburban	196	3.3325
Sig.		.172

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 122.273.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Self-Efficacy: Data Use

Tukey HSD[a,b]

School is rural/suburban/urban	N	Subset for alpha = 0.05
		1
Rural	247	3.2254
Urban	65	3.2346
Suburban	196	3.2883
Sig.		.594

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 122.273.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Self-Efficacy: Positive Culture

Tukey HSD[a,b]

School is rural/suburban/urban	N	Subset for alpha = 0.05
		1
Rural	247	3.1491
Urban	65	3.2462
Suburban	196	3.3002
Sig.		.061

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 122.273.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Oneway

ANOVA

		Sum of Squares	df	Mean Square	F
Mentoring Scale	Between Groups	1.666	5	.333	.601
	Within Groups	159.689	288	.554	
	Total	161.355	293		
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	Between Groups	1.110	5	.222	1.149
	Within Groups	96.584	500	.193	
	Total	97.694	505		
Self-Efficacy: Data Use	Between Groups	3.284	5	.657	2.610
	Within Groups	125.826	500	.252	
	Total	129.110	505		

Self-Efficacy: Positive Culture	Between Groups	3.204	5	.641	2.384
	Within Groups	134.411	500	.269	
	Total	137.615	505		

ANOVA

		Sig.
Mentoring Scale	Between Groups	.699
	Within Groups	
	Total	
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	Between Groups	.333
	Within Groups	
	Total	
Self-Efficacy: Data Use	Between Groups	.024
	Within Groups	
	Total	
Self-Efficacy: Positive Culture	Between Groups	.037
	Within Groups	
	Total	

Post Hoc Tests

Multiple Comparisons

Tukey HSD

Dependent Variable	(I) School is elementary/middle school/high school	(J) School is elementary/middle school/high school	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Mentoring Scale	Elementary	K-8	.15637	.25641	.990	-.5793	.8920
		Middle School	.06618	.11924	.994	-.2759	.4083
		High School+Middle School	.16401	.20915	.970	-.4360	.7641
		K-12	.23381	.23355	.917	-.4362	.9039

		High School	.15581	.10930	.711	-.1578	.4694
	K-8	Elementary	-.15637	.25641	.990	-.8920	.5793
		Middle School	-.09019	.26775	.999	-.8584	.6780
		High School+Middle School	.00764	.31814	1.000	-.9051	.9204
		K-12	.07744	.33469	1.000	-.8828	1.0377
		High School	-.00056	.26347	1.000	-.7565	.7554
	Middle School	Elementary	-.06618	.11924	.994	-.4083	.2759
		K-8	.09019	.26775	.999	-.6780	.8584
		High School+Middle School	.09783	.22291	.998	-.5417	.7373
		K-12	.16763	.24594	.984	-.5380	.8732
		High School	.08963	.13376	.985	-.2941	.4734
	High School+Middle School	Elementary	-.16401	.20915	.970	-.7641	.4360
		K-8	-.00764	.31814	1.000	-.9204	.9051
		Middle School	-.09783	.22291	.998	-.7373	.5417
		K-12	.06981	.30002	1.000	-.7910	.9306
		High School	-.00819	.21775	1.000	-.6329	.6165
	K-12	Elementary	-.23381	.23355	.917	-.9039	.4362
		K-8	-.07744	.33469	1.000	-1.0377	.8828
		Middle School	-.16763	.24594	.984	-.8732	.5380
		High School+Middle School	-.06981	.30002	1.000	-.9306	.7910
		High School	-.07800	.24128	1.000	-.7702	.6142
	High School	Elementary	-.15581	.10930	.711	-.4694	.1578
		K-8	.00056	.26347	1.000	-.7554	.7565
		Middle School	-.08963	.13376	.985	-.4734	.2941
		High School+Middle School	.00819	.21775	1.000	-.6165	.6329
		K-12	.07800	.24128	1.000	-.6142	.7702
Self-Efficacy: Curriculum, Staff	Elementary	K-8	-.02936	.11712	1.000	-.3644	.3057
		Middle School	.01254	.05532	1.000	-.1457	.1708

Evaluation, and School Improvement		High School+Middle School	.19060	.08941	.273	-.0652	.4464
		K-12	-.02772	.09612	1.000	-.3027	.2473
		High School	-.02709	.04897	.994	-.1672	.1130
	K-8	Elementary	.02936	.11712	1.000	-.3057	.3644
		Middle School	.04189	.12287	.999	-.3096	.3934
		High School+Middle School	.21996	.14154	.629	-.1849	.6249
		K-12	.00164	.14586	1.000	-.4156	.4189
		High School	.00227	.12015	1.000	-.3415	.3460
	Middle School	Elementary	-.01254	.05532	1.000	-.1708	.1457
		K-8	-.04189	.12287	.999	-.3934	.3096
		High School+Middle School	.17807	.09682	.442	-.0989	.4551
		K-12	-.04025	.10305	.999	-.3351	.2545
		High School	-.03963	.06147	.988	-.2155	.1362
	High School+Middle School	Elementary	-.19060	.08941	.273	-.4464	.0652
		K-8	-.21996	.14154	.629	-.6249	.1849
		Middle School	-.17807	.09682	.442	-.4551	.0989
		K-12	-.21832	.12471	.499	-.5751	.1385
		High School	-.21769	.09334	.183	-.4847	.0493
	K-12	Elementary	.02772	.09612	1.000	-.2473	.3027
		K-8	-.00164	.14586	1.000	-.4189	.4156
		Middle School	.04025	.10305	.999	-.2545	.3351
		High School+Middle School	.21832	.12471	.499	-.1385	.5751
		High School	.00063	.09978	1.000	-.2848	.2861
	High School	Elementary	.02709	.04897	.994	-.1130	.1672
		K-8	-.00227	.12015	1.000	-.3460	.3415
		Middle School	.03963	.06147	.988	-.1362	.2155
		High School+Middle School	.21769	.09334	.183	-.0493	.4847
		K-12	-.00063	.09978	1.000	-.2861	.2848

Self-Efficacy: Data Use	Elementary	K-8	-.29312	.13368	.243	-.6756	.0893
		Middle School	.06608	.06314	.902	-.1146	.2467
		High School+Middle School	.19762	.10205	.381	-.0943	.4896
		K-12	.00761	.10971	1.000	-.3062	.3215
		High School	.10339	.05589	.435	-.0565	.2633
	K-8	Elementary	.29312	.13368	.243	-.0893	.6756
		Middle School	.35920	.14025	.109	-.0420	.7604
		High School+Middle School	.49074*	.16155	.030	.0286	.9529
		K-12	.30072	.16649	.463	-.1756	.7770
		High School	.39651*	.13714	.046	.0042	.7888
	Middle School	Elementary	-.06608	.06314	.902	-.2467	.1146
		K-8	-.35920	.14025	.109	-.7604	.0420
		High School+Middle School	.13155	.11051	.841	-.1846	.4477
		K-12	-.05847	.11762	.996	-.3950	.2780
		High School	.03731	.07016	.995	-.1634	.2380
	High School+Middle School	Elementary	-.19762	.10205	.381	-.4896	.0943
		K-8	-.49074*	.16155	.030	-.9529	-.0286
		Middle School	-.13155	.11051	.841	-.4477	.1846
		K-12	-.19002	.14234	.765	-.5972	.2172
		High School	-.09424	.10654	.950	-.3990	.2105
	K-12	Elementary	-.00761	.10971	1.000	-.3215	.3062
		K-8	-.30072	.16649	.463	-.7770	.1756
		Middle School	.05847	.11762	.996	-.2780	.3950
		High School+Middle School	.19002	.14234	.765	-.2172	.5972
		High School	.09578	.11389	.960	-.2300	.4216
	High School	Elementary	-.10339	.05589	.435	-.2633	.0565
		K-8	-.39651*	.13714	.046	-.7888	-.0042
		Middle School	-.03731	.07016	.995	-.2380	.1634

		High School+Middle School	.09424	.10654	.950	-.2105	.3990
		K-12	-.09578	.11389	.960	-.4216	.2300
Self-Efficacy: Positive Culture	Elementary	K-8	-.26546	.13817	.390	-.6607	.1298
		Middle School	-.03941	.06526	.991	-.2261	.1473
		High School+Middle School	.16047	.10548	.651	-.1413	.4622
		K-12	-.08188	.11339	.979	-.4063	.2425
		High School	-.12747	.05776	.236	-.2927	.0378
	K-8	Elementary	.26546	.13817	.390	-.1298	.6607
		Middle School	.22605	.14495	.626	-.1886	.6407
		High School+Middle School	.42593	.16697	.112	-.0517	.9036
		K-12	.18357	.17207	.894	-.3087	.6758
		High School	.13799	.14174	.926	-.2675	.5435
	Middle School	Elementary	.03941	.06526	.991	-.1473	.2261
		K-8	-.22605	.14495	.626	-.6407	.1886
		High School+Middle School	.19987	.11422	.499	-.1269	.5266
		K-12	-.04248	.12156	.999	-.3902	.3053
		High School	-.08806	.07251	.830	-.2955	.1194
	High School+Middle School	Elementary	-.16047	.10548	.651	-.4622	.1413
		K-8	-.42593	.16697	.112	-.9036	.0517
		Middle School	-.19987	.11422	.499	-.5266	.1269
		K-12	-.24235	.14712	.567	-.6632	.1785
		High School	-.28793	.11011	.096	-.6029	.0271
	K-12	Elementary	.08188	.11339	.979	-.2425	.4063
		K-8	-.18357	.17207	.894	-.6758	.3087
		Middle School	.04248	.12156	.999	-.3053	.3902
		High School+Middle School	.24235	.14712	.567	-.1785	.6632

		High School	-.04558	.11771	.999	-.3823	.2912
	High School	Elementary	.12747	.05776	.236	-.0378	.2927
		K-8	-.13799	.14174	.926	-.5435	.2675
		Middle School	.08806	.07251	.830	-.1194	.2955
		High School+Middle School	.28793	.11011	.096	-.0271	.6029
		K-12	.04558	.11771	.999	-.2912	.3823

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

Mentoring Scale

Tukey HSD[a,b]

School is elementary/middle school/high school	N	Subset for alpha = 0.05
		1
K-12	11	3.7576
High School+Middle School	14	3.8274
K-8	9	3.8350
High School	71	3.8356
Middle School	55	3.9252
Elementary	134	3.9914
Sig.		.927

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 19.158.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement

Tukey HSD[a,b]

School is elementary/middle school/high school	N	Subset for alpha = 0.05
		1
High School+Middle School	27	3.0871
Middle School	87	3.2652

Elementary	230	3.2777
High School	124	3.3048
K-12	23	3.3055
K-8	15	3.3071
Sig.		.291

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 35.070.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Self-Efficacy: Data Use

Tukey HSD[a,b]

School is elementary/middle school/high school	N	Subset for alpha = 0.05	
		1	2
High School+Middle School	27	3.0926	
High School	124	3.1868	
Middle School	87	3.2241	
K-12	23	3.2826	3.2826
Elementary	230	3.2902	3.2902
K-8	15		3.5833
Sig.		.566	.123

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 35.070.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Self-Efficacy: Positive Culture

Tukey HSD[a,b]

School is elementary/middle school/high school	N	Subset for alpha = 0.05	
		1	2
High School+Middle School	27	3.0185	
Elementary	230	3.1790	3.1790
Middle School	87	3.2184	3.2184
K-12	23	3.2609	3.2609
High School	124	3.3065	3.3065
K-8	15		3.4444

Sig.		.186	.266

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 35.070.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Oneway

ANOVA

		Sum of Squares	df	Mean Square	F
Mentoring Scale	Between Groups	1.081	2	.540	.982
	Within Groups	160.713	292	.550	
	Total	161.794	294		
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	Between Groups	3.696	2	1.848	9.882
	Within Groups	94.441	505	.187	
	Total	98.137	507		
Self-Efficacy: Data Use	Between Groups	3.960	2	1.980	7.985
	Within Groups	125.213	505	.248	
	Total	129.173	507		
Self-Efficacy: Positive Culture	Between Groups	2.926	2	1.463	5.429
	Within Groups	136.084	505	.269	
	Total	139.009	507		

ANOVA

		Sig.
Mentoring Scale	Between Groups	.376
	Within Groups	
	Total	
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	Between Groups	.000
	Within Groups	
	Total	
Self-Efficacy: Data Use	Between Groups	.000
	Within Groups	
	Total	
Self-Efficacy: Positive Culture	Between Groups	.005
	Within Groups	
	Total	

Post Hoc Tests

Multiple Comparisons

Tukey HSD

Dependent Variable	(I) What education did the respondent have?	(J) What education did the respondent have?	Mean Difference (I-J)
Mentoring Scale	Master	Educational Specialist	-.09812
		Ph.D.	-.17715
	Educational Specialist	Master	.09812
		Ph.D.	-.07902
	Ph.D.	Master	.17715
		Educational Specialist	.07902
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	Master	Educational Specialist	-.08102
		Ph.D.	-.30864*
	Educational Specialist	Master	.08102
		Ph.D.	-.22762*
	Ph.D.	Master	.30864*
		Educational Specialist	.22762*
Self-Efficacy: Data Use	Master	Educational Specialist	-.00178
		Ph.D.	-.32463*
	Educational Specialist	Master	.00178
		Ph.D.	-.32285*
	Ph.D.	Master	.32463*
		Educational Specialist	.32285*
Self-Efficacy: Positive Culture	Master	Educational Specialist	-.00892
		Ph.D.	-.28083*
	Educational Specialist	Master	.00892
		Ph.D.	-.27191*
	Ph.D.	Master	.28083*
		Educational Specialist	.27191*

Multiple Comparisons

Tukey HSD

Dependent Variable	(I) What education did the respondent have?	(J) What education did the respondent have?	Std. Error	Sig.
Mentoring Scale	Master	Educational Specialist	.09769	.575
		Ph.D.	.15289	.479
	Educational Specialist	Master	.09769	.575
		Ph.D.	.16412	.880
	Ph.D.	Master	.15289	.479

		Educational Specialist	.16412	.880
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	Master	Educational Specialist	.04414	.159
		Ph.D.	.07159	.000
	Educational Specialist	Master	.04414	.159
		Ph.D.	.07711	.009
	Ph.D.	Master	.07159	.000
		Educational Specialist	.07711	.009
Self-Efficacy: Data Use	Master	Educational Specialist	.05083	.999
		Ph.D.	.08243	.000
	Educational Specialist	Master	.05083	.999
		Ph.D.	.08879	.001
	Ph.D.	Master	.08243	.000
		Educational Specialist	.08879	.001
Self-Efficacy: Positive Culture	Master	Educational Specialist	.05299	.984
		Ph.D.	.08593	.003
	Educational Specialist	Master	.05299	.984
		Ph.D.	.09257	.010
	Ph.D.	Master	.08593	.003
		Educational Specialist	.09257	.010

Multiple Comparisons

Tukey HSD

Dependent Variable	(I) What education did the respondent have?	(J) What education did the respondent have?	95% Confidence Interval Lower Bound
Mentoring Scale	Master	Educational Specialist	-.3283
		Ph.D.	-.5373
	Educational Specialist	Master	-.1320
		Ph.D.	-.4657
	Ph.D.	Master	-.1830
		Educational Specialist	-.3076
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	Master	Educational Specialist	-.1848
		Ph.D.	-.4769
	Educational Specialist	Master	-.0227
		Ph.D.	-.4089
	Ph.D.	Master	.1404
		Educational Specialist	.0463

Self-Efficacy: Data Use	Master	Educational Specialist	-.1213
		Ph.D.	-.5184
	Educational Specialist	Master	-.1177
		Ph.D.	-.5316
	Ph.D.	Master	.1309
		Educational Specialist	.1141
Self-Efficacy: Positive Culture	Master	Educational Specialist	-.1335
		Ph.D.	-.4828
	Educational Specialist	Master	-.1156
		Ph.D.	-.4895
	Ph.D.	Master	.0788
		Educational Specialist	.0543

Multiple Comparisons

Tukey HSD

Dependent Variable	(I) What education did the respondent have?	(J) What education did the respondent have?	95% Confidence Interval Upper Bound
Mentoring Scale	Master	Educational Specialist	.1320
		Ph.D.	.1830
	Educational Specialist	Master	.3283
		Ph.D.	.3076
	Ph.D.	Master	.5373
		Educational Specialist	.4657
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	Master	Educational Specialist	.0227
		Ph.D.	-.1404
	Educational Specialist	Master	.1848
		Ph.D.	-.0463
	Ph.D.	Master	.4769
		Educational Specialist	.4089
Self-Efficacy: Data Use	Master	Educational Specialist	.1177
		Ph.D.	-.1309
	Educational Specialist	Master	.1213
		Ph.D.	-.1141
	Ph.D.	Master	.5184
		Educational Specialist	.5316
Self-Efficacy: Positive Culture	Master	Educational Specialist	.1156

	Ph.D.	-.0788
Educational Specialist	Master	.1335
	Ph.D.	-.0543
Ph.D.	Master	.4828
	Educational Specialist	.4895

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

Mentoring Scale

Tukey HSD[a,b]

What education did the respondent have?	N	Subset for alpha = 0.05
		1
Master	184	3.8781
Educational Specialist	84	3.9763
Ph.D.	27	4.0553
Sig.		.422

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 55.171.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement

Tukey HSD[a,b]

What education did the respondent have?	N	Subset for alpha = 0.05	
		1	2
Master	332	3.2278	
Educational Specialist	135	3.3089	
Ph.D.	41		3.5365
Sig.		.436	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 86.183.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Self-Efficacy: Data Use

Tukey HSD[a,b]

What education did the respondent have?	N	Subset for alpha = 0.05	
		1	2
Master	332	3.2241	
Educational Specialist	135	3.2259	
Ph.D.	41		3.5488
Sig.		1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 86.183.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Self-Efficacy: Positive Culture

Tukey HSD[a,b]

What education did the respondent have?	N	Subset for alpha = 0.05	
		1	2
Master	332	3.1948	
Educational Specialist	135	3.2037	
Ph.D.	41		3.4756
Sig.		.993	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 86.183.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Nonparametric Correlations

Correlations

			Mentoring Scale	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement
Kendall's tau_b	Mentoring Scale	Correlation Coefficient	1.000	.154**
		Sig. (2-tailed)	.	.000
		N	295	295
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	Correlation Coefficient	.154**	1.000
		Sig. (2-tailed)	.000	.
		N	295	508
	Self-Efficacy: Data Use	Correlation Coefficient	.068	.560**
		Sig. (2-tailed)	.119	.000
		N	295	508
	Self-Efficacy: Positive Culture	Correlation Coefficient	.159**	.549**
		Sig. (2-tailed)	.000	.000
		N	295	508
	Age (categorized)	Correlation Coefficient	-.057	.119**
		Sig. (2-tailed)	.203	.001
		N	294	505
	Tenure - how long has the respondent been a principal?	Correlation Coefficient	-.015	.144**
		Sig. (2-tailed)	.736	.000
		N	293	505

Correlations

			Self-Efficacy: Data Use	Self-Efficacy: Positive Culture
Kendall's tau_b	Mentoring Scale	Correlation Coefficient	.068	.159**
		Sig. (2-tailed)	.119	.000
		N	295	295
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	Correlation Coefficient	.560**	.549**
		Sig. (2-tailed)	.000	.000
		N	508	508
	Self-Efficacy: Data Use	Correlation Coefficient	1.000	.437**
		Sig. (2-tailed)	.	.000
		N	508	508

	Self-Efficacy: Positive Culture	Correlation Coefficient	.437**	1.000
		Sig. (2-tailed)	.000	.
		N	508	508
	Age (categorized)	Correlation Coefficient	.035	.105**
		Sig. (2-tailed)	.345	.004
		N	505	505
	Tenure - how long has the respondent been a principal?	Correlation Coefficient	.035	.157**
		Sig. (2-tailed)	.335	.000
		N	505	505

Correlations

			Age (categorized)	Tenure - how long has the respondent been a principal?
Kendall's tau_b	Mentoring Scale	Correlation Coefficient	-.057	-.015
		Sig. (2-tailed)	.203	.736
		N	294	293
	Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement	Correlation Coefficient	.119**	.144**
		Sig. (2-tailed)	.001	.000
		N	505	505
	Self-Efficacy: Data Use	Correlation Coefficient	.035	.035
		Sig. (2-tailed)	.345	.335
		N	505	505
	Self-Efficacy: Positive Culture	Correlation Coefficient	.105**	.157**
		Sig. (2-tailed)	.004	.000
		N	505	505
	Age (categorized)	Correlation Coefficient	1.000	.423**
		Sig. (2-tailed)	.	.000
		N	505	502
	Tenure - how long has the respondent been a principal?	Correlation Coefficient	.423**	1.000
		Sig. (2-tailed)	.000	.
		N	502	505

**. Correlation is significant at the 0.01 level (2-tailed).

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Tenure - how long has the respondent been a principal?, AfAmer, HS, Middle, What education did the respondent have?, Female, Suburban, Age (categorized), Urban[b]	.	Enter

a. Dependent Variable: Mentoring Scale

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.230[a]	.053	.022	.71857

a. Predictors: (Constant), Tenure - how long has the respondent been a principal?, AfAmer, HS, Middle, What education did the respondent have?, Female, Suburban, Age (categorized), Urban

b. Dependent Variable: Mentoring Scale

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.980	9	.887	1.717	.085[b]
	Residual	143.026	277	.516		
	Total	151.006	286			

a. Dependent Variable: Mentoring Scale

b. Predictors: (Constant), Tenure - how long has the respondent been a principal?, AfAmer, HS, Middle, What education did the respondent have?, Female, Suburban, Age (categorized), Urban

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.772	.220		17.164	.000
	Female	.084	.091	.058	.928	.354
	Age (categorized)	-.044	.055	-.055	-.803	.423
	Urban	.205	.158	.096	1.300	.195
	Suburban	.286	.098	.194	2.914	.004
	Middle	-.040	.093	-.025	-.428	.669
	HS	-.045	.097	-.029	-.468	.640
	What education did the respondent have?	.024	.067	.022	.366	.714
	AfAmer	.130	.192	.048	.676	.499
	Tenure - how long has the respondent been a principal?	.015	.041	.025	.363	.717

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Female	.886	1.128
	Age (categorized)	.728	1.374
	Urban	.628	1.591
	Suburban	.771	1.298
	Middle	.983	1.018
	HS	.881	1.135
	What education did the respondent have?	.937	1.067
	AfAmer	.689	1.452
	Tenure - how long has the respondent been a principal?	.746	1.341

a. Dependent Variable: Mentoring Scale

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	Female	Age (categorized)	Urban
1	1	5.687	1.000	.00	.01	.00	.00
	2	1.422	1.999	.00	.00	.00	.17
	3	.828	2.621	.00	.06	.00	.00
	4	.703	2.844	.00	.02	.00	.01
	5	.543	3.235	.00	.51	.00	.01
	6	.383	3.852	.00	.13	.00	.56
	7	.262	4.657	.01	.17	.03	.24
	8	.093	7.839	.04	.00	.19	.01
	9	.052	10.422	.00	.08	.69	.00
	10	.027	14.648	.95	.01	.09	.00

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions					
		Suburban	Middle	HS	What education did the respondent have?	AfAmer	Tenure - how long has the respondent been a principal?
1	1	.01	.01	.01	.00	.00	.00
	2	.03	.00	.00	.00	.19	.00
	3	.09	.00	.47	.00	.06	.00
	4	.02	.84	.04	.00	.01	.00
	5	.23	.00	.01	.00	.15	.00
	6	.01	.09	.14	.00	.52	.00
	7	.57	.04	.32	.01	.07	.03
	8	.04	.01	.01	.33	.00	.15
	9	.00	.00	.00	.00	.00	.78
	10	.00	.01	.01	.65	.00	.03

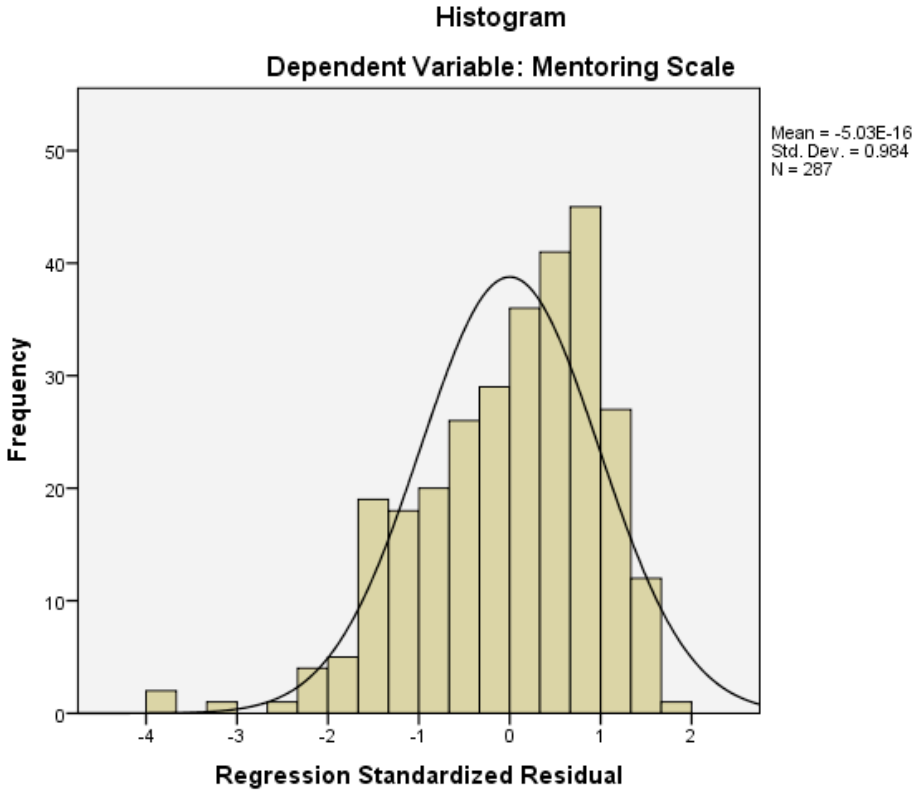
a. Dependent Variable: Mentoring Scale

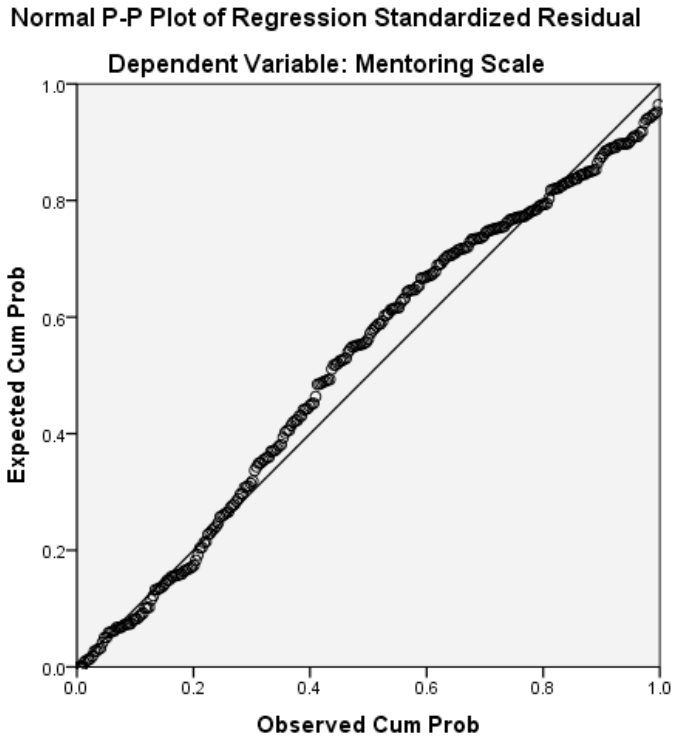
Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.6234	4.2868	3.9349	.16704	287
Std. Predicted Value	-1.865	2.106	.000	1.000	287
Standard Error of Predicted Value	.092	.231	.131	.030	287
Adjusted Predicted Value	3.6283	4.4351	3.9351	.17009	287
Residual	-2.74756	1.29287	.00000	.70717	287
Std. Residual	-3.824	1.799	.000	.984	287
Stud. Residual	-3.886	1.825	.000	1.002	287
Deleted Residual	-2.83717	1.32954	-.00019	.73388	287
Stud. Deleted Residual	-3.989	1.832	-.002	1.007	287
Mahal. Distance	3.641	28.669	8.969	4.863	287
Cook's Distance	.000	.066	.004	.007	287
Centered Leverage Value	.013	.100	.031	.017	287

a. Dependent Variable: Mentoring Scale

Charts




Normal P-P Plot of Regression Standardized Residual
Dependent Variable: Mentoring Scale
Expected Cum Prob
Observed Cum Prob
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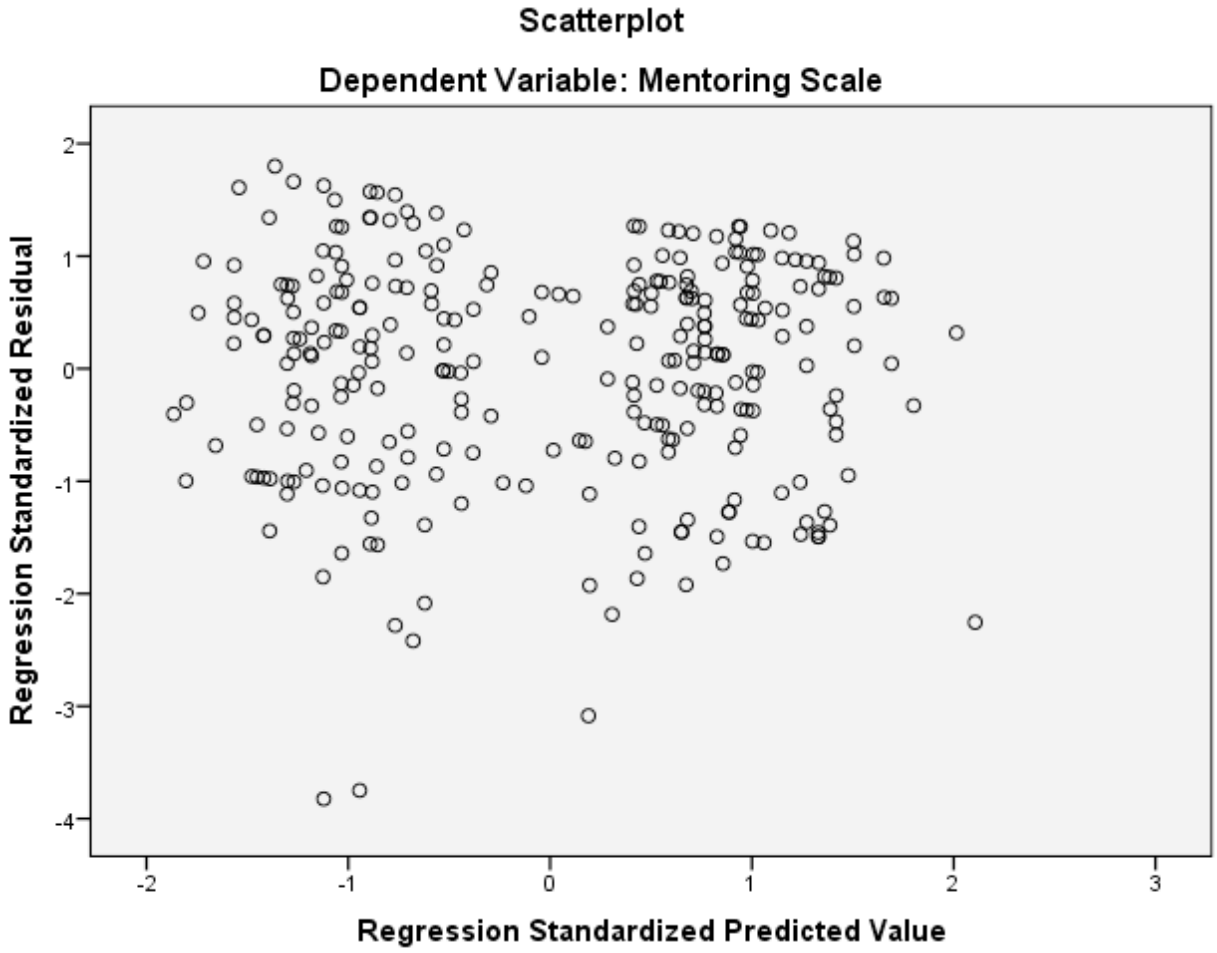
0.2
0.4
0.6
0.8
1.0



Regression

Notes

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Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.

	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT SE_General /METHOD=ENTER Mentoring Female Age Urban Suburban Middle HS Education AfAmer Tenure /SCATTERPLOT=(*ZRESID ,*ZPRED) /PARTIALPLOT ALL /RESIDUALS HISTOGRAM(ZRESID) NORMPROB(ZRESID) /SAVE SRESID SDRESID.
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	SDR_6	Studentized Deleted Residual

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method

1	Tenure - how long has the respondent been a principal?, AfAmer, HS, Middle, What education did the respondent have?, Mentoring Scale, Female, Suburban, Age (categorized), Urban[b]	.	Enter

a. Dependent Variable: Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.364[a]	.133	.101	.36600

a. Predictors: (Constant), Tenure - how long has the respondent been a principal?, AfAmer, HS, Middle, What education did the respondent have?, Mentoring Scale, Female, Suburban, Age (categorized), Urban

b. Dependent Variable: Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.651	10	.565	4.218	.000[b]
	Residual	36.972	276	.134		
	Total	42.623	286			

a. Dependent Variable: Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement

b. Predictors: (Constant), Tenure - how long has the respondent been a principal?, AfAmer, HS, Middle, What education did the respondent have?, Mentoring Scale, Female, Suburban, Age (categorized), Urban

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.353	.161		14.633	.000
	Mentoring Scale	.102	.031	.193	3.347	.001
	Female	.097	.046	.125	2.088	.038
	Age (categorized)	.013	.028	.031	.475	.635
	Urban	.034	.081	.030	.419	.675
	Suburban	-.009	.051	-.012	-.186	.853
	Middle	.011	.047	.013	.239	.812
	HS	-.006	.049	-.007	-.124	.901
	What education did the respondent have?	.104	.034	.178	3.066	.002
	AfAmer	-.069	.098	-.048	-.709	.479
	Tenure - how long has the respondent been a principal?	.057	.021	.177	2.729	.007

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Mentoring Scale	.947	1.056
	Female	.884	1.132
	Age (categorized)	.726	1.377
	Urban	.625	1.601
	Suburban	.748	1.337
	Middle	.982	1.018
	HS	.880	1.136
	What education did the respondent have?	.937	1.067
	AfAmer	.687	1.455

	Tenure - how long has the respondent been a principal?	.745	1.342

a. Dependent Variable: Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Mentoring Scale	Female
1	1	6.625	1.000	.00	.00	.01
	2	1.426	2.155	.00	.00	.00
	3	.828	2.829	.00	.00	.06
	4	.705	3.066	.00	.00	.02
	5	.543	3.492	.00	.00	.52
	6	.388	4.133	.00	.00	.14
	7	.269	4.961	.00	.00	.16
	8	.104	7.985	.01	.04	.00
	9	.053	11.233	.00	.01	.08
	10	.048	11.806	.02	.25	.00
	11	.013	22.862	.96	.70	.00

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions					
		Age (categorized)	Urban	Suburban	Middle	HS	What education did the respondent have?
1	1	.00	.00	.00	.01	.00	.00
	2	.00	.17	.03	.00	.00	.00
	3	.00	.00	.08	.00	.47	.00
	4	.00	.01	.02	.85	.04	.00
	5	.00	.01	.22	.00	.01	.00
	6	.00	.51	.00	.09	.16	.00
	7	.02	.28	.58	.03	.31	.01
	8	.21	.01	.03	.00	.01	.15
	9	.66	.00	.00	.00	.00	.01
	10	.06	.00	.00	.00	.00	.69

11	.05	.00	.02	.01	.01	.14

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions	
		AfAmer	Tenure - how long has the respondent been a principal?
1	1	.00	.00
	2	.19	.00
	3	.06	.00
	4	.01	.00
	5	.15	.00
	6	.50	.00
	7	.09	.02
	8	.00	.19
	9	.00	.77
	10	.00	.01
	11	.00	.01

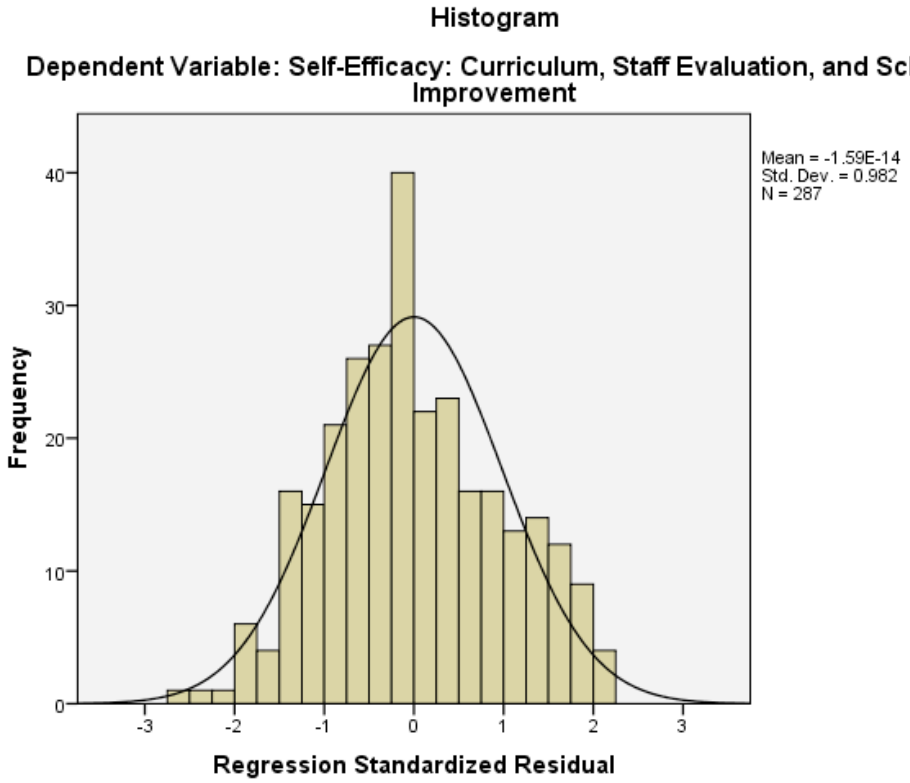
a. Dependent Variable: Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.7478	3.6155	3.2865	.14056	287
Std. Predicted Value	-3.833	2.340	.000	1.000	287
Standard Error of Predicted Value	.050	.122	.070	.015	287
Adjusted Predicted Value	2.7462	3.6343	3.2859	.14135	287
Residual	-.97821	.78931	.00000	.35955	287
Std. Residual	-2.673	2.157	.000	.982	287
Stud. Residual	-2.706	2.225	.001	1.003	287
Deleted Residual	-1.00301	.84993	.00063	.37459	287
Stud. Deleted Residual	-2.738	2.241	.001	1.005	287
Mahal. Distance	4.284	30.592	9.965	5.185	287
Cook's Distance	.000	.041	.004	.006	287
Centered Leverage Value	.015	.107	.035	.018	287

a. Dependent Variable: Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement

Charts


Histogram
Dependent Variable: Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement
Mean = -1.59E-14
Std. Dev. = 0.982
N = 287
Frequency
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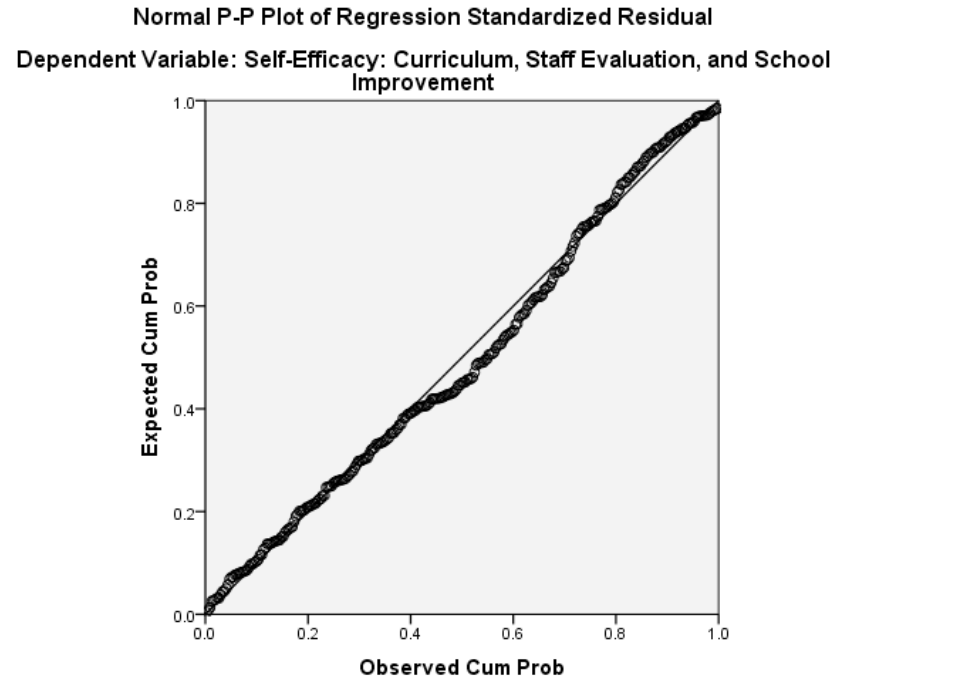
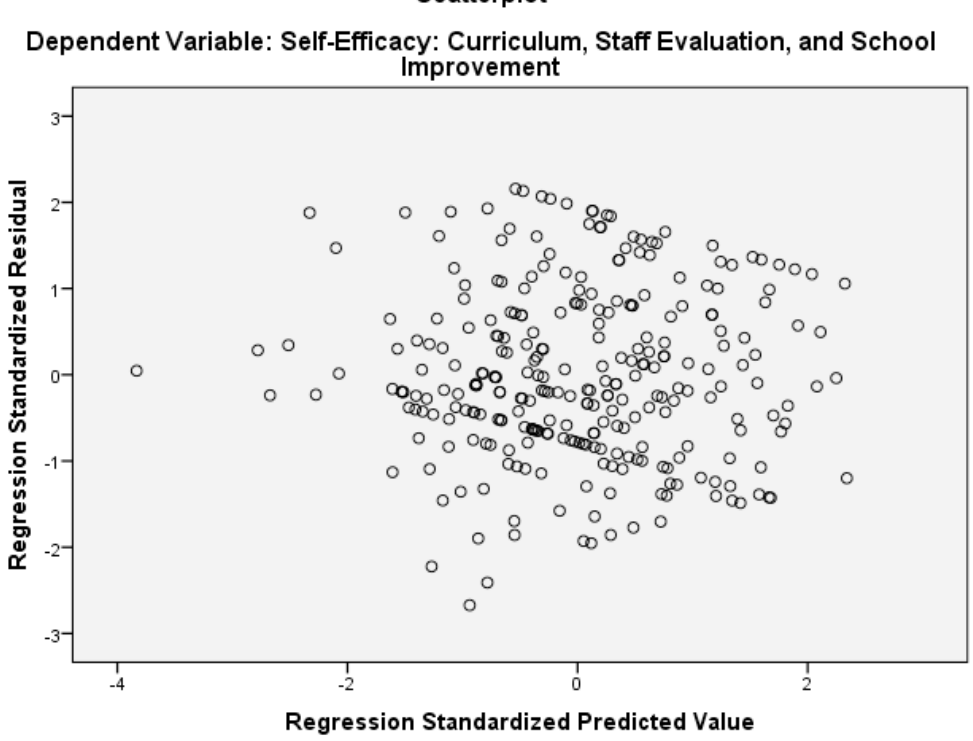
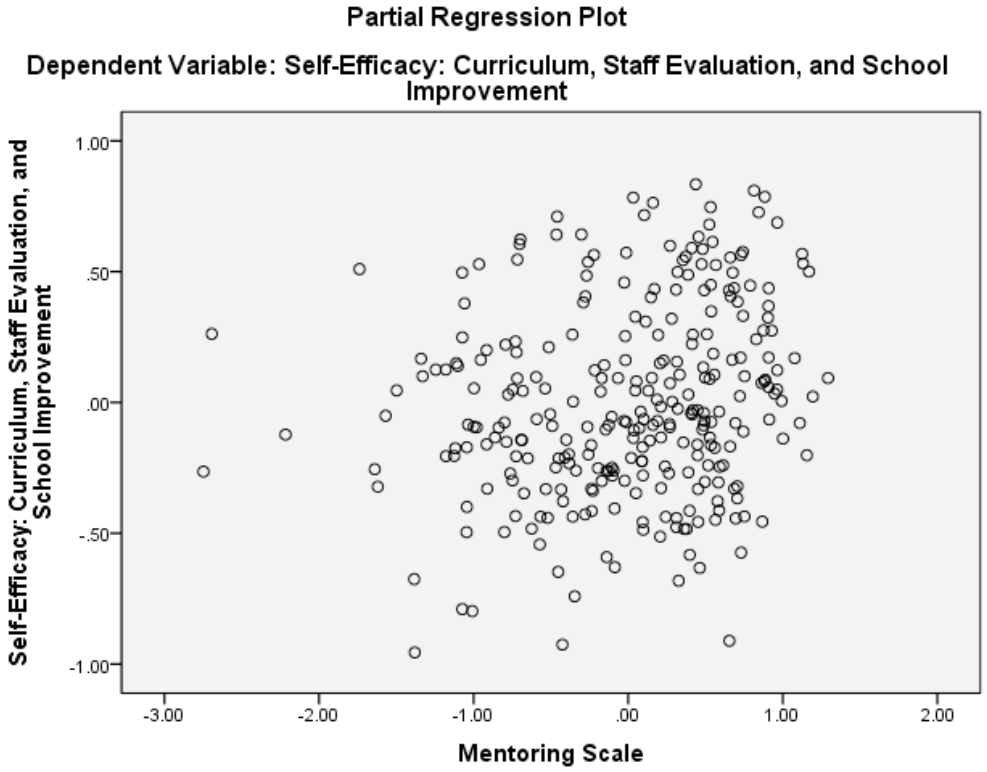
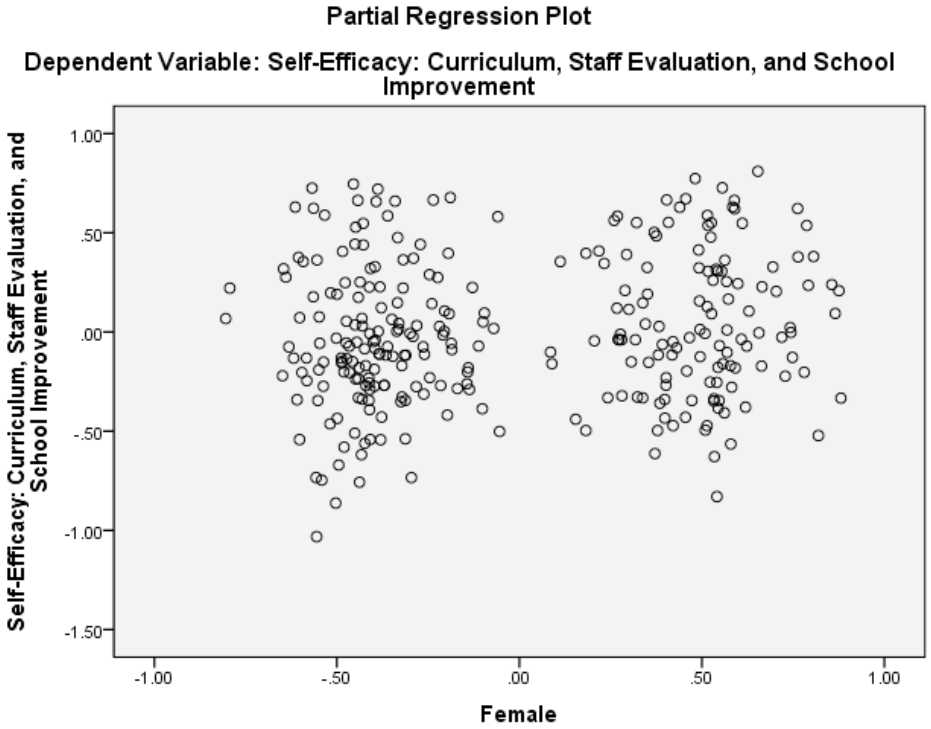
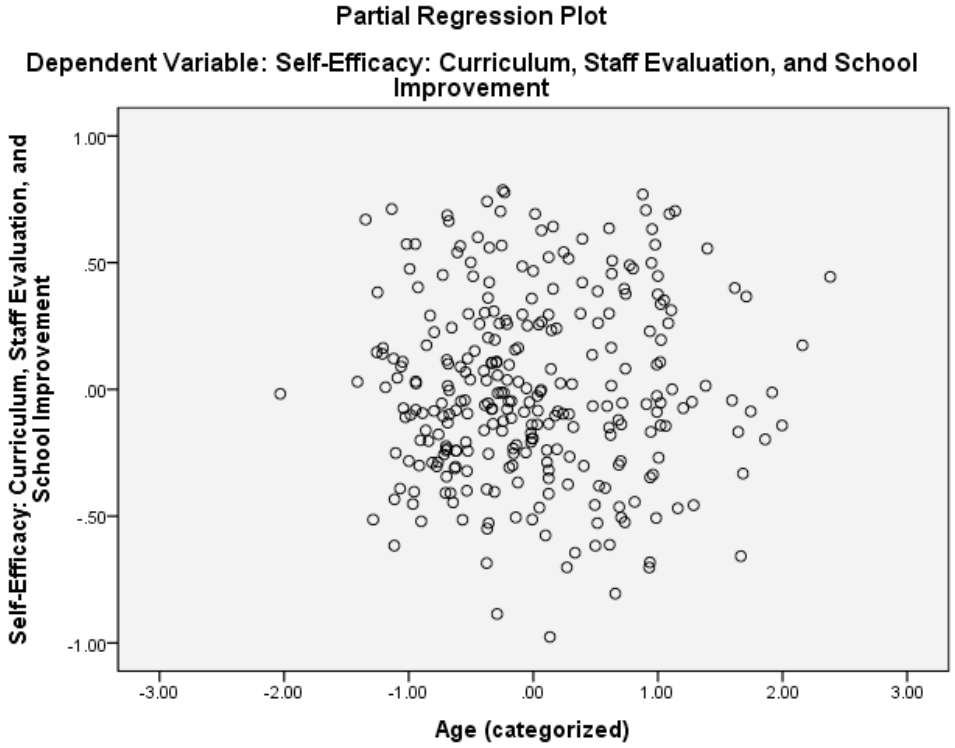
30
20
10
0
-3
-2
-1
0
1
2
3
Regression Standardized Residual

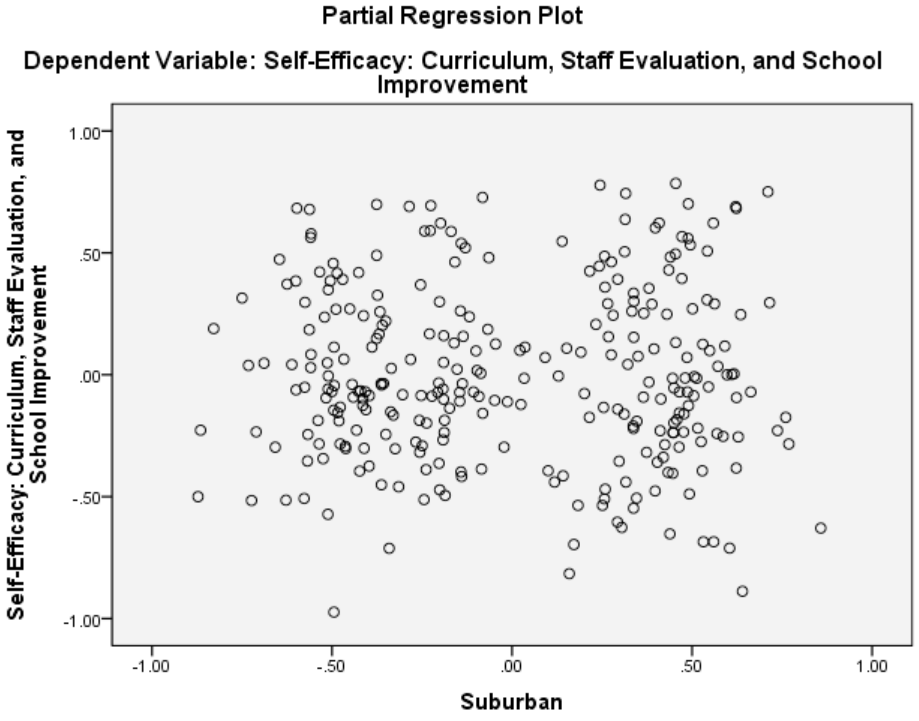

Normal P-P Plot of Regression Standardized Residual
Dependent Variable: Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0

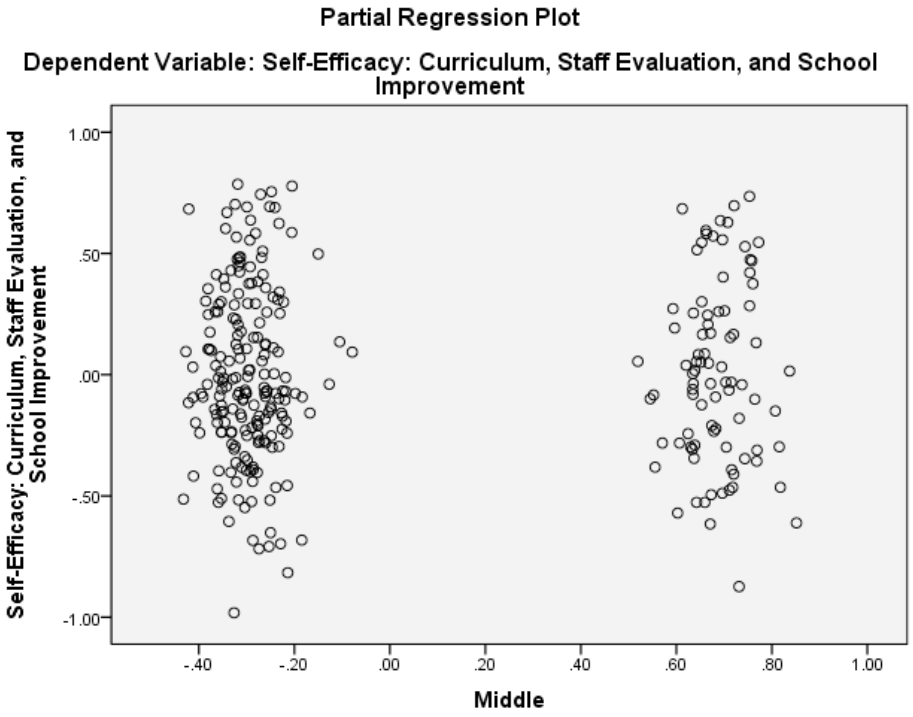

Scatterplot
Dependent Variable: Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement
Regression Standardized Residual
Regression Standardized Predicted Value
3
2
1
0
-1
-2
-3
-4
-2
0
2

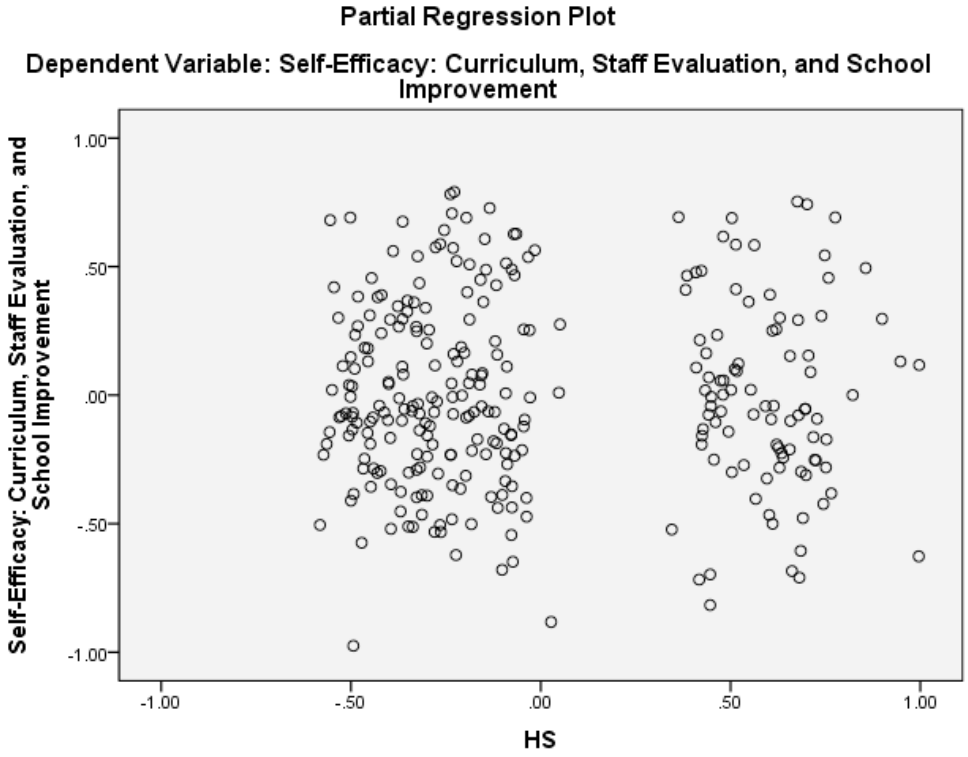

Partial Regression Plot
Dependent Variable: Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement
1.00
.50
.00
-.50
-1.00
-3.00
-2.00
-1.00
.00
1.00
2.00
Mentoring Scale

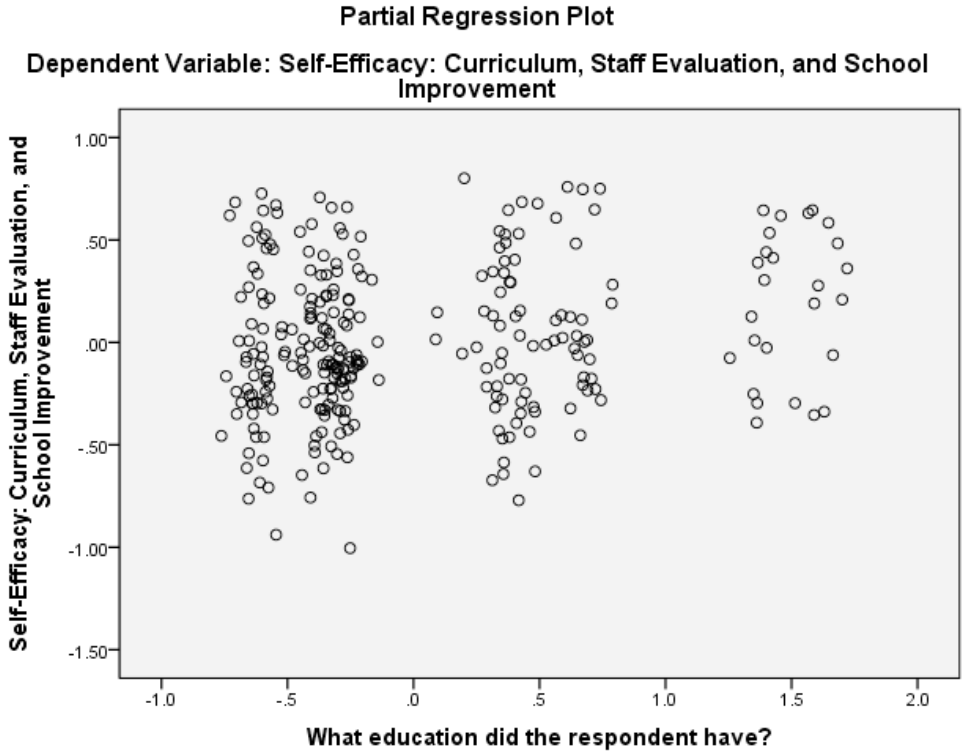

Partial Regression Plot
Dependent Variable: Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement
1.00
.50
.00
-.50
-1.00
-1.50
-1.00
-.50
.00
.50
1.00
Female

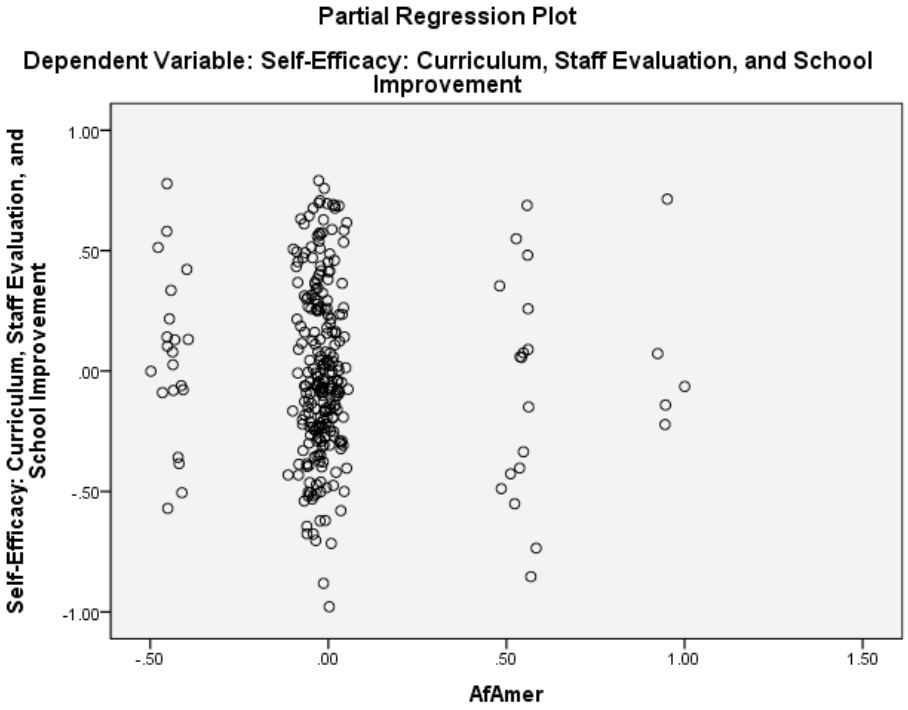

Partial Regression Plot
Dependent Variable: Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement
1.00
.50
.00
-.50
-1.00
-3.00
-2.00
-1.00
.00
1.00
2.00
3.00
Age (categorized)


Partial Regression Plot
Dependent Variable: Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement
1.00
.50
.00
-.50
-1.00
-1.00
-.50
.00
.50
1.00
Suburban


Partial Regression Plot
Dependent Variable: Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement
1.00
.50
.00
-.50
-1.00
-.40
-.20
.00
.20
.40
.60
.80
1.00
Middle


Partial Regression Plot
Dependent Variable: Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement
1.00
.50
.00
-.50
-1.00
-1.00
-.50
.00
.50
1.00
HS


Partial Regression Plot
Dependent Variable: Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement
1.00
.50
.00
-.50
-1.00
-1.50
-1.0
-.5
.0
.5
1.0
1.5
2.0
What education did the respondent have?


Partial Regression Plot
Dependent Variable: Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement
1.00
.50
.00
-.50
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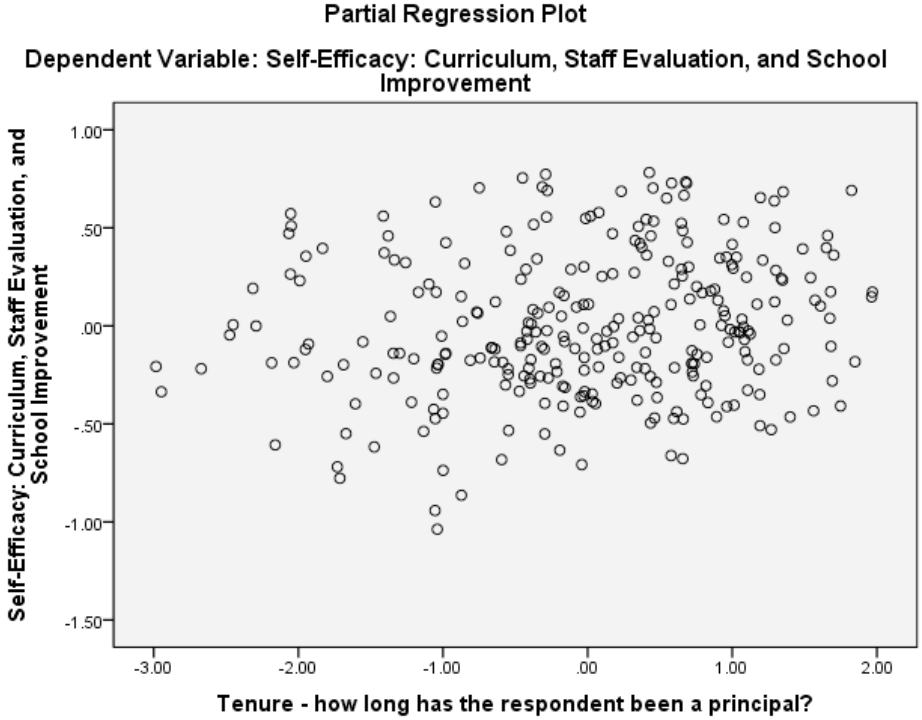
-.50
.00
.50
1.00
1.50
AfAmer


Partial Regression Plot
Dependent Variable: Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement
Self-Efficacy: Curriculum, Staff Evaluation, and School Improvement
1.00
.50
.00
-.50
-1.00
-1.50
-3.00
-2.00
-1.00
.00
1.00
2.00
Tenure - how long has the respondent been a principal?

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Tenure - how long has the respondent been a principal?, AfAmer, HS, Middle, What education did the respondent have?, Mentoring Scale, Female, Suburban, Age (categorized), Urban[b]	.	Enter

a. Dependent Variable: Self-Efficacy: Data Use

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.215[a]	.046	.011	.45387

a. Predictors: (Constant), Tenure - how long has the respondent been a principal?, AfAmer, HS, Middle, What education did the respondent have?, Mentoring Scale, Female, Suburban, Age (categorized), Urban

b. Dependent Variable: Self-Efficacy: Data Use

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.744	10	.274	1.332	.213[b]
	Residual	56.855	276	.206		

	Total	59.599	286			

a. Dependent Variable: Self-Efficacy: Data Use

b. Predictors: (Constant), Tenure - how long has the respondent been a principal?, AfAmer, HS, Middle, What education did the respondent have?, Mentoring Scale, Female, Suburban, Age (categorized), Urban

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.912	.199		14.602	.000
	Mentoring Scale	.052	.038	.082	1.360	.175
	Female	.081	.057	.089	1.417	.158
	Age (categorized)	-.019	.035	-.038	-.551	.582
	Urban	-.025	.100	-.019	-.251	.802
	Suburban	-.113	.063	-.122	-1.793	.074
	Middle	.018	.059	.019	.314	.754
	HS	-.112	.061	-.115	-1.841	.067
	What education did the respondent have?	.051	.042	.074	1.210	.227
	AfAmer	-.097	.121	-.056	-.795	.427
	Tenure - how long has the respondent been a principal?	.041	.026	.107	1.573	.117

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Mentoring Scale	.947	1.056
	Female	.884	1.132
	Age (categorized)	.726	1.377
	Urban	.625	1.601
	Suburban	.748	1.337
	Middle	.982	1.018
	HS	.880	1.136

	What education did the respondent have?	.937	1.067
	AfAmer	.687	1.455
	Tenure - how long has the respondent been a principal?	.745	1.342

a. Dependent Variable: Self-Efficacy: Data Use

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Mentoring Scale	Female
1	1	6.625	1.000	.00	.00	.01
	2	1.426	2.155	.00	.00	.00
	3	.828	2.829	.00	.00	.06
	4	.705	3.066	.00	.00	.02
	5	.543	3.492	.00	.00	.52
	6	.388	4.133	.00	.00	.14
	7	.269	4.961	.00	.00	.16
	8	.104	7.985	.01	.04	.00
	9	.053	11.233	.00	.01	.08
	10	.048	11.806	.02	.25	.00
	11	.013	22.862	.96	.70	.00

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions					
		Age (categorized)	Urban	Suburban	Middle	HS	What education did the respondent have?
1	1	.00	.00	.00	.01	.00	.00
	2	.00	.17	.03	.00	.00	.00
	3	.00	.00	.08	.00	.47	.00
	4	.00	.01	.02	.85	.04	.00
	5	.00	.01	.22	.00	.01	.00
	6	.00	.51	.00	.09	.16	.00
	7	.02	.28	.58	.03	.31	.01
	8	.21	.01	.03	.00	.01	.15

	9	.66	.00	.00	.00	.00	.01
	10	.06	.00	.00	.00	.00	.69
	11	.05	.00	.02	.01	.01	.14

Collinearity Diagnostics[a]

		Variance Proportions	
Model	Dimension	AfAmer	Tenure - how long has the respondent been a principal?
1	1	.00	.00
	2	.19	.00
	3	.06	.00
	4	.01	.00
	5	.15	.00
	6	.50	.00
	7	.09	.02
	8	.00	.19
	9	.00	.77
	10	.00	.01
	11	.00	.01

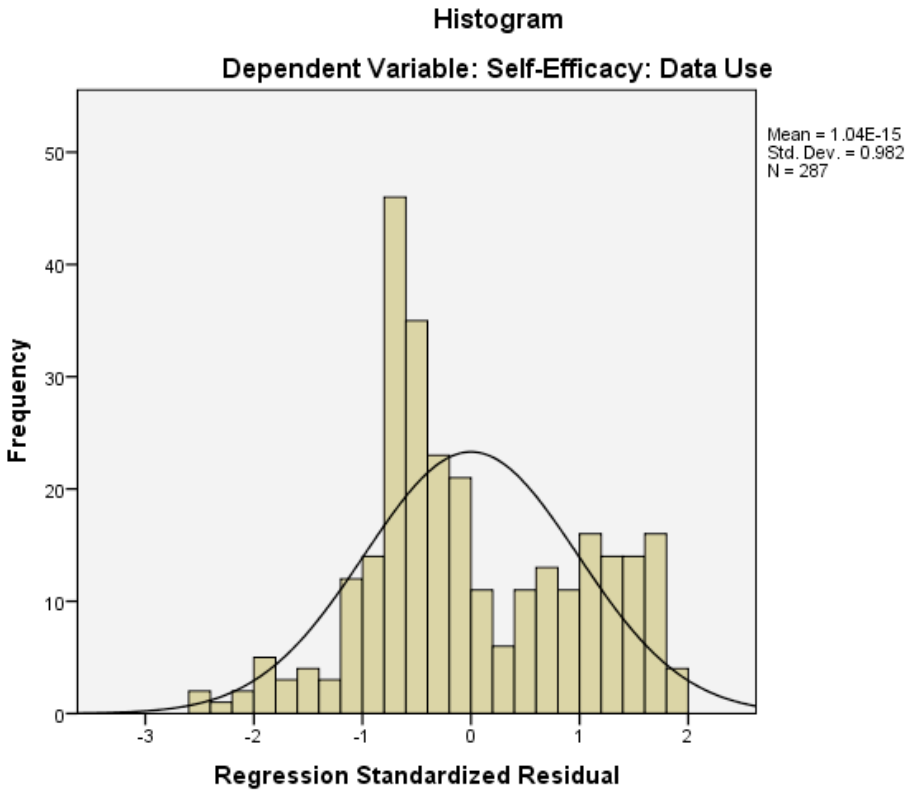
a. Dependent Variable: Self-Efficacy: Data Use

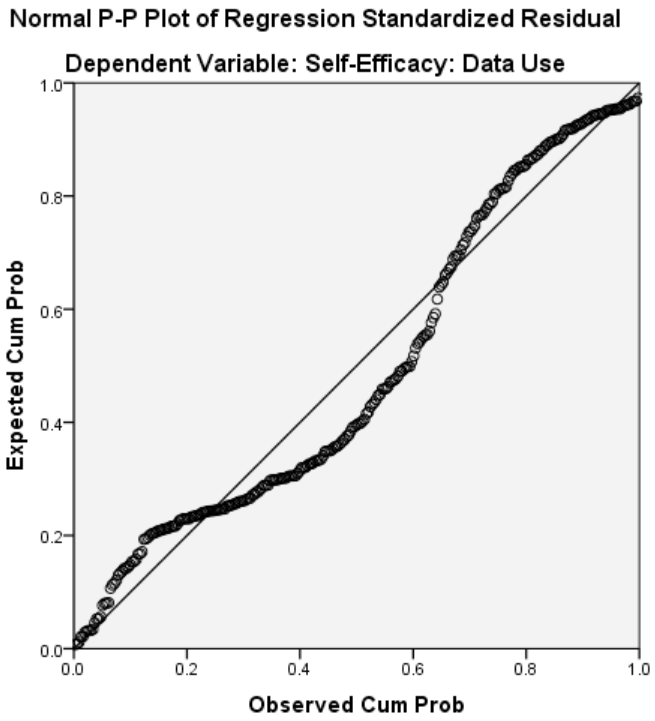
Residuals Statistics[a]

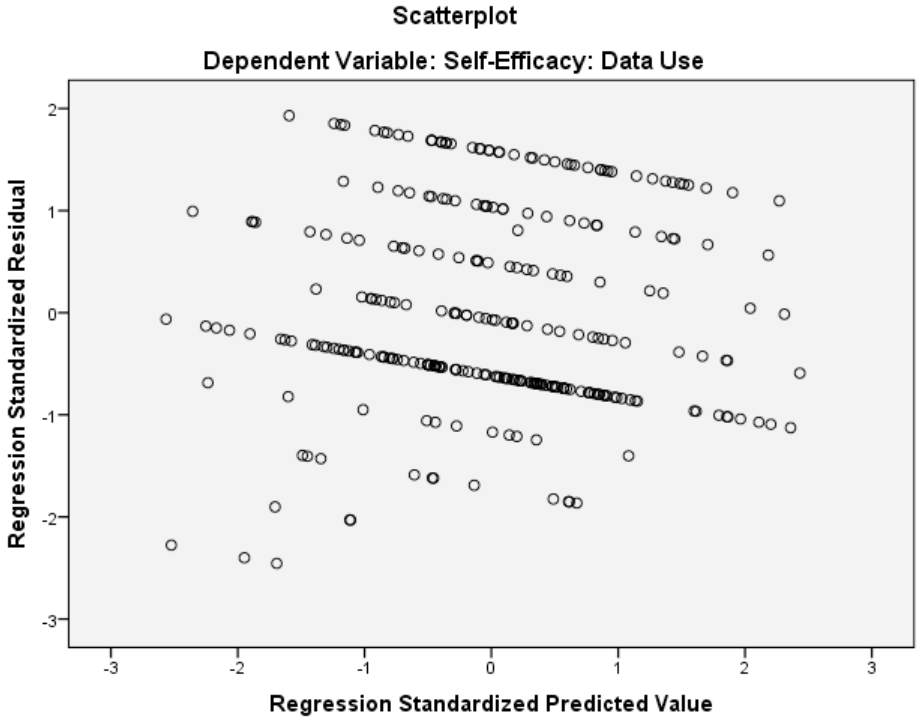
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.0289	3.5185	3.2802	.09796	287
Std. Predicted Value	-2.565	2.432	.000	1.000	287
Standard Error of Predicted Value	.062	.151	.087	.019	287
Adjusted Predicted Value	2.9935	3.5281	3.2796	.09981	287
Residual	-1.11443	.87599	.00000	.44586	287
Std. Residual	-2.455	1.930	.000	.982	287
Stud. Residual	-2.522	1.970	.001	1.004	287
Deleted Residual	-1.19123	.91675	.00060	.46573	287
Stud. Deleted Residual	-2.547	1.980	.001	1.006	287
Mahal. Distance	4.284	30.592	9.965	5.185	287
Cook's Distance	.000	.054	.004	.006	287
Centered Leverage Value	.015	.107	.035	.018	287

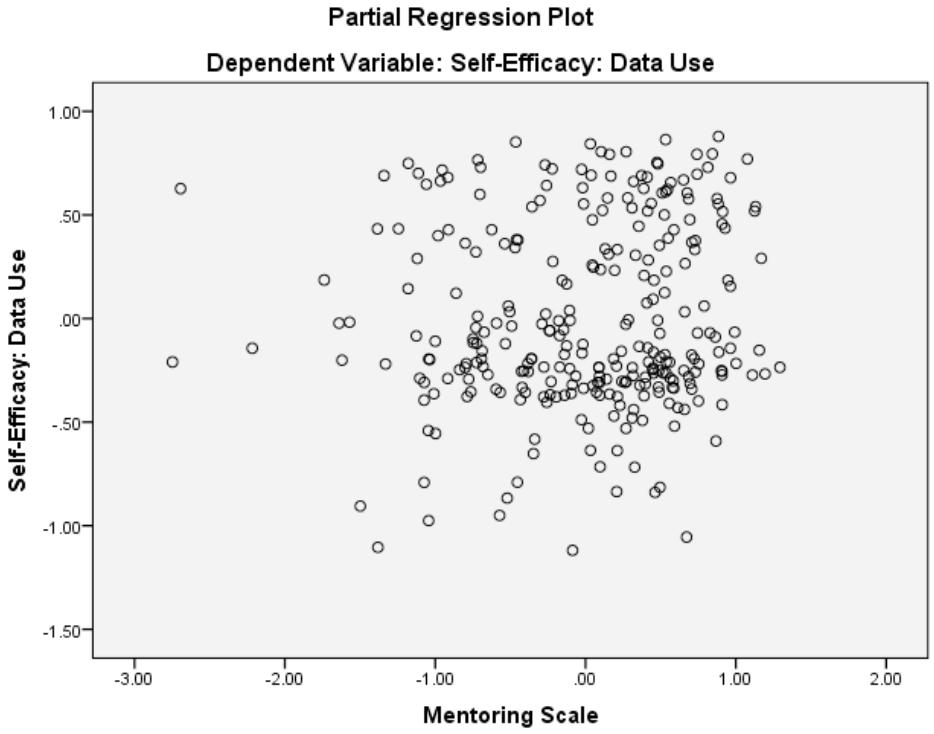
a. Dependent Variable: Self-Efficacy: Data Use

Charts




Normal P-P Plot of Regression Standardized Residual
Dependent Variable: Self-Efficacy: Data Use
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0


Scatterplot
Dependent Variable: Self-Efficacy: Data Use
Regression Standardized Residual
Regression Standardized Predicted Value
-3
-2
-1
0
1
2
3


Partial Regression Plot
Dependent Variable: Self-Efficacy: Data Use
Self-Efficacy: Data Use
1.00
.50
.00
-.50
-1.00
-1.50
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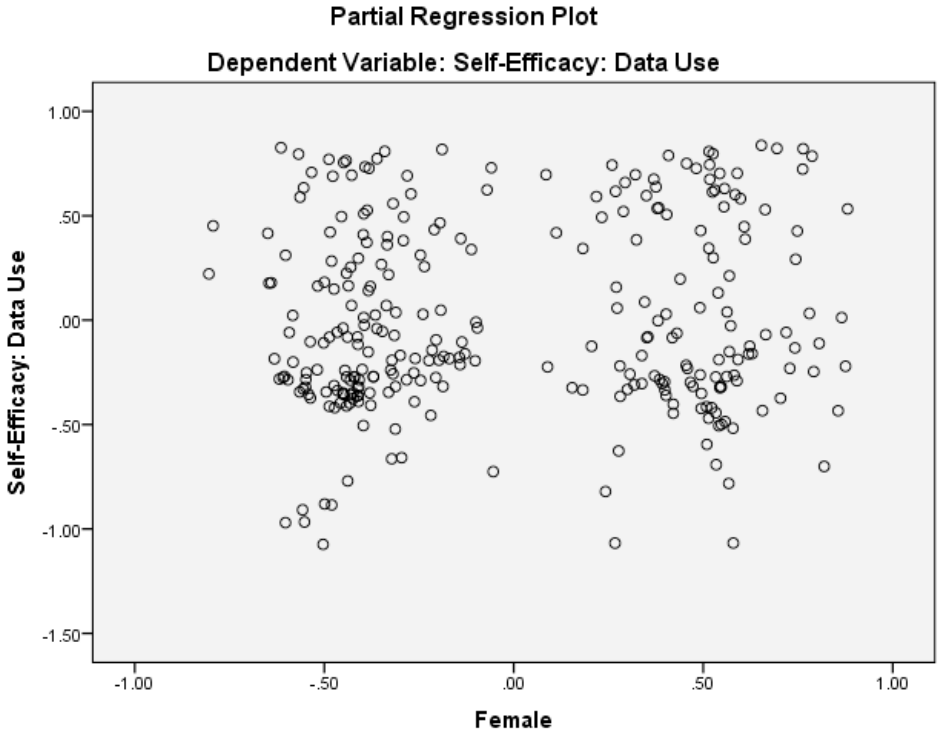
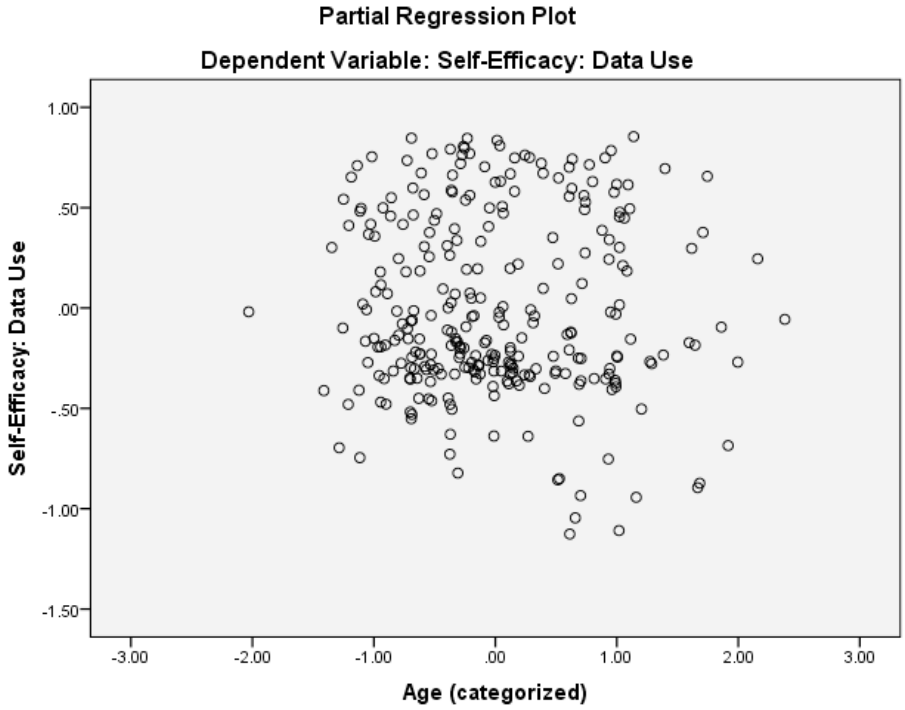
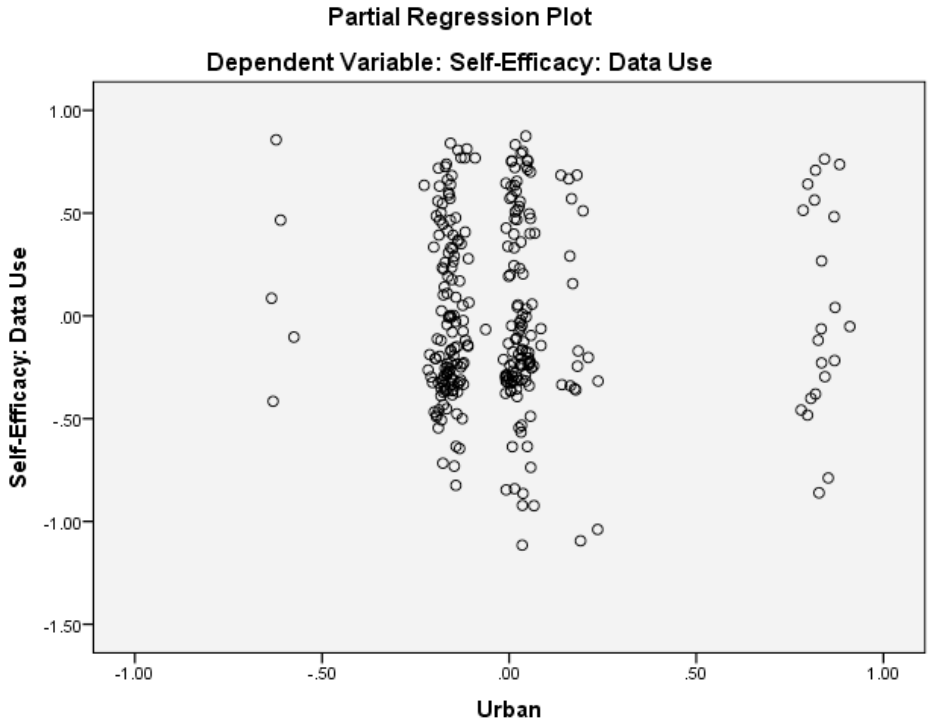
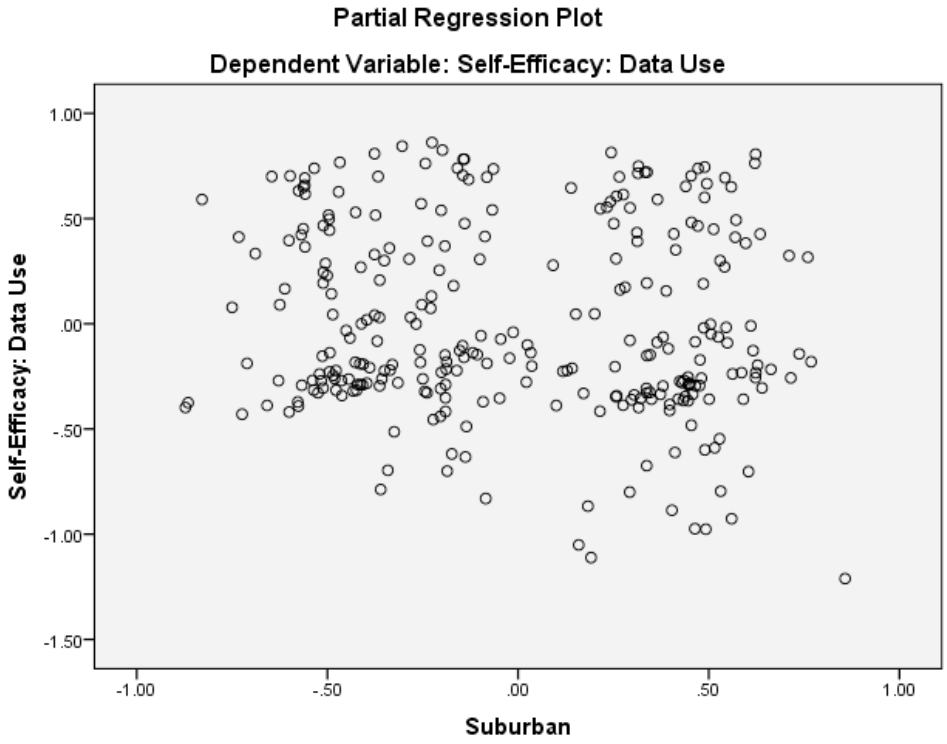
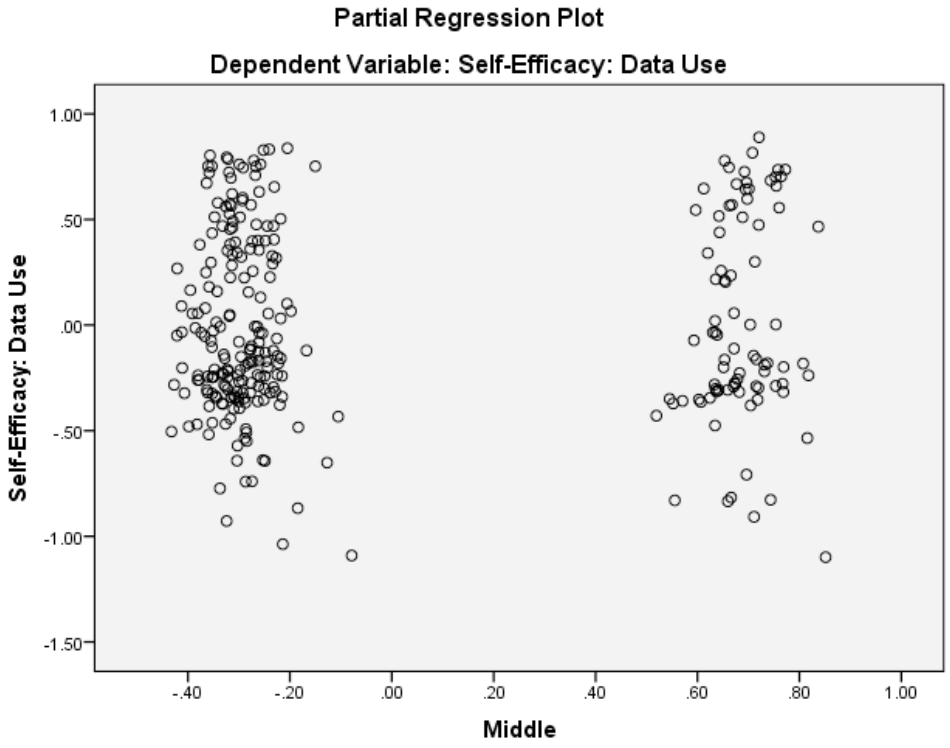
-2.00
-1.00
.00
1.00
2.00
Mentoring Scale

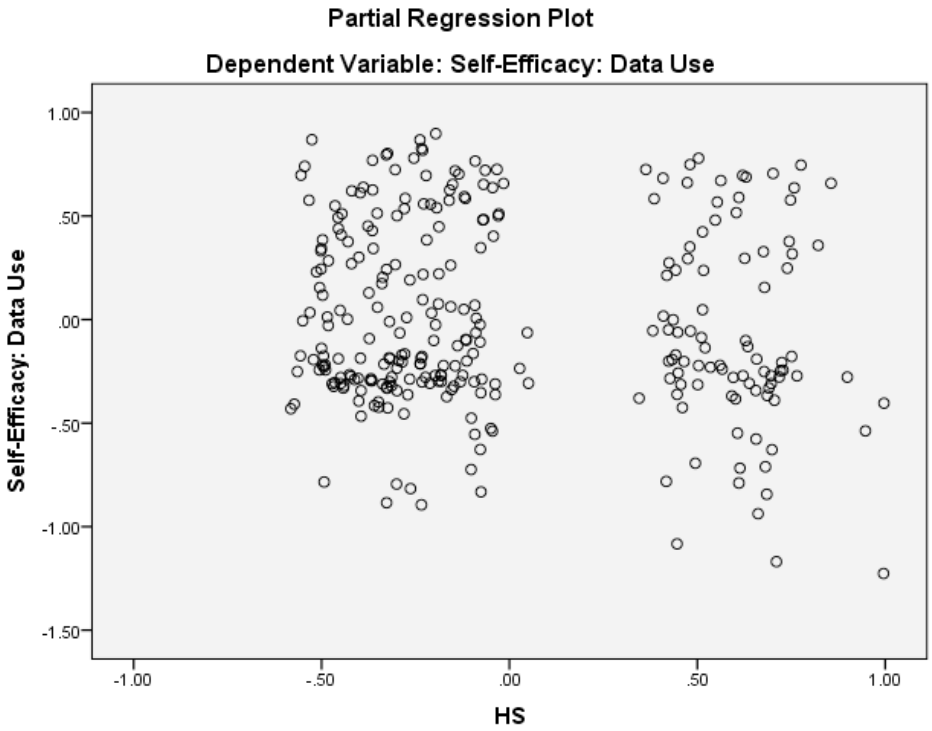

Partial Regression Plot
Dependent Variable: Self-Efficacy: Data Use
Self-Efficacy: Data Use
1.00
.50
.00
-.50
-1.00
-1.50
-1.00
-.50
.00
.50
1.00
Female

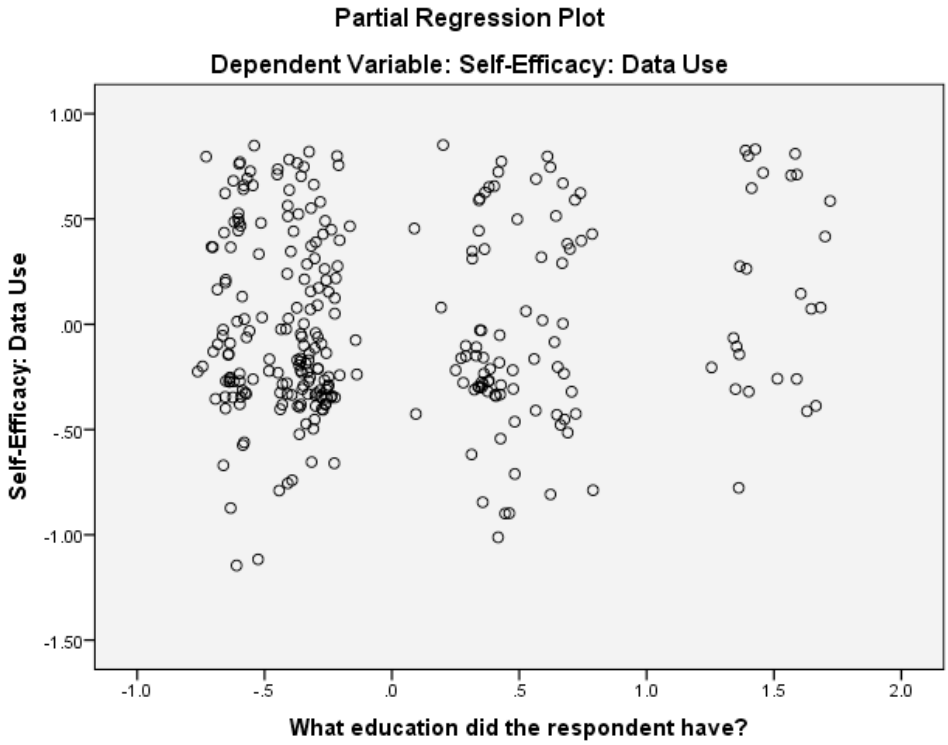

Partial Regression Plot
Dependent Variable: Self-Efficacy: Data Use
Self-Efficacy: Data Use
1.00
.50
.00
-.50
-1.00
-1.50
-3.00
-2.00
-1.00
.00
1.00
2.00
3.00
Age (categorized)

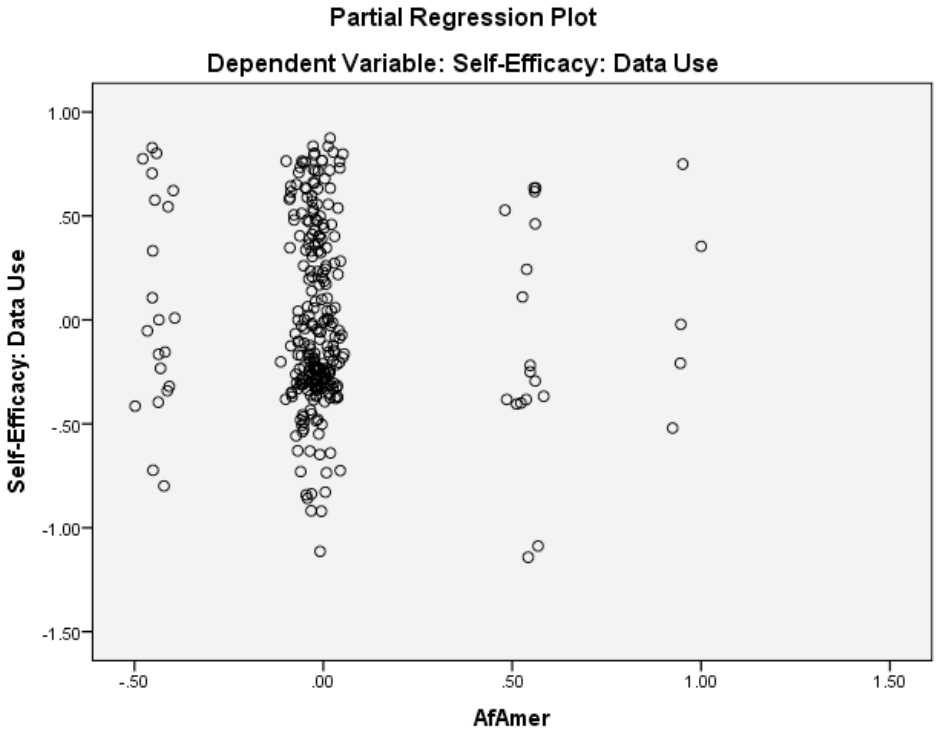

Partial Regression Plot
Dependent Variable: Self-Efficacy: Data Use
Self-Efficacy: Data Use
1.00
.50
.00
-.50
-1.00
-1.50
-1.00
-.50
.00
.50
1.00
Urban

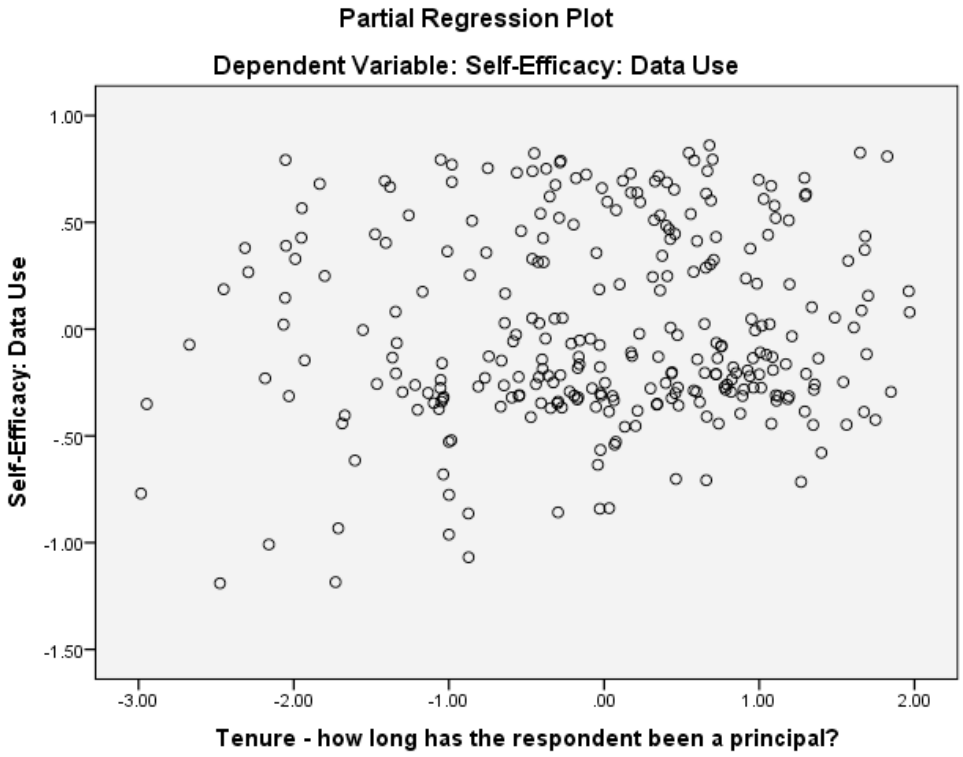

Partial Regression Plot
Dependent Variable: Self-Efficacy: Data Use
Self-Efficacy: Data Use
1.00
.50
.00
-.50
-1.00
-1.50
-1.00
-.50
.00
.50
1.00
Suburban


Partial Regression Plot
Dependent Variable: Self-Efficacy: Data Use
Self-Efficacy: Data Use
1.00
.50
.00
-.50
-1.00
-1.50
-.40
-.20
.00
.20
.40
.60
.80
1.00
Middle


Partial Regression Plot
Dependent Variable: Self-Efficacy: Data Use
Self-Efficacy: Data Use
1.00
.50
.00
-.50
-1.00
-1.50
-1.00
-.50
.00
.50
1.00
HS


Partial Regression Plot
Dependent Variable: Self-Efficacy: Data Use
Self-Efficacy: Data Use
1.00
.50
.00
-.50
-1.00
-1.50
-1.0
-.5
.0
.5
1.0
1.5
2.0
What education did the respondent have?


Partial Regression Plot
Dependent Variable: Self-Efficacy: Data Use
Self-Efficacy: Data Use
1.00
.50
.00
-.50
-1.00
-1.50
-.50
.00
.50
1.00
1.50
AfAmer



Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Tenure - how long has the respondent been a principal?, AfAmer, HS, Middle, What education did the respondent have?, Mentoring Scale, Female, Suburban, Age (categorized), Urban[b]	.	Enter

a. Dependent Variable: Self-Efficacy: Positive Culture

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.393[a]	.155	.124	.45931

a. Predictors: (Constant), Tenure - how long has the respondent been a principal?, AfAmer, HS, Middle, What education did the respondent have?, Mentoring Scale, Female, Suburban, Age (categorized), Urban

b. Dependent Variable: Self-Efficacy: Positive Culture

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.658	10	1.066	5.052	.000[b]
	Residual	58.226	276	.211		
	Total	68.884	286			

a. Dependent Variable: Self-Efficacy: Positive Culture

b. Predictors: (Constant), Tenure - how long has the respondent been a principal?, AfAmer, HS, Middle, What education did the respondent have?, Mentoring Scale, Female, Suburban, Age (categorized), Urban

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.998	.202		9.902	.000
	Mentoring Scale	.166	.038	.246	4.323	.000
	Female	-.052	.058	-.052	-.891	.374
	Age (categorized)	.062	.035	.114	1.748	.081
	Urban	.225	.101	.156	2.226	.027
	Suburban	.042	.064	.042	.658	.511
	Middle	.045	.060	.042	.748	.455
	HS	.005	.062	.004	.076	.940

	What education did the respondent have?	.071	.043	.095	1.658	.098
	AfAmer	-.249	.123	-.135	-2.028	.044
	Tenure - how long has the respondent been a principal?	.066	.026	.161	2.508	.013

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Mentoring Scale	.947	1.056
	Female	.884	1.132
	Age (categorized)	.726	1.377
	Urban	.625	1.601
	Suburban	.748	1.337
	Middle	.982	1.018
	HS	.880	1.136
	What education did the respondent have?	.937	1.067
	AfAmer	.687	1.455
	Tenure - how long has the respondent been a principal?	.745	1.342

a. Dependent Variable: Self-Efficacy: Positive Culture

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Mentoring Scale	Female
1	1	6.625	1.000	.00	.00	.01
	2	1.426	2.155	.00	.00	.00
	3	.828	2.829	.00	.00	.06
	4	.705	3.066	.00	.00	.02
	5	.543	3.492	.00	.00	.52
	6	.388	4.133	.00	.00	.14
	7	.269	4.961	.00	.00	.16
	8	.104	7.985	.01	.04	.00

	9	.053	11.233	.00	.01	.08
	10	.048	11.806	.02	.25	.00
	11	.013	22.862	.96	.70	.00

Collinearity Diagnostics[a]

		Variance Proportions					
Model	Dimension	Age (categorized)	Urban	Suburban	Middle	HS	What education did the respondent have?
1	1	.00	.00	.00	.01	.00	.00
	2	.00	.17	.03	.00	.00	.00
	3	.00	.00	.08	.00	.47	.00
	4	.00	.01	.02	.85	.04	.00
	5	.00	.01	.22	.00	.01	.00
	6	.00	.51	.00	.09	.16	.00
	7	.02	.28	.58	.03	.31	.01
	8	.21	.01	.03	.00	.01	.15
	9	.66	.00	.00	.00	.00	.01
	10	.06	.00	.00	.00	.00	.69
	11	.05	.00	.02	.01	.01	.14

Collinearity Diagnostics[a]

		Variance Proportions	
Model	Dimension	AfAmer	Tenure - how long has the respondent been a principal?
1	1	.00	.00
	2	.19	.00
	3	.06	.00
	4	.01	.00
	5	.15	.00
	6	.50	.00
	7	.09	.02
	8	.00	.19
	9	.00	.77
	10	.00	.01

11	.00	.01

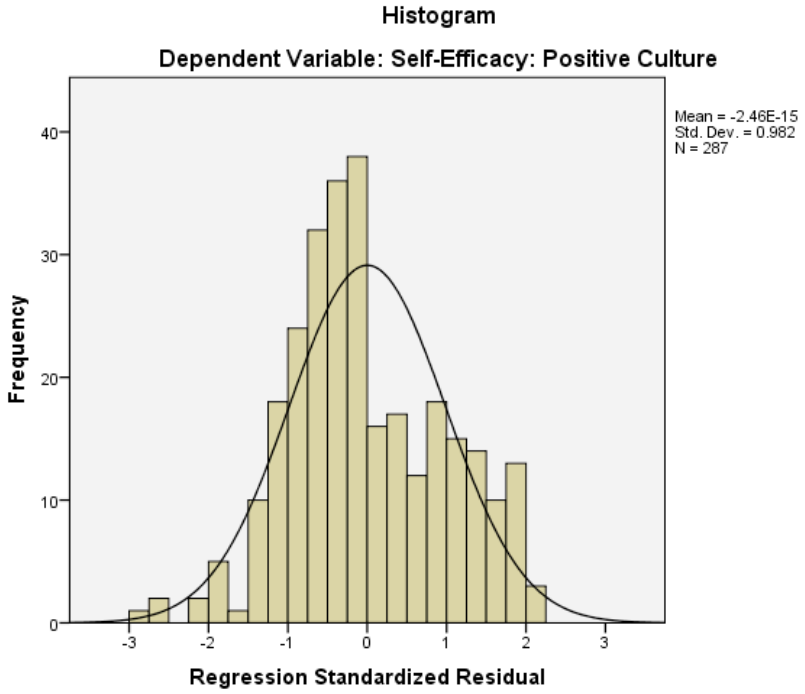
a. Dependent Variable: Self-Efficacy: Positive Culture

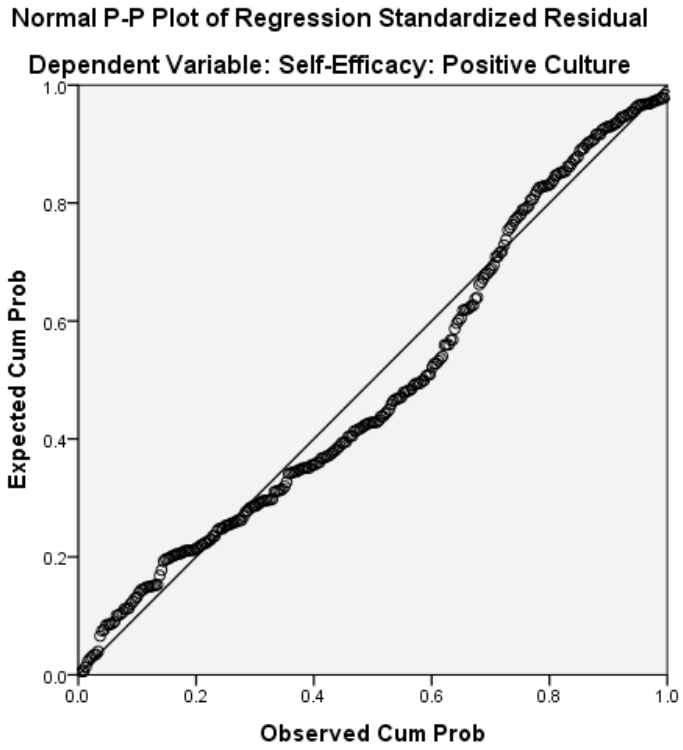
Residuals Statistics[a]

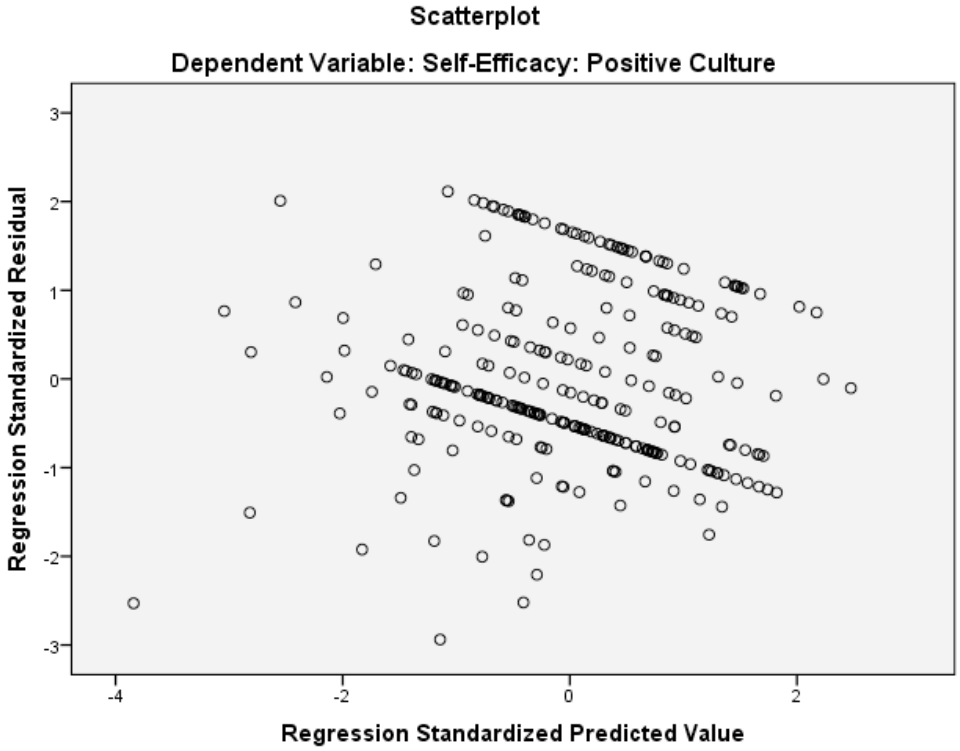
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.4947	3.7143	3.2364	.19304	287
Std. Predicted Value	-3.842	2.476	.000	1.000	287
Standard Error of Predicted Value	.062	.153	.088	.019	287
Adjusted Predicted Value	2.6017	3.7166	3.2360	.19326	287
Residual	-1.34924	.97100	.00000	.45121	287
Std. Residual	-2.938	2.114	.000	.982	287
Stud. Residual	-3.057	2.207	.000	1.002	287
Deleted Residual	-1.46165	1.05797	.00040	.46994	287
Stud. Deleted Residual	-3.105	2.222	.001	1.006	287
Mahal. Distance	4.284	30.592	9.965	5.185	287
Cook's Distance	.000	.071	.004	.007	287
Centered Leverage Value	.015	.107	.035	.018	287

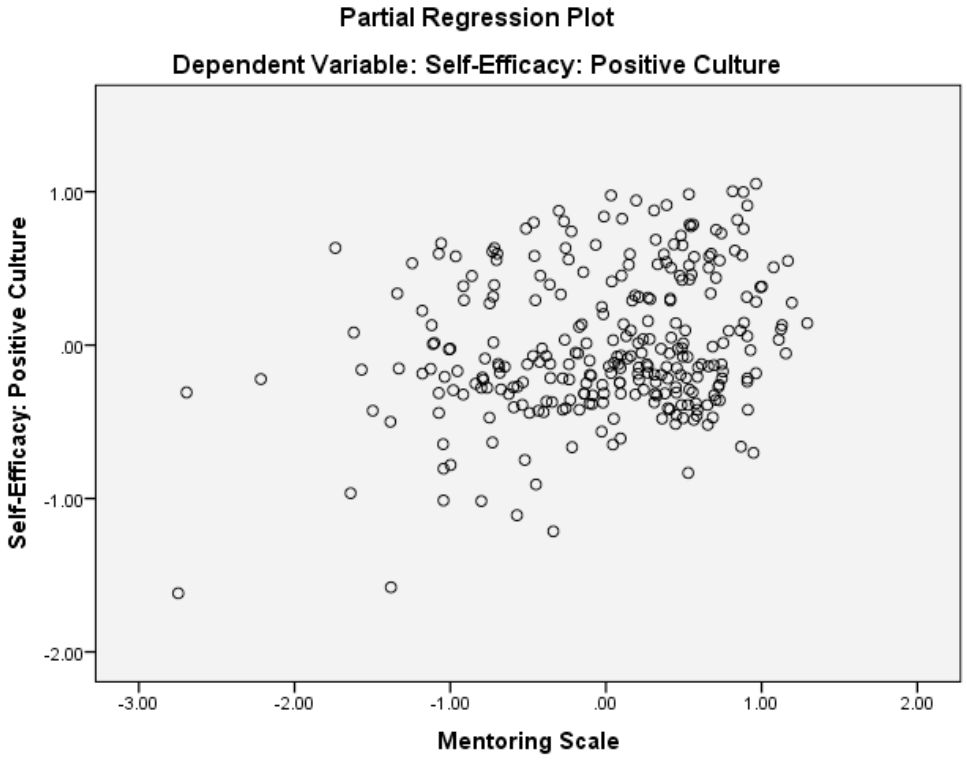
a. Dependent Variable: Self-Efficacy: Positive Culture

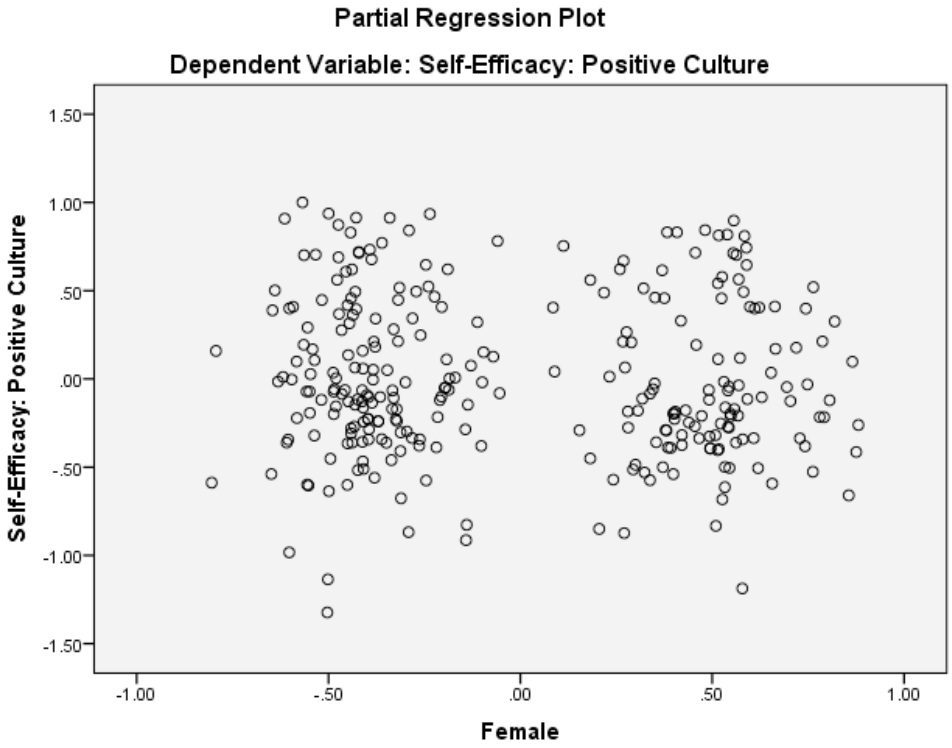
Charts

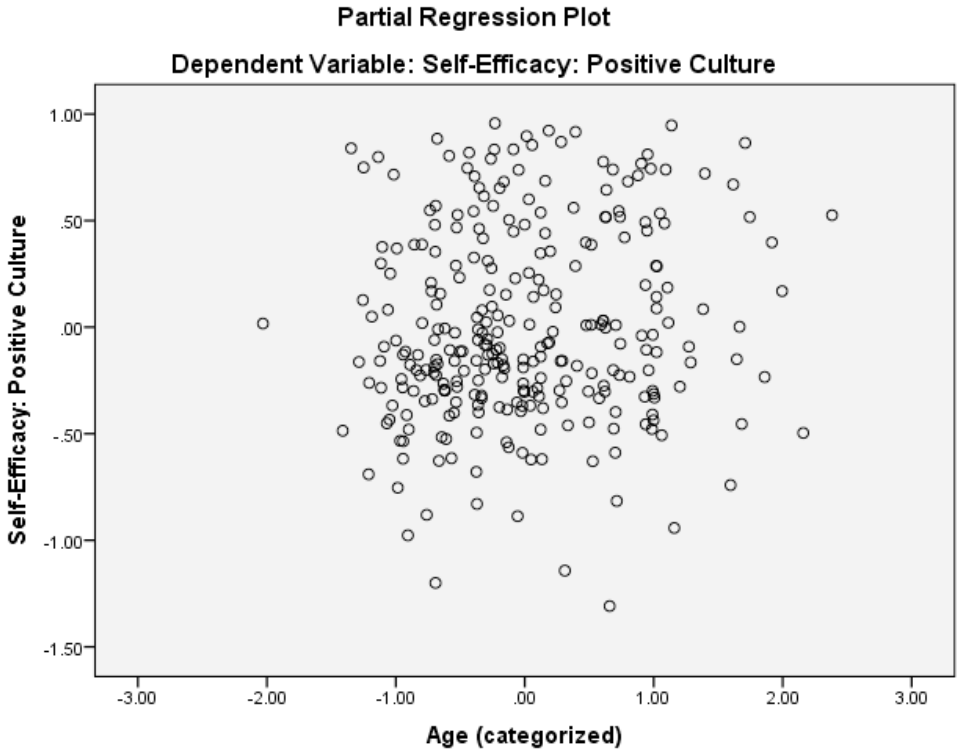

Histogram
Dependent Variable: Self-Efficacy: Positive Culture
Mean = -2.46E-15
Std. Dev. = 0.982
N = 287
Frequency
Regression Standardized Residual

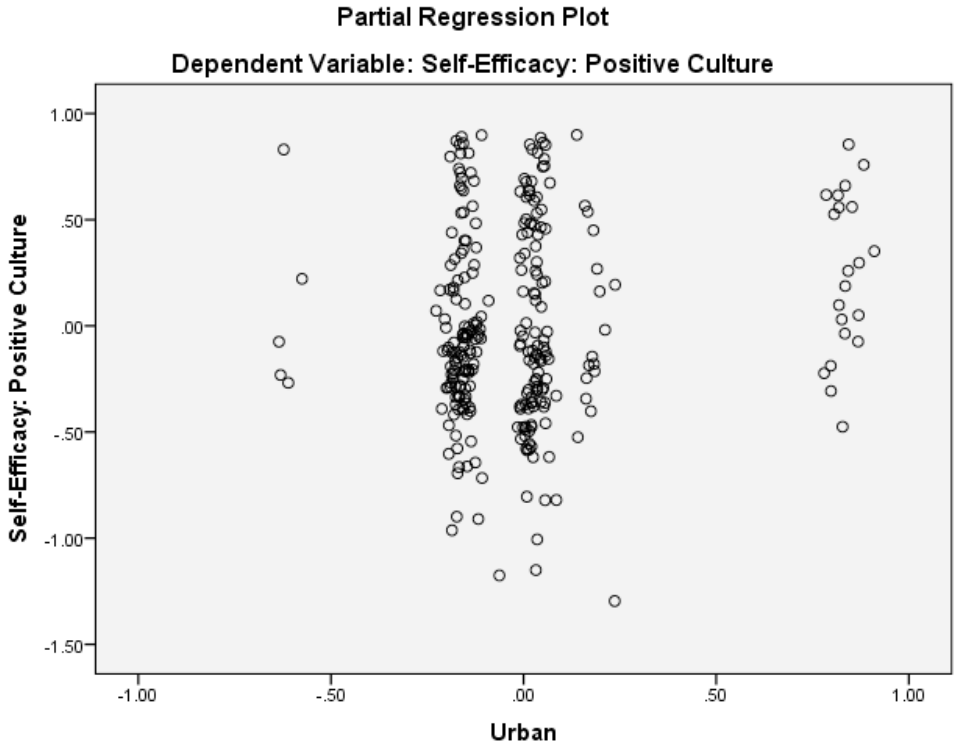

Normal P-P Plot of Regression Standardized Residual
Dependent Variable: Self-Efficacy: Positive Culture
Expected Cum Prob
Observed Cum Prob

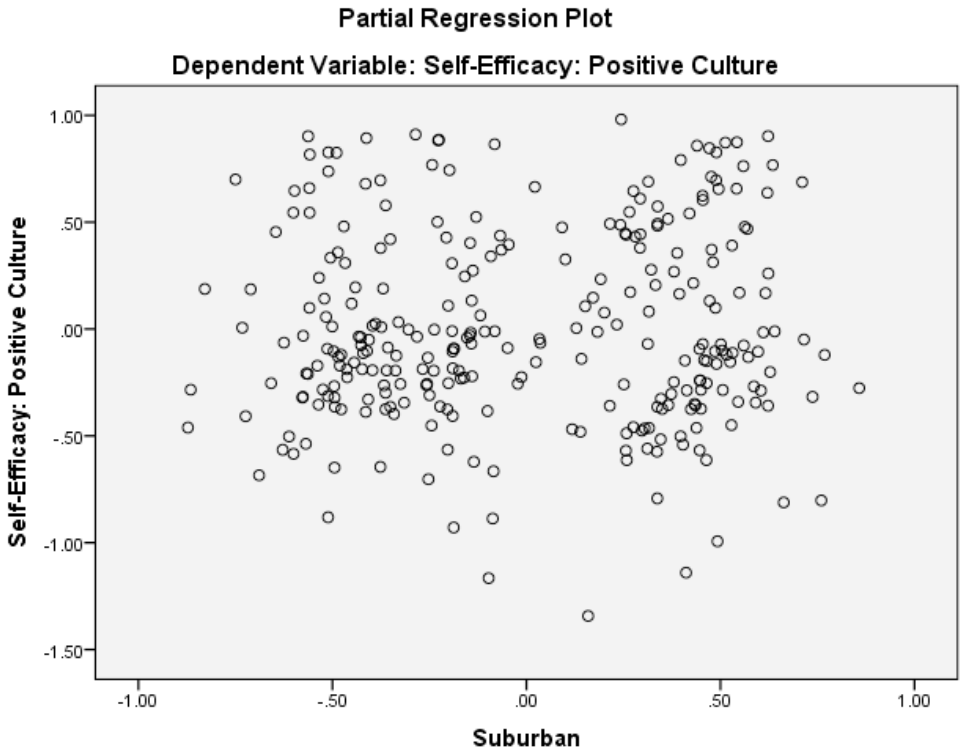

Scatterplot
Dependent Variable: Self-Efficacy: Positive Culture
Regression Standardized Residual
Regression Standardized Predicted Value
3
2
1
0
-1
-2
-3
-4
-2
0
2

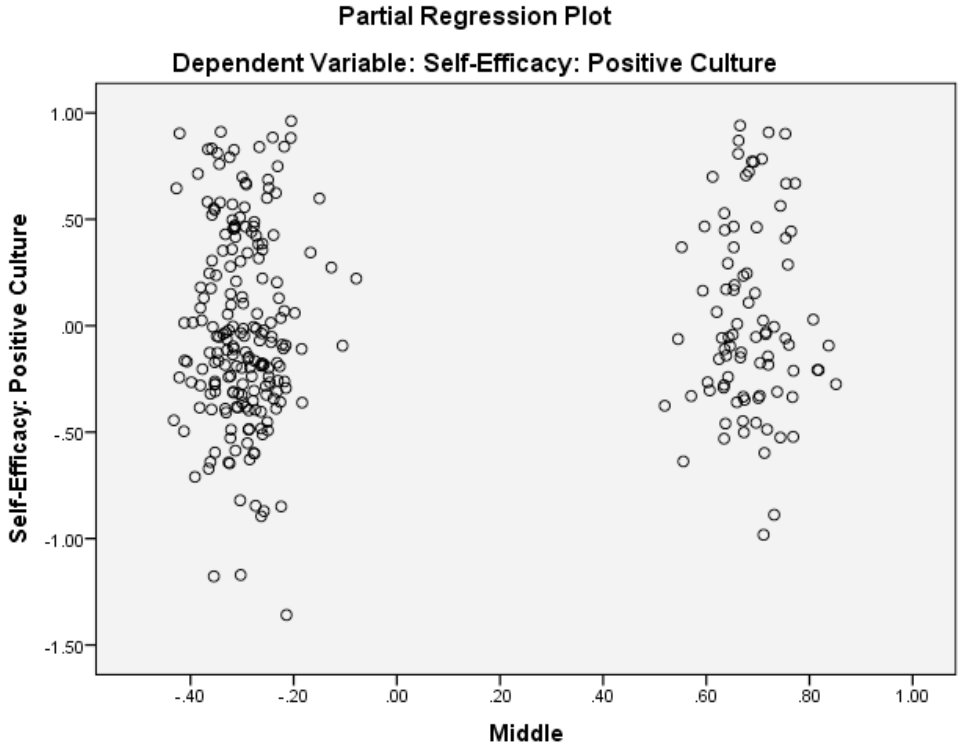

Partial Regression Plot
Dependent Variable: Self-Efficacy: Positive Culture
Self-Efficacy: Positive Culture
Mentoring Scale
1.00
.00
-1.00
-2.00
-3.00
-2.00
-1.00
.00
1.00
2.00

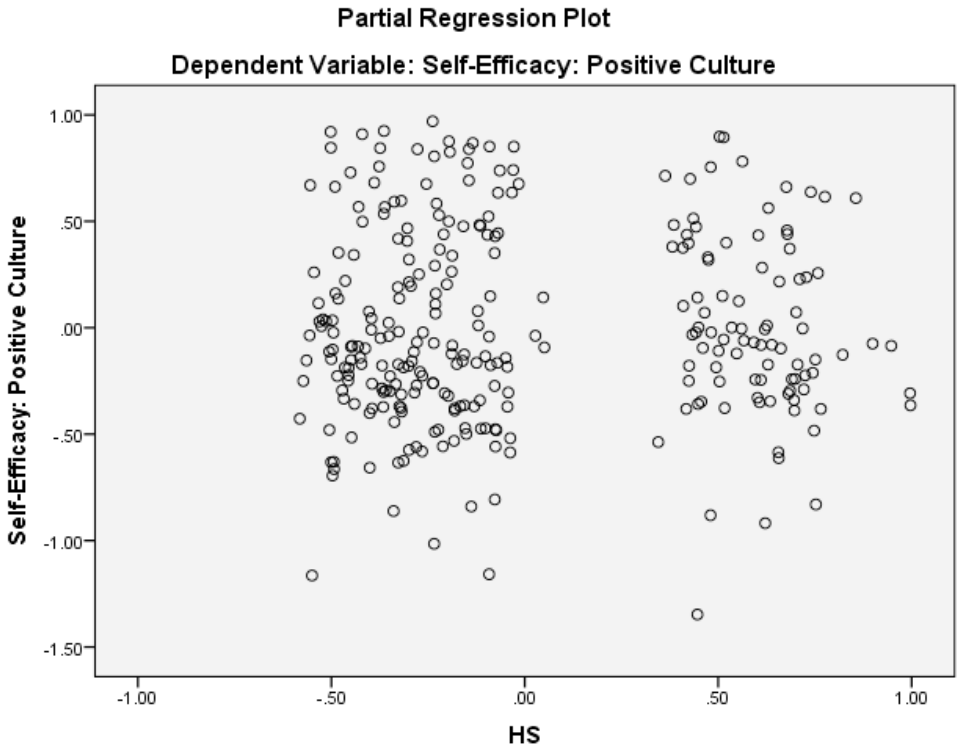

Partial Regression Plot
Dependent Variable: Self-Efficacy: Positive Culture
Self-Efficacy: Positive Culture
1.50
1.00
.50
.00
-.50
-1.00
-1.50
-1.00
-.50
.00
.50
1.00
Female

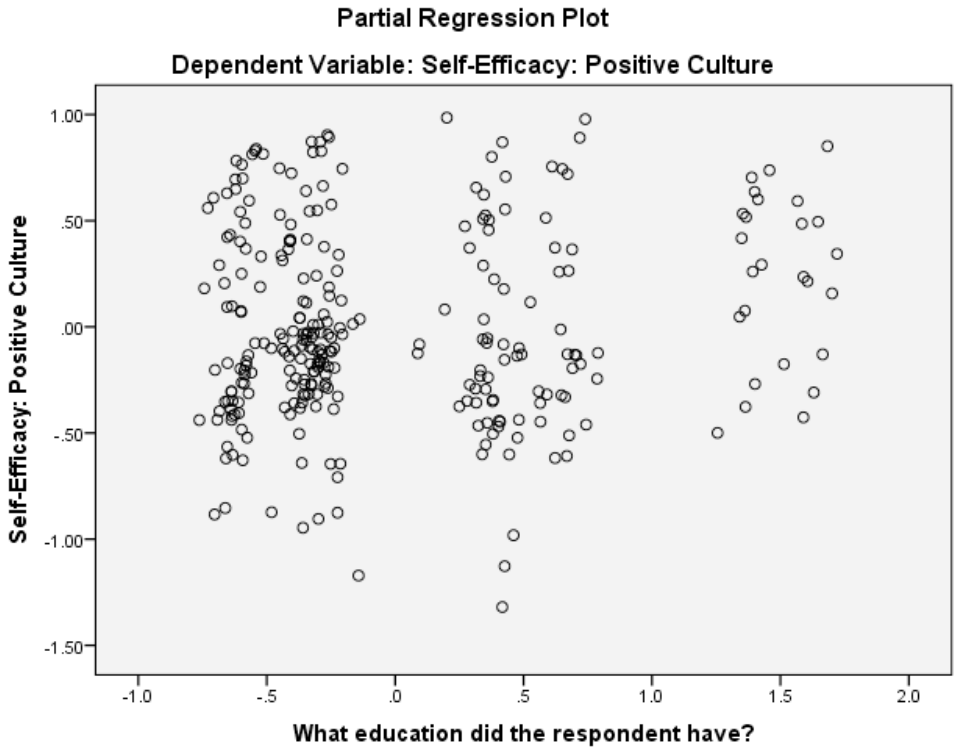

Partial Regression Plot
Dependent Variable: Self-Efficacy: Positive Culture
Self-Efficacy: Positive Culture
1.00
.50
.00
-.50
-1.00
-1.50
-3.00
-2.00
-1.00
.00
1.00
2.00
3.00
Age (categorized)

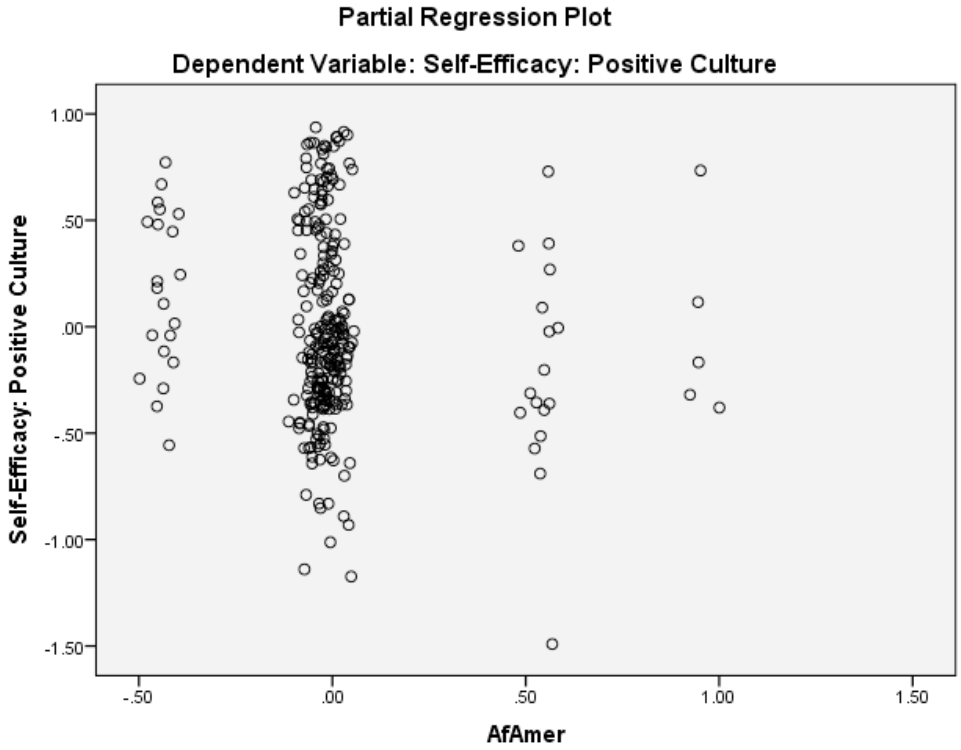

Partial Regression Plot
Dependent Variable: Self-Efficacy: Positive Culture
Self-Efficacy: Positive Culture
1.00
.50
.00
-.50
-1.00
-1.50
-1.00
-.50
.00
.50
1.00
Urban

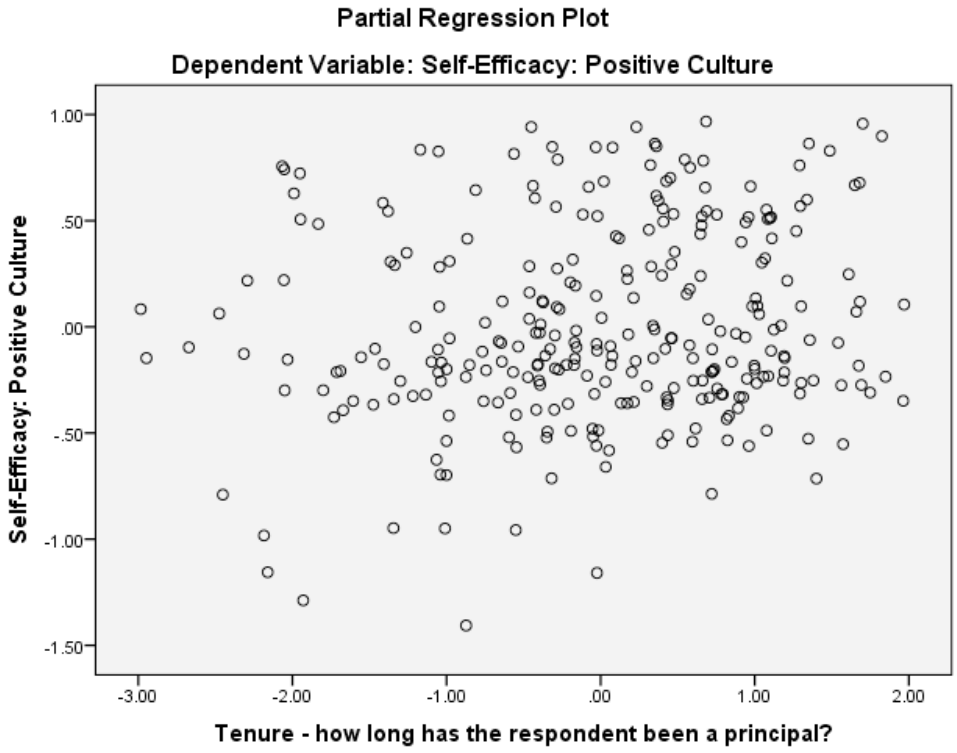

Partial Regression Plot
Dependent Variable: Self-Efficacy: Positive Culture
Self-Efficacy: Positive Culture
1.00
.50
.00
-.50
-1.00
-1.50
-1.00
-.50
.00
.50
1.00
Suburban


Partial Regression Plot
Dependent Variable: Self-Efficacy: Positive Culture
Self-Efficacy: Positive Culture
1.00
.50
.00
-.50
-1.00
-1.50
-.40
-.20
.00
.20
.40
.60
.80
1.00
Middle


Partial Regression Plot
Dependent Variable: Self-Efficacy: Positive Culture
Self-Efficacy: Positive Culture
1.00
.50
.00
-.50
-1.00
-1.50
-1.00
-.50
.00
.50
1.00
HS


Partial Regression Plot
Dependent Variable: Self-Efficacy: Positive Culture
Self-Efficacy: Positive Culture
1.00
.50
.00
-.50
-1.00
-1.50
-1.0
-.5
.0
.5
1.0
1.5
2.0
What education did the respondent have?


Partial Regression Plot
Dependent Variable: Self-Efficacy: Positive Culture
Self-Efficacy: Positive Culture
1.00
.50
.00
-.50
-1.00
-1.50
-.50
.00
.50
1.00
1.50
AfAmer



C:\Users\Julie Helber\Desktop\Final CFA and SEM\2-1-15 Final CFA with Estimates.amw

Analysis Summary

Date and Time

Date: Monday, February 02, 2015
Time: 9:48:42 AM

Title

2-1-15 final cfa with estimates: Monday, February 02, 2015 9:48 AM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 311

Variable Summary (Group number 1)

Your model contains the following variables (Group number 1)

Observed, endogenous variables
MC_sponsor
MP_friend
MVic_Modeling
SE_Datastaffparent
SE_Dataanalysis
SE_Datastudachieve
SE_SIinstruction
SE_SIneeds
SE_Evalreflection
SE_Evaldialogue
SE_Evalinstructknowledge
SE_evaluate
SE_Cultengstaff
SE_Cultdatastbehavior
SE_Cultengstud
SE_Cultdataposenviron
MP_trust
MP_counsel
Mvb_skilled
Mvb_knowskills
Unobserved, exogenous variables
Mentoring1
e3
e5
e7
SE_Data1
e19
e20
e22
SE_Enactment1
e23
e28
e29
e30
e31
e32
SE_Culture1
e15
e17

e16
e18
e42
e43
e40
e41

Variable counts (Group number 1)

Number of variables in your model:	44
Number of observed variables:	20
Number of unobserved variables:	24
Number of exogenous variables:	24
Number of endogenous variables:	20

Parameter Summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	24	0	0	0	0	24
Labeled	0	0	0	0	0	0
Unlabeled	16	6	24	0	20	66
Total	40	6	24	0	20	90

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments:	230
Number of distinct parameters to be estimated:	66
Degrees of freedom (230 - 66):	164

Result (Default model)

Minimum was achieved
Chi-square = 370.444
Degrees of freedom = 164
Probability level = .000

Group number 1 (Group number 1 - Default model)

Estimates (Group number 1 - Default model)

Scalar Estimates (Group number 1 - Default model)

Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
MC_sponsor	<---	Mentoring1	.847	.084	10.093	***	
MP_friend	<---	Mentoring1	.947	.073	12.966	***	
MVic_Modeling	<---	Mentoring1	1.000				
SE_Datastaffparent	<---	SE_Data1	.909	.052	17.626	***	
SE_Dataanalysis	<---	SE_Data1	1.000				
SE_Datastudachieve	<---	SE_Data1	.941	.050	18.833	***	
SE_SIinstruction	<---	SE_Enactment1	.934	.066	14.154	***	
SE_SIneeds	<---	SE_Enactment1	.950	.064	14.847	***	
SE_Evalreflection	<---	SE_Enactment1	1.000				
SE_Evaldialogue	<---	SE_Enactment1	1.026	.063	16.406	***	
SE_Evalinstructknowledge	<---	SE_Enactment1	.971	.063	15.454	***	
SE_evaluate	<---	SE_Enactment1	.915	.068	13.483	***	
SE_Cultengstaff	<---	SE_Culture1	.883	.046	19.302	***	
SE_Cultdatastbehavior	<---	SE_Culture1	1.000				
SE_Cultengstud	<---	SE_Culture1	.862	.048	18.138	***	
SE_Cultdataposenviron	<---	SE_Culture1	.995	.040	25.105	***	
MP_trust	<---	Mentoring1	.807	.054	14.969	***	
MP_counsel	<---	Mentoring1	.847	.074	11.462	***	
Mvb_skilled	<---	Mentoring1	.909	.063	14.426	***	
Mvb_knowskills	<---	Mentoring1	.859	.064	13.419	***	

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
MC_sponsor	<---	Mentoring1	.603
MP_friend	<---	Mentoring1	.742
MVic_Modeling	<---	Mentoring1	.807
SE_Datastaffparent	<---	SE_Data1	.817
SE_Dataanalysis	<---	SE_Data1	.882
SE_Datastudachieve	<---	SE_Data1	.854
SE_SIinstruction	<---	SE_Enactment1	.744
SE_SIneeds	<---	SE_Enactment1	.771
SE_Evalreflection	<---	SE_Enactment1	.800
SE_Evaldialogue	<---	SE_Enactment1	.832
SE_Evalinstructknowledge	<---	SE_Enactment1	.796
SE_evaluate	<---	SE_Enactment1	.715

			Estimate
SE_Cultengstaff	<---	SE_Culture1	.801
SE_Cultdatastbehavior	<---	SE_Culture1	.921
SE_Cultengstud	<---	SE_Culture1	.775
SE_Cultdataposenviron	<---	SE_Culture1	.904
MP_trust	<---	Mentoring1	.827
MP_counsel	<---	Mentoring1	.670
Mvb_skilled	<---	Mentoring1	.804
Mvb_knowskills	<---	Mentoring1	.761

Intercepts: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
MC_sponsor	3.989	.071	55.851	***	
MP_friend	4.039	.065	62.171	***	
MVic_Modeling	4.224	.063	66.997	***	
SE_Datastaffparent	3.331	.033	99.826	***	
SE_Dataanalysis	3.267	.034	96.268	***	
SE_Datastudachieve	3.267	.033	99.063	***	
SE_Cultengstaff	3.264	.034	96.455	***	
SE_Cultengstud	3.203	.034	93.862	***	
SE_Cultdatastbehavior	3.283	.033	98.499	***	
SE_Cultdataposenviron	3.289	.034	97.402	***	
SE_SIinstruction	3.315	.034	98.145	***	
SE_SIneeds	3.318	.033	100.319	***	
SE_Evalreflection	3.373	.034	100.437	***	
SE_Evaldialogue	3.386	.033	102.258	***	
SE_Evalinstructknowledge	3.412	.033	104.094	***	
SE_evaluate	3.421	.034	99.571	***	
MP_trust	4.475	.050	90.351	***	
MP_counsel	4.022	.064	62.650	***	
Mvb_skilled	4.279	.057	74.575	***	
Mvb_knowskills	4.257	.057	74.174	***	

Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Mentoring1	<-->	SE_Data1	.019	.030	.625	.532	
SE_Culture1	<-->	Mentoring1	.080	.030	2.624	.009	
Mentoring1	<-->	SE_Enactment1	.043	.027	1.614	.107	
SE_Culture1	<-->	SE_Data1	.183	.021	8.517	***	
SE_Data1	<-->	SE_Enactment1	.177	.021	8.602	***	

			Estimate	S.E.	C.R.	P	Label
SE_Culture1	<-->	SE_Enactment1	.188	.021	8.977	***	

Correlations: (Group number 1 - Default model)

			Estimate
Mentoring1	<-->	SE_Data1	.043
SE_Culture1	<-->	Mentoring1	.179
Mentoring1	<-->	SE_Enactment1	.110
SE_Culture1	<-->	SE_Data1	.642
SE_Data1	<-->	SE_Enactment1	.712
SE_Culture1	<-->	SE_Enactment1	.735

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
Mentoring1	.683	.089	7.674	***	
SE_Data1	.278	.029	9.481	***	
SE_Enactment1	.223	.027	8.272	***	
SE_Culture1	.292	.028	10.447	***	
e3	.857	.079	10.800	***	
e5	.500	.050	9.986	***	
e7	.366	.040	9.220	***	
e19	.115	.012	9.551	***	
e20	.079	.011	7.362	***	
e22	.091	.011	8.490	***	
e23	.157	.014	10.998	***	
e28	.138	.013	10.770	***	
e29	.126	.012	10.416	***	
e30	.104	.011	9.857	***	
e31	.122	.012	10.429	***	
e32	.179	.016	11.259	***	
e15	.127	.012	10.867	***	
e17	.052	.007	7.343	***	
e16	.144	.013	11.123	***	
e18	.064	.008	8.249	***	
e42	.309	.033	9.317	***	
e43	.367	.037	9.844	***	
e40	.206	.023	8.911	***	
e41	.602	.057	10.531	***	

Minimization History (Default model)

Iteration		Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
0	e	9		-.881	9999.000	4009.488	0	9999.000
1	e*	12		-.316	4.035	1657.982	20	.310
2	e*	3		-.133	.938	941.574	5	.902
3	e	1		-.053	.712	562.586	5	.828
4	e	0	4764.333		.667	410.916	6	.820
5	e	0	1012.711		.761	378.265	2	.000
6	e	0	1175.230		.186	370.694	1	1.101
7	e	0	1214.047		.049	370.445	1	1.031
8	e	0	1213.355		.003	370.444	1	1.002
9	e	0	1211.671		.000	370.444	1	1.000

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	66	370.444	164	.000	2.259
Saturated model	230	.000	0		
Independence model	20	4113.351	210	.000	19.587

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.910	.885	.948	.932	.947
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.781	.711	.740

Model	PRATIO	PNFI	PCFI
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	206.444	154.394	266.222
Saturated model	.000	.000	.000
Independence model	3903.351	3698.639	4115.350

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	1.195	.666	.498	.859
Saturated model	.000	.000	.000	.000
Independence model	13.269	12.591	11.931	13.275

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.064	.055	.072	.005
Independence model	.245	.238	.251	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	502.444	512.036		
Saturated model	460.000	493.426		
Independence model	4153.351	4156.257		

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.621	1.453	1.814	1.652
Saturated model	1.484	1.484	1.484	1.592
Independence model	13.398	12.738	14.082	13.407

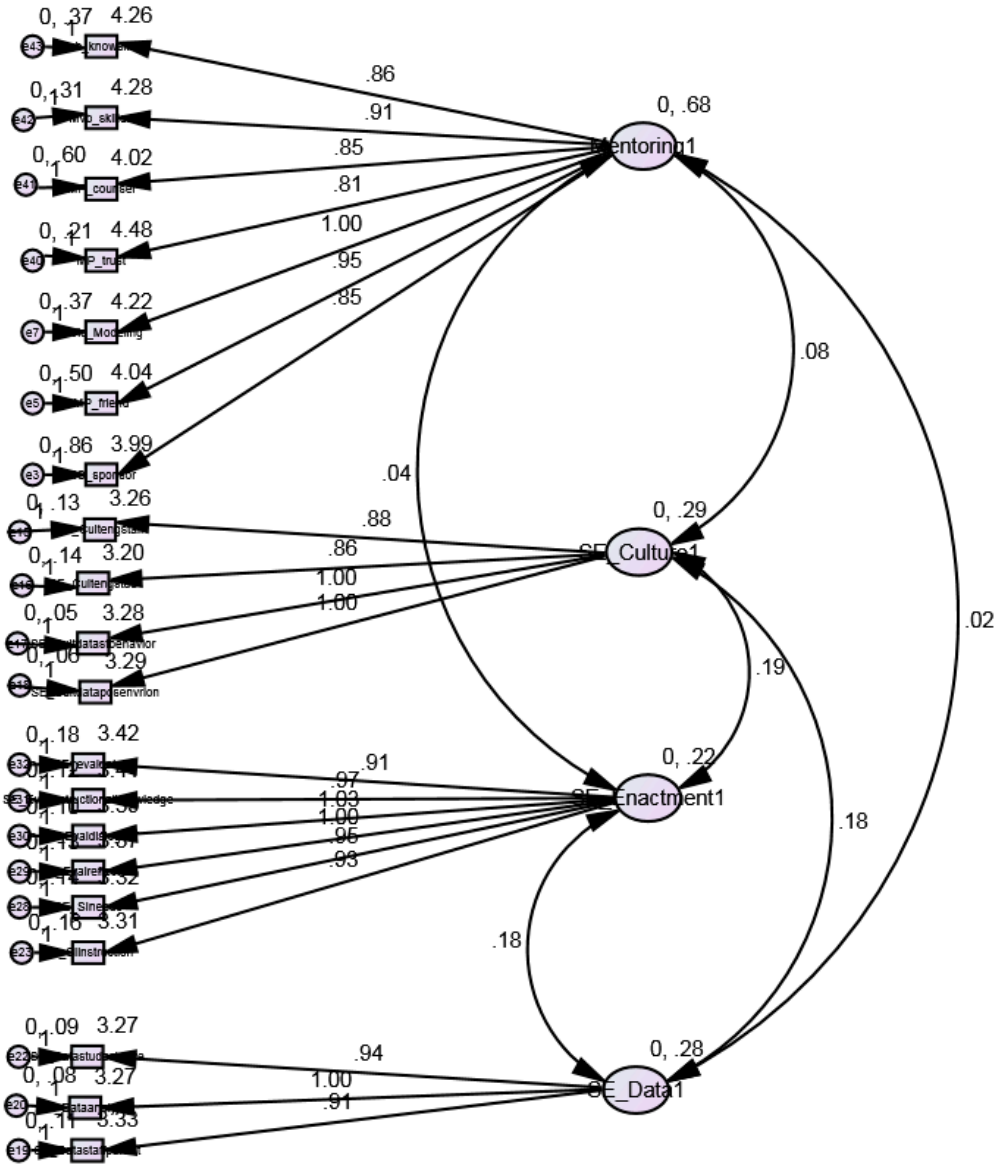
HOELTER

Model	HOELTER .05	HOELTER .01
Default model	164	175

Model	HOELTER .05	HOELTER .01
Independence model	19	20

Execution time summary

Minimization: .093
Miscellaneous: .838
Bootstrap: .000
Total: .931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Analysis Summary

Date and Time

Date: Monday, February 02, 2015
Time: 9:52:50 AM

Title

2-1-15 final sem with estimates output: Monday, February 02, 2015 9:52 AM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.
Sample size = 311

Variable Summary (Group number 1)

Your model contains the following variables (Group number 1)

Observed, endogenous variables
SE_Datastaffparent
SE_Dataanalysis
SE_Datastudachieve
SE_Cultengstaff
SE_Cultengstud
SE_Cultdatastbehavior
SE_Cultdataposenviron
SE_SIneeds
SE_evaluate
SE_Evalinstructknowledge
SE_Evalreflection
SE_Evaldialogue
SE_SIinstruction
MP_friend
MVic_Modeling
MC_sponsor
Mvb_skilled
Mvb_knowskills
MP_counsel
MP_trust
Observed, exogenous variables

Suburban
Doctorate
Elem
Tenure
Unobserved, endogenous variables
SE_Data1
SE_Culture1
Mentoring1
SE_Enactment1
Unobserved, exogenous variables
e20
e22
e15
e16
e17
e18
D1
D2
D4
e28
e32
e31
e29
e5
e7
e3
e40
e41
e42
e43
e19
e30
D3
e23

Variable counts (Group number 1)

Number of variables in your model:	52
Number of observed variables:	24
Number of unobserved variables:	28
Number of exogenous variables:	28
Number of endogenous variables:	24

Parameter Summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	28	0	0	0	0	28
Labeled	0	0	0	0	0	0
Unlabeled	26	0	28	4	20	78
Total	54	0	28	4	20	106

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments:	324
Number of distinct parameters to be estimated:	78
Degrees of freedom (324 - 78):	246

Result (Default model)

Minimum was achieved

Chi-square = 811.117
Degrees of freedom = 246
Probability level = .000

Group number 1 (Group number 1 - Default model)

Estimates (Group number 1 - Default model)

Scalar Estimates (Group number 1 - Default model)

Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Mentoring1	<---	Suburban	.316	.108	2.920	.003	
SE_Culture1	<---	Mentoring1	.161	.041	3.940	***	
SE_Data1	<---	Mentoring1	.099	.043	2.294	.022	
SE_Enactment1	<---	Mentoring1	.109	.038	2.900	.004	

			Estimate	S.E.	C.R.	P	Label
SE_Data1	<---	Suburban	-.164	.065	-2.514	.012	
SE_Culture1	<---	Doctorate	.238	.102	2.327	.020	
SE_Data1	<---	Doctorate	.235	.106	2.216	.027	
SE_Enactment1	<---	Doctorate	.271	.094	2.867	.004	
SE_Data1	<---	Elem	.197	.063	3.134	.002	
SE_Culture1	<---	Tenure	.075	.025	2.981	.003	
SE_Datastaffparent	<---	SE_Data1	.859	.051	16.741	***	
SE_Dataanalysis	<---	SE_Data1	1.000				
SE_Datastudachieve	<---	SE_Data1	.906	.050	18.078	***	
SE_Cultengstaff	<---	SE_Culture1	.887	.047	18.954	***	
SE_Cultengstud	<---	SE_Culture1	.864	.049	17.778	***	
SE_Cultdatastbehavior	<---	SE_Culture1	1.000				
SE_Cultdataposenviron	<---	SE_Culture1	1.005	.041	24.415	***	
SE_evaluate	<---	SE_Enactment1	.902	.067	13.389	***	
SE_Evalinstructknowledge	<---	SE_Enactment1	.963	.062	15.462	***	
SE_Evaldialogue	<---	SE_Enactment1	1.023	.062	16.513	***	
SE_Evalreflection	<---	SE_Enactment1	1.000				
SE_SIneeds	<---	SE_Enactment1	.931	.064	14.626	***	
SE_SIinstruction	<---	SE_Enactment1	.912	.066	13.871	***	
MP_friend	<---	Mentoring1	.948	.072	13.172	***	
MVic_Modeling	<---	Mentoring1	1.000				

			Estimate	S.E.	C.R.	P	Label
MC_sponsor	<---	Mentoring1	.849	.083	10.270	***	
Mvb_skilled	<---	Mentoring1	.907	.062	14.589	***	
Mvb_knowskills	<---	Mentoring1	.861	.063	13.643	***	
MP_counsel	<---	Mentoring1	.848	.073	11.638	***	
MP_trust	<---	Mentoring1	.812	.053	15.284	***	

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
Mentoring1	<---	Suburban	.186
SE_Culture1	<---	Mentoring1	.252
SE_Data1	<---	Mentoring1	.152
SE_Enactment1	<---	Mentoring1	.191
SE_Data1	<---	Suburban	-.149
SE_Culture1	<---	Doctorate	.131
SE_Data1	<---	Doctorate	.128
SE_Enactment1	<---	Doctorate	.168
SE_Data1	<---	Elem	.181
SE_Culture1	<---	Tenure	.168
SE_Datastaffparent	<---	SE_Data1	.794
SE_Dataanalysis	<---	SE_Data1	.908
SE_Datastudachieve	<---	SE_Data1	.847
SE_Cultengstaff	<---	SE_Culture1	.800
SE_Cultengstud	<---	SE_Culture1	.773
SE_Cultdatastbehavior	<---	SE_Culture1	.917
SE_Cultdataposenviron	<---	SE_Culture1	.909
SE_evaluate	<---	SE_Enactment1	.712
SE_Evalinstructknowledge	<---	SE_Enactment1	.797
SE_Evaldialogue	<---	SE_Enactment1	.838
SE_Evalreflection	<---	SE_Enactment1	.807
SE_SIneeds	<---	SE_Enactment1	.763
SE_SIinstruction	<---	SE_Enactment1	.733
MP_friend	<---	Mentoring1	.747
MVic_Modeling	<---	Mentoring1	.810
MC_sponsor	<---	Mentoring1	.609

			Estimate
Mvb_skilled	<---	Mentoring1	.805
Mvb_knowskills	<---	Mentoring1	.766
MP_counsel	<---	Mentoring1	.675
MP_trust	<---	Mentoring1	.834

Means: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
Suburban	.423	.028	15.000	***	
Doctorate	.096	.017	5.708	***	
Tenure	3.546	.069	51.427	***	
Elem	.537	.028	18.961	***	

Intercepts: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
MC_sponsor	3.868	.082	47.447	***	
MP_friend	3.903	.078	50.024	***	
MVic_Modeling	4.081	.078	52.544	***	
SE_Datastaffparent	3.269	.050	64.863	***	
SE_Dataanalysis	3.195	.055	57.577	***	
SE_Datastudachieve	3.201	.052	61.922	***	
SE_Cultengstaff	2.990	.087	34.393	***	
SE_Cultengstud	2.935	.085	34.407	***	
SE_Cultdatastbehavior	2.974	.096	31.096	***	
SE_Cultdataposenviron	2.979	.096	30.956	***	
SE_SIinstruction	3.278	.035	93.354	***	
SE_SIneeds	3.281	.034	95.135	***	
SE_Evalreflection	3.332	.035	94.775	***	
SE_Evaldialogue	3.344	.035	96.174	***	
SE_Evalinstructknowledge	3.373	.034	98.400	***	
SE_evaluate	3.385	.036	94.939	***	
Mvb_skilled	4.150	.071	58.758	***	
Mvb_knowskills	4.134	.069	59.479	***	
MP_counsel	3.901	.075	51.964	***	
MP_trust	4.359	.062	70.668	***	

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
Suburban	.244	.020	12.390	***	

	Estimate	S.E.	C.R.	P	Label
D1	.678	.088	7.716	***	
Doctorate	.088	.007	12.410	***	
Elem	.249	.020	12.450	***	
Tenure	1.465	.118	12.410	***	
D2	.257	.025	10.098	***	
D4	.213	.026	8.267	***	
D3	.270	.028	9.588	***	
e20	.063	.012	5.232	***	
e22	.096	.012	8.100	***	
e15	.127	.012	10.726	***	
e16	.145	.013	11.021	***	
e17	.055	.008	7.028	***	
e18	.061	.008	7.484	***	
e28	.141	.013	10.611	***	
e32	.180	.016	11.101	***	
e31	.121	.012	10.104	***	
e29	.121	.012	9.964	***	
e5	.501	.050	10.005	***	
e7	.369	.040	9.270	***	
e3	.858	.079	10.806	***	
e40	.314	.033	9.387	***	
e41	.367	.037	9.860	***	
e42	.604	.057	10.545	***	
e43	.203	.023	8.881	***	
e19	.127	.013	9.724	***	
e30	.101	.011	9.319	***	
e23	.163	.015	10.886	***	

Minimization History (Default model)

Iteration		Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
0	e	9		-.767	9999.000	4138.998	0	9999.000
1	e	8		-.329	3.814	2023.200	20	.333
2	e*	4		-.724	1.245	1311.104	5	.714
3	e	1		-.061	.559	1001.514	5	.859

Iteration		Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
4	e	0	2223.517		.920	834.000	6	.860
5	e	0	1913.252		.644	833.154	1	.034
6	e	0	1839.416		.147	814.623	1	1.162
7	e	0	1797.104		.133	811.450	1	1.173
8	e	0	1784.942		.047	811.122	1	1.077
9	e	0	1755.281		.007	811.117	1	1.011
10	e	0	1763.220		.000	811.117	1	1.000

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	78	811.117	246	.000	3.297
Saturated model	324	.000	0		
Independence model	24	4240.358	300	.000	14.135

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.809	.767	.859	.825	.857
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.820	.663	.702
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	565.117	482.583	655.246
Saturated model	.000	.000	.000
Independence model	3940.358	3733.530	4154.483

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.617	1.823	1.557	2.114
Saturated model	.000	.000	.000	.000
Independence model	13.679	12.711	12.044	13.402

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.086	.080	.093	.000
Independence model	.206	.200	.211	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	967.117	980.801		
Saturated model	648.000	704.842		
Independence model	4288.358	4292.569		

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	3.120	2.853	3.410	3.164
Saturated model	2.090	2.090	2.090	2.274
Independence model	13.833	13.166	14.524	13.847

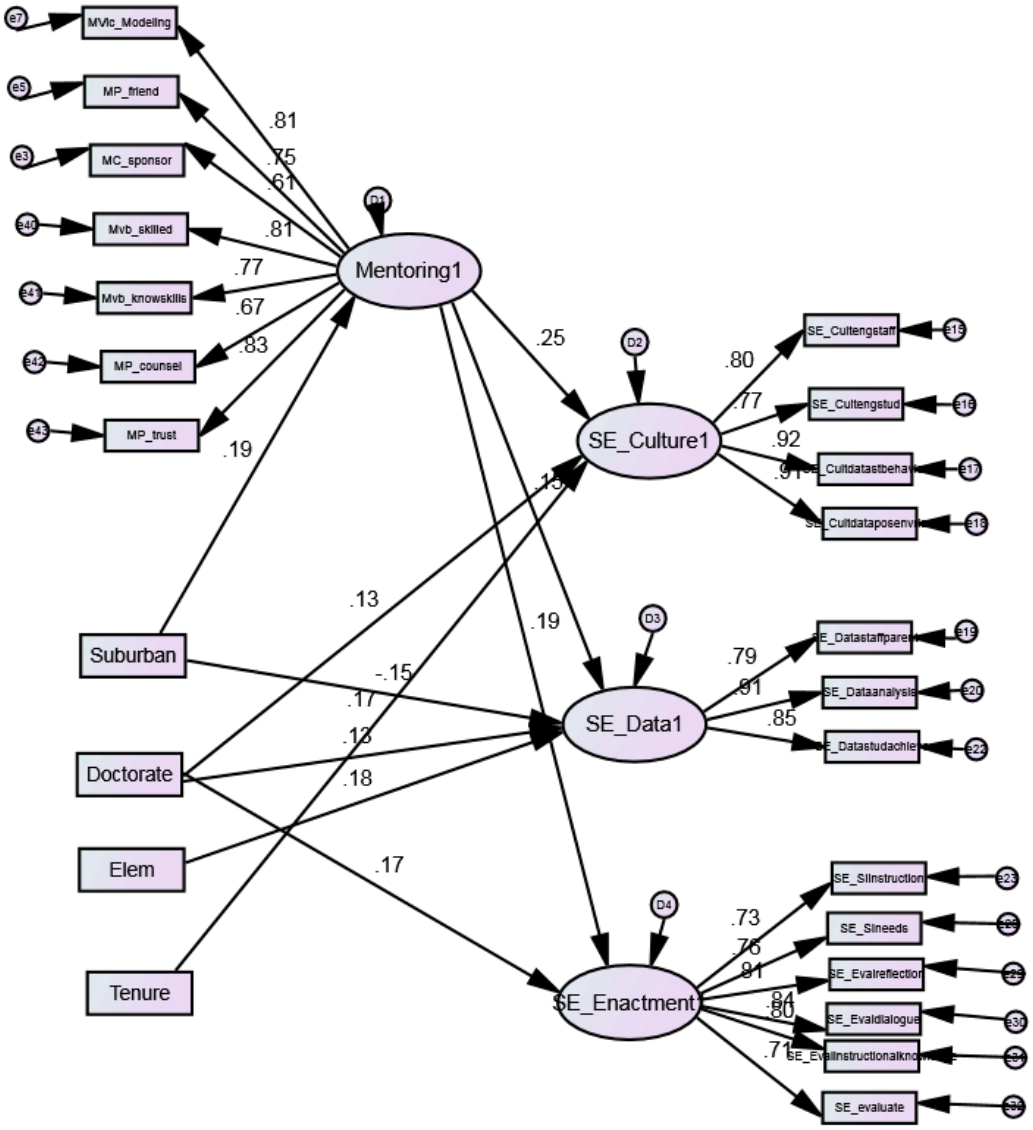
HOELTER

Model	HOELTER .05	HOELTER .01
Default model	109	115
Independence model	25	27

Execution time summary

Minimization: .125
Miscellaneous: .468
Bootstrap: .000

Total: .593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