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Investigating Principals' Instructional Philosophical Orientation and Their Students' Level of Engagement A Case Study

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Investigating Principals' Instructional Philosophical Orientation and Their Students' Level of Engagement
A Case Study

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By
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SIGNATURE PAGE

I hereby affirm that the following project meets the high academic standards for original scholarship and creative work established by my discipline, college, and the Graduate College of Marshall University. With my signature, I approve the manuscript for publication.

Project Title: Investigating Principals' Instructional Philosophical Orientation and Their Students' Level of Engagement A Case Study

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DEDICATION

This dissertation is dedicated to the principals in Kanawha County Schools. They work tirelessly every day to move their schools forward by working with teachers to engage all students. It is my hope that this research will support and inform their instructional decision making as school leaders and thereby improve teaching and learning through high levels of student engagement in Kanawha County Schools.

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ABSTRACT

The purpose of this case study was to investigate principals' instructional philosophical orientations (IPOs) and the students' level of engagement in Kanawha County Schools (KCS). The district was in the fourth year of analyzing student well-being, hope, and engagement data through Gallup Surveys (Gallup, 2014) in an effort to help move the system forward. This study considered the differences between the principal and student engagement levels by analyzing the principals' instructional philosophical orientation holistically and within each of four families of instructional models. This study described the principals' preference for the instructional models and compares these preferences to student engagement levels in their schools.

The principals' IPO was measured through a profile created from the results of the 28 item *Instructional Philosophy Survey*. Forty elementary and 24 secondary principals were included in the data analysis.

Kanawha County School elementary students were found to be more engaged than KCS secondary students. A large effect size was found with statistical significance. Mean percent levels of student engagement were compared to all principals' full IPO profiles with no statistical significance. However, when the principals' IPO levels were considered by each of the instructional models to the mean percent levels of student engagement, significance was attained with gender, the personal instructional model and the social model.

More research on comparing elementary and secondary engagement levels with a larger population may provide additional data that would add to the knowledge base on student engagement. A study related to the male and female principals' knowledge and understanding of different instructional models may prove beneficial and provide further insight into the principals' philosophical orientation.

CHAPTER ONE

INTRODUCTION

National and state level education agendas are moving toward holding educators more accountable for individual contributions to student growth (West Virginia Department of Education Battelle For Kids Training Website, 2015). In West Virginia, all educators are currently responsible for school-wide growth data. This school-wide growth score is an aggregate score reflecting the growth of all students in the building in the areas of mathematics and Reading/English Language Arts. Every educator (administrators and teachers) in a school receives the same school-wide growth score as part of an annual evaluation.

Starting in the 2015-2016 school year, educators will be held accountable for individual student learning growth (West Virginia Department of Education Battelle For Kids Training Website, 2015). States surrounding West Virginia are already factoring in student growth as a component of an educators' yearly evaluation. Kentucky and Maryland calculate 50% of a teacher's evaluation from student growth scores. West Virginia is moving in this direction with planned trainings for roster verification. The roster verification process requires teachers to verify rosters or lists of assigned students in mathematics and English classes. This verification includes a percentage value that represents the amount of time a teacher works with a student in either mathematics or English class.

The state-wide roster verification trainings that were conducted during the spring of 2015 allowed educators the opportunity to validate the student data that affects their annual evaluations. Through roster verification, principals and teachers identify assigned students for accountability purposes on summative assessments.

This era of increased accountability for student achievement and personal responsibility for student growth promotes a continued pursuit of school improvement efforts that directly increase student learning. When considering the administration of schools, research has shown for decades that effective school leadership matters (Leithwood, Louis, Anderson, & Wahlstrom, 2004).

A meta-analysis of 35 years of research shows that the principal has an effect on student achievement (Marzano, Pickering, & Heflebower, 2010). It is generally agreed upon that effective or successful leadership is critical to moving a school forward. Barth (1990) proclaimed that when you find a good school, you will most certainly find a good principal in the leadership role. A significant relationship has been shown to exist between the principal and student achievement (Quinn, 2002). Determining the direct link between a principal's attributes and student success is difficult to unpack and define.

Although we have abundant data about this relationship, the effect of the school principal on learning is a highly complex concept and can be difficult to sort out (Leithwood et al., 2004). Research has attempted to measure the direct effects of the principal's leadership on student learning with indirect results. It is only when the investigation begins with a chain of variables from the principal to student achievement that we are better able to uncover how a school leader contributes to student learning (Leithwood et al., 2004; Quinn, 2002).

Studies show that principals have an effect on student achievement (Leithwood et al., 2004; Louis, Leithwood, Wahlstrom, & Anderson, 2010). Evidence has shown school leaders shape the school in two distinct ways. The principal assists the school community through establishing a direction and influencing stakeholders to move in an agreed upon direction. The judicious choices that the principal makes define the school's focus. In a study conducted in

2004 on principal leadership in 38 secondary schools, Dinham (2004) found that what the principal knows, understands and does is central to students and their learning.

The Principal and Student Engagement

In his work with the Gallup Poll and student engagement, Gordon (2013) suggests that hope for higher student achievement levels starts with the principal. This work proposes a linkage from the principal's leadership to student achievement through teacher and student engagement. Further, the student learning climate where principals hold everyone to a high standard encourages teachers to take risks, promotes a strong vision and mission, and increases student engagement and student learning. Gordon submits that before gains are made in student achievement low student engagement must be addressed.

Findings from the report *Principal Reflections on Student Engagement: Using the Gallup Student Poll* (2014) about five middle school principals included a perceived relationship between student engagement and academic success. One principal stated a lack of concern regarding students' scores but more concern about students being engaged. In other words, the focus was on high levels of engagement that result in high levels of learning. All five principals strongly believe that student engagement is critical to student achievement and success. Research to support the beliefs of these five principals is found in the work of David Quinn (2002). Quinn concludes in his study on leadership behaviors across 24 schools that strong leadership promotes student engagement, which in turn is the most effective means to increase student achievement.

In the paper *Principals as Leaders in a Culture of Change* Fullan (2002) contends that leaders must do more than promote effective instructional leadership. Principals as instructional leaders will take us only so far in school improvement. We need fundamental transformation in

the learning culture of the school. Principals must have a number of characteristics including a moral purpose and a focus on relationship building. The leader must be viewed as much more than an instructional leader. His value system and beliefs are paramount. Gordon (2013) reminds us that each school's environment influences student engagement and student performance. The fact that some leaders believe this more than others produces a wide variation in engagement levels.

Philosophy of Education

The chain from the principal's decision making and influence to student achievement is affected by a number of variables (Leithwood et al., 2004; Quinn, 2002). One significant variable is the principal's philosophy of education (Hewitt, 2006). Hewitt describes the term philosophy in two distinct phrases: (a) a way of thinking and (b) a school of thought. Further, a philosophical position is similar to their curriculum perspective or orientation. The lens with which a person views the larger world of education is considered a philosophical set or orientation. Hewitt describes philosophy as what we think and why we think that way about aspects of schooling and curriculum.

Ornstein (Ornstein, 1991; Ornstein & Hunkins, 2012) describes philosophy as the lens through which we view schools and education, a set of beliefs and values about schooling. Our philosophy answers such questions as the purpose of schools, how children learn, what curriculum materials to use and broader issues such as the schools' mission and goals and what it means to be educated. Ornstein and Hunkins (2012) reported that an educator's philosophy of education affects his decision-making.

Dewey (1916) believed philosophy to be *all-encompassing* of the educational process. It is the basis for every choice school leaders make. It is the framework by which educators organize schools and classrooms.

The complexity of philosophical beliefs, values, and attitudes that exist in a school play a critical role in the development of successful schools (Conti, 2007; MacNeil, Prater, & Busch, 2009). Conti (2007) developed a survey instrument to determine an educator's preference for one of the major schools of philosophical thought. He determined that when we recognize why we do what we do in our educational practice, we are better able to consider alternatives.

Analyzing our educational foundations ultimately empowers us to make better decisions. Reck (2001) found through her dissertation work that exemplary school principals at all programmatic levels believe all decisions and actions result from doing what is in the best interest of students. What the principal believes is meeting the best interest and needs of students is valuable information. The leader's value system is as important as both the attributes and outcomes of effective school leadership (Harris, Cavanagh, Reynolds, & Giddings, 2004).

The four major educational philosophies that have influenced teaching and learning in the United States are: Perennialism, Essentialism, Progressivism, and Reconstructionism (Ornstein, 1991; Ornstein & Hunkins, 2014). These four theoretical orientations are aligned with three philosophical orientations: Realism, Idealism, and Pragmatism (Diehl, 2006). Each philosophy can be discussed in terms of the philosophical base, the instructional objectives, the role of the teacher, curriculum focus, and the essential knowledge and skills.

Educators do not generally adopt a single philosophy exclusively (Diehl, 2006; Ornstein, 1991; Ornstein & Hunkins, 2012). Rather, parts of two or more philosophies are combined to form one's own way of thinking regarding curriculum and schooling.

A traditional philosophy is comprised of Perennialism and Essentialism whereby the teacher is the authority on the content (Diehl, 2006; Ornstein, 1991; Ornstein & Hunkins, 2012). The teacher is the keeper of the knowledge and supplies it to the students. The teacher provides direct instruction. Educating students involves control and restraint. Conformity and compliance with authority prepares students for successful transition to adulthood.

Contemporary philosophy is made up of Progressivism and Reconstructionism (Diehl, 2006; Ornstein, 1991; Ornstein & Hunkins, 2012). Education is about creative self-learning and the emphasis is on student-centered interests and needs. The teacher acts as a facilitator of learning and students can learn independent of the teacher in a more inquiry-based atmosphere**.**

Related theories of learning or psychological orientations are grouped along a continuum from traditional and conservation to contemporary and liberal (Cohen, 1999). Information processing and Behaviorism are found to be more traditional. Cognitivism and Humanism fall in the contemporary category (Diehl, 2006; Ornstein, 1991; Ornstein & Hunkins, 2012). Teaching methods from traditional to contemporary are described as lecture, discussion, mastery of facts and demonstrations to social experience and personal choice.

Research on direct instruction and inquiry-based teaching and learning abounds (Education Consumers Foundation, 2011; Darling-Hammond et al, 2008). Most researchers report favorably for each method in numerous studies. Researchers identify both strengths and weaknesses of each model. The inquiry-based method is sometimes favored due to a more child-centered approach. A thorough examination of each methodology reveals that although inquiry is often favored by students, implementation does not always occur in the classroom.

Effective leadership of teacher learning and student learning is contingent on the philosophical orientation of the principal (Harris et al, 2004). The philosophical orientation is

developed through typology of educational philosophies, philosophical viewpoints, and professional foci. For this study, the principal's instructional philosophical orientation defined by his/her philosophy of teaching and learning was examined.

Teaching Philosophies

Research shows that educational philosophies and teaching philosophies are related yet different concepts (Conti, 2004). Educational philosophies are defined as an educator's belief about education and associated concepts (Kovacevic, 2012). A principal's teaching or instructional philosophy is not only about beliefs and values but also about the teacher's behaviors in the classroom (Heimlich & Norland, 2002; Kovacevic, 2012). A teaching or instructional philosophy can be described as beliefs put into practice by including concrete examples of what takes place in the classroom.

Kovocevic (2012) describes teaching styles, instructional methods or models as being divided into two groups: teacher centered or student centered. Joyce, Weil, and Calhoun (2009) further divide instructional models within four families: 1) personal source, 2) social interaction, 3) information processing and 4) behavioral modification.

This study examined a principal's preference for these teaching models as part of determining their instructional philosophy. A survey was conducted to examine a principal's instructional philosophical orientation through personal beliefs related to teaching and learning. Instructional philosophy data was gained through the work of Dr. Terry Armstrong (2014). Armstrong extrapolated Joyce, Weil, and Calhoun's (2009) teaching models information to create a *Four Families Teaching Philosophy Survey* renamed for this study the *Instructional Philosophy Survey*. It provided insight into the principal's instructional philosophical

orientation. This data was examined and considered in relation to the level of student engagement in each principal's school.

Student Engagement and Student Learning

If students are not engaged there is little chance of learning what the teacher is trying to convey. The National Research Council's Committee on Increasing High School Students' Engagement and Motivation to Learn (2004) determined that it is necessary to understand motivation and engagement as an important part of school improvement. Wade (2011) conducted a study on student engagement and academic performance in an international baccalaureate middle school program and found a positive association between engagement and performance.

Engagement is not easily defined (Mazano et al., 2011). Aspects to consider are emotions, interests, perceived importance, and perceptions of efficacy. According to Bowen (2003), students are more engaged when given a choice, when the work is meaningful, and when permitted to share the results with others. These features parallel the Gallup (2012) engagement poll that recognizes enthusiasm for school and students getting to do what they do best. The working definition of student engagement in this study involved the non-cognitive constructs of involvement in and enthusiasm for school, reflecting how well students are known and how often they get to do what they do best.

Keeping this Gallup definition of student engagement in mind, Gallup researchers shared unpublished raw data in the *State of America's Schools* (2014). A Gallup study (2010) of 148 schools found higher levels of student engagement were predictors of student achievement. Further, a 2009 Gallup study of 160 schools found a six-point increase in reading achievement

and an eight point increase in math achievement associated with levels of increased student engagement.

Findings from McClenney, Marti, and Adkins (2009) from more than 20 years of research show that the more actively engaged students are with teachers, other students, and the subject matter, the more students learn. These research results confirm that student engagement is a precursor for academic achievement. Investigating the relationship between the school leader's beliefs about student engagement will help add to the literature on increasing student engagement and ultimately student learning.

Kanawha County Schools and Student Engagement

Kanawha County Schools (KCS) is the largest district in West Virginia with 68 elementary, middle, and high schools. The district partnered with Gallup starting in 2012 to survey all principals, teachers, and students on an annual basis to determine levels of hope, engagement, and well-being. Nationally, Gallup student polls have given students a voice (Gallup, 2012). This data gives school leaders information regarding how students feel regarding school and the effect on student engagement and achievement. The most recent Gallup student poll results revealed that 54% of Kanawha County students are engaged and excited about school. These students were involved in and enthusiastic about school. The remaining students were either just getting by (26%) or actively sabotaging (20%) the teaching and learning process.

KCS was in the fourth year of this partnership with Gallup. The primary application of the Gallup Student Poll is a measure of non-cognitive metrics that predict student success in academics. The poll measures student hope, engagement, and well-being.

For this study, school level student engagement data was calculated in mean percentage levels and Grand Mean. Each of the 68 schools received engagement percentage indicators: (a) engaged, (b) not engaged, or (c) actively disengaged. The Grand Mean was calculated through an item analysis on the Gallup survey. Annual data analysis in cooperation with Gallup allowed for the school leadership teams to gain insight into levels of student engagement in their own schools.

Kanawha County School administrators were committed to using this data to move the system forward in terms of increasing student achievement through student engagement (Kanawha County Schools Strategic Plan, 2015). This study hopes to describe the level of student engagement in Kanawha County Schools, describe the principals' instructional philosophical orientation (IPO), and determine the differences in student engagement due to the principals' Instructional Philosophical Orientation.

Statement of the Problem

High levels of student achievement escape many of our classrooms today (National Assessment of Educational Progress, 2013). Of all the factors that contribute to increased student learning, leadership is second only to classroom instruction (Leithwood et al., 2004; Louis et al., 2010). There is a great deal of research-based information available on educational leadership, yet we still have much to learn since leadership is a highly complex concept.

School leaders have considerable potential influence over the teaching and learning environment. Research is needed to unpack more specifically the variables that contribute to a leader's influence. One multifaceted variable is the principal's instructional philosophical orientation (IPO), which affects decision making and influences the whole school environment (Hewitt, 2006). Since high levels of student engagement are predictors of high levels of student

achievement (Gallup, 2012; McClenney, Marti, & Adkins, 2009; Quinn, 2002) and leadership is a strong factor in increasing student learning, it is worthy of study to consider the variables of leadership and student engagement. This study investigated the relationship and, more specifically, the differences between a principal's instructional philosophical orientation and the level of engagement of students in his/her school.

Purpose of the Study (Overarching Question)

The purpose of this study was to conduct an analysis of Kanawha County Schools (KCS) principals' instructional philosophical orientations and their students' level of engagement. The overarching question to be answered is "What is the relationship between principals' instructional philosophical orientation and the level of student engagement in their schools?"

Research Questions

1. What is the level of engagement of Kanawha County School's students?
2. What are the Instructional Philosophical Orientations (IPO) of the principals in Kanawha County Schools?
3. What is the difference in the level of student engagement due to the principal's IPO?
4. What is the difference between principals' IPO based upon principals' demographics (total years of experience as a principal, total years of experience as a principal in the current school, primary subjects taught as a teacher, and sex)?
5. What is the difference in the level of student engagement due to the principal's demographics?
6. What is the difference in the level of student engagement due to the interaction of IPO and demographics?

Justification for Study

School leaders positively affect student achievement (Leithwood et al., 2004; Louis et al., 2010). It is a complex process to determine exactly what school leaders think and do that causes gains in student achievement. When the research investigates the chain of variables from the principal to student learning, we are able to identify more specifically what the principal thinks and does that makes a difference in student learning. Increases in student engagement result in higher student achievement (Gordon, 2013; Quinn, 2002). There is evidence that suggests *the tasks* school leaders should pay the most attention to within their schools are those that affect change (Leithwood et al., 2004; Louis et al., 2010).

A principal's decision-making practices influence stakeholders and ultimately affect student learning. It is important to understand a great deal more about these complex, critical elements. Fisher (2012) agrees in his dissertation on the principal's beliefs informing leadership of students with disabilities. Fisher asserts that future research should focus on the relationship between a principal's beliefs about instructional leadership and the level of success of students with disabilities.

A six year comprehensive study on linking leadership to student learning, *Learning from Leadership* (Louis et al., 2010), added greatly to the knowledge base. The study sought to clarify that leadership practices influence the quality of teaching and learning. According to Gordon (2006) in his book *Building Engaged Schools* studies show leadership has an effect on student engagement. Gordon further asserts that student engagement is a predictor of increased student learning.

Kanawha County School administrators are committed to engaging students. The district is analyzing their engagement data to help move the system forward. The leadership hopes to

increase student achievement through increased student engagement (Kanawha County Schools Strategic Plan, 2015). This research considers the principals and their student's level of engagement.

This study analyzed the differences between the principal and student engagement at a more fine-grained level of understanding by considering principals' instructional philosophical orientation. This study attempted to uncover the principal's beliefs and add to the literature on the essential ingredients of successful leaders (Leithwood et al., 2004; Louis et al., 2010) and their relationship to student engagement levels.

Delimitations

This study is limited to all principals in the Kanawha County School District in West Virginia. The population included 68 principals who participated in the Gallup Engagement Polls during the 2014-2015 school year. The programmatic levels were comprised of 44 elementary schools, 13 middle schools, eight high schools, two Career Tech Centers and one Alternative School.

Operational definitions

The following variables were operationally defined for use in this study:

Student engagement – is the non-cognitive construct of involvement in and enthusiasm for school reflecting how well students are known and how often they get to do what they do best (Gallup, 2012). Student engagement was measured through the use of the 2014-2015 Kanawha County Schools Gallup student poll. The survey asked students to respond to seven items on a scale from 1-5, strongly disagree to strongly agree. Results were reported using percentage and Grand Mean data. Results were reported at the national, county, elementary and secondary levels.

Percent engagement – is the percentage of students engaged according to the 2014-2015 Kanawha County Gallup survey results. Percent engagement is reported as the mean percent engaged. Results were reported at the national, county, elementary and secondary levels.

Grand Mean - is reported as the overall item mean for Gallup, district, school, grade level and for each of the seven surveyed items on the Kanawha County Schools 2014-2015 student Gallup poll. Results were reported at the national, county, elementary and secondary levels.

Instructional Philosophical Orientation (IPO) – is the orientation that encompasses the school of thought, philosophies, values and beliefs relating to schooling and curriculum (Harris et al., 2004). IPO includes the definition of teaching philosophy, which is the beliefs about teaching and learning and how these beliefs are put into practice by including concrete examples of what takes place in the classroom (Armstrong, 2014; Conti, 2004; Kovacevic, 2012). The principals' IPO is measured through a profile created as a result of the *Instructional Philosophy Survey* (Armstrong, 2014). The survey includes three parts: Part A includes 28 items with a response scale from little agreement to moderate agreement and strong agreement. Part B asks for demographic data and Part C includes a comments section.

IPO Four Family Principal Profile – is the profile created from the results of Part A on the Armstrong (2014) survey called the *Instructional Philosophy Survey*. This profile included four model families of instructional philosophy: Personal Source, Social Interaction, Informational Processing, and Behavioral Systems. The Personal Source group highlights the importance of the student to create meaning and direction for their own lives. Social Interaction is focused on the development of living in a community or democratic setting. Information processing is the biggest family of models, focused on ways to learn and organize information through problem solving. Behavior modification concentrates on observable objectives, skill building, and

behavioral modification. The four families are comprised of information related to the preferred learning environment, including the teacher's behavior when that model is being used. The models are often used in lesson planning and designing curriculum (Joyce, Weil, & Calhoun, 2009). For this study, each *family of models* is simply referred to as the *instructional model*. The IPO profile is reported from low preference (L) to high preference (H) for the individual model. The higher the preference for the model, the more committed the principal is to the instructional tasks of that family of models. Each profile is reported as four levels of preference such as LLHH. A total of 16 possible profile combinations were created for the principals' four family profile and grouped into three categories: majority high preference for the models, equally high/low preference for the models, or majority low preference for the models.

Total Years of Experience as a Principal – the principal's total years of experience as a principal as measured by a response to Part B on the *Instructional Philosophy Survey*.

Total Years of Experience as a Principal in their Current School – the principal's total years of experience as a principal in the current school as measured by a response to Part B on the *Instructional Philosophy Survey*.

Subjects Taught as a Teacher – the principal's primary subjects taught as a teacher as measured by a response to Part B on the *Instructional Philosophy Survey*. The principal was instructed to check all that apply from a list of subjects. There was a blank provided for other subjects not listed on the survey.

Sex - principals' sex as measured by the abbreviations recorded on the *Instructional Philosophy Survey*.

Comments – comments section provides the principals with the opportunity to remark on the topic, survey, or other on Part C of the *Instructional Philosophy Survey*.

Organization of Study

The first chapter of this study includes an introduction, theoretical discussion and statement of the problem, purpose of the study (overarching questions), delimitations and limitations, and operational definitions. Chapter two provides a review of the literature on the principal as the instructional leader, instructional models, and student engagement. Chapter three includes the research methods and data collection procedures that address the research questions. Chapter four outlines findings. Chapter five presents the study summary with conclusions, implications, and recommendations for further research.

CHAPTER TWO

LITERATURE REVIEW

This chapter provides a review of the literature relevant to a principal's instructional philosophy (IPO) and student engagement. Part one presents a literature review on the principal as the leader of learning. Part two provides a review of instructional models of teaching. Part three provides research on the principal's link to student engagement.

Principal as the Leader of Learning

Educators and policy makers across the country are challenging student academic achievement levels in the United States (Shelton, 2011). Working together to transform schools and prepare students for a global competition for jobs is the objective. A quick Internet search of effective leadership or school turn-around shows the increased focus on the leader's role in the school. Documented evidence demonstrates that schools improve their academic achievement when there is an effective principal leading the charge (Wallace Foundation, 2012).

Leading in an Era of Accountability

The accountability movement has pushed the principal further into the role of instructional leader (Finkel, 2012). The 2010 U.S. Department of Education's $4.35 billion Race to the Top Grant influenced states to rethink (a) preparation programs for administrators, (b) preparation programs for teachers, and (c) evaluation systems (Shelton, 2011). Twelve states passed new evaluation system bills in response to the Race to the Top legislation during the 2010 legislative sessions and more states followed in the next few years (Maine Legislation, 2012).

States are implementing strategies to improve educational leadership programs in response to federal accountability requirements (Shelton, 2011). Twenty-three states enacted 42 laws in relation to school leadership. The goal is to ensure school administrators have the

knowledge and skills to influence, direct, and guide schools toward increasing academic achievement for all children.

Policy makers are defining the responsibilities of school leaders through refining standards of what the principal should know and be able to do to promote increased student achievement. States are establishing strong guidelines for the transformation of the role of the principal from building manager to instructional leader. Shelton (2011) categorizes the areas addressed in the legislation passed under the following topics: (a) roles and responsibilities, (b) recruitment and selection, (c) preparation programs and accreditation, (d) licensure and certification, (e) mentoring, (f) professional development, (g) authority, (h) evaluation, (i) compensation and incentives, (j) data systems, and (k) educational governance structure.

The instructional leader has been the target of legislative action in recent years (Finkel, 2012; Shelton, 2011). Mentoring programs are established to assist a novice principal to develop into an effective instructional leader. Laws related to high quality professional development are being established to strengthen the leader's ability to advance curriculum and instruction. In the category of authority, principals are being held accountable for student achievement, attendance, graduation rates, and teacher improvement. Principals are evaluated using performance based measures of student achievement growth and other student data such as attendance rate.

Principals are expected to lead a school to unprecedented levels of student achievement in a system where all children have the opportunity to be educated to the same high levels of rigor (Mendels, 2012; Tucker & Codding, 2002). There are challenges in reaching high levels of achievement for all students. Students with different socioeconomic backgrounds, English as a second language, and those with significant cognitive delays are especially challenging. The school leader is facing confounding trials in an ever-changing educational landscape.

Leading in the era of accountability, the principal's role has changed significantly from a building manager to an instructional leader. This increased accountability for student achievement growth placed on the principal promotes the continued pursuit of high yield practices that increase student success in school.

Leading Learning

The original *principal* was identified as a lead teacher. This mid 1800's principal teacher was focused on teaching and learning and was known as the local expert (Pierce, 1935). Principals were chosen for this role because of knowledge of teaching methods and characteristics of children in addition to the ability to handle daily problems of the school. The majority of time was spent teaching a group of students but also mentoring pupil teachers, and completing simple administrative duties. This concept of a head teacher persists in other parts of the world today (Tucker & Codding, 2002).

A number of forms of leadership have evolved since the time of the principal teacher. Transformational leadership and instructional leadership are two forms of leadership that have attracted much attention in recent years (Klump & Barton, 2007). Transformational leadership is about school redesign and building capacity. Instructional leadership is focused on teaching and school climate.

Burns (1978) describes the concept of transformational leadership as a process that motivates and appeals to the values of the followers. The transformational leader is charismatic and attracts followers to him. Burns further defines transformational leadership in terms of how he affects the follower. Such a leader displays conviction and appeals to followers on an emotional level. The transformational leader's job is to move people to purposeful action. Trust is built between the leader and followers. Further, a transformational leader is able to articulate

an inspiring vision and is intellectually stimulating, evoking values, purpose, and meaning. The follower admires and respects the transformational leader.

The importance of the administrator with instructional leadership skills surfaced in the early 1980s informed by the *effective schools* research (Fullan, 2014; Jenkins, 2009). Hoy and Hoy (2003) describe in the book *Instructional Leadership: A Learning-Centered Guide* that school leaders are in the business of student learning. A school administrator cannot achieve this goal or purpose without a strong understanding of curriculum and instruction.

Instructional leadership focuses on specific learning goals, teaching strategies, and monitoring student mastery (Klump & Barton, 2007). The instructional leader visits classrooms daily, talking with students and examining student work. The principal blocks time for managerial tasks and student learning sending a clear message to all that instruction matters. The principal is connected to the teacher and the students. He creates a school climate where instructional leadership is developed in all the building administrators and teacher leaders (Hoy & Hoy, 2003).

An instructional leader shapes the school climate and enhances every teacher's practice (Louis et al., 2010). Such a leader augments the teacher's practice through his knowledge of pedagogy, formatively assessing by involving the teachers directly, and helping professionals to grow. Flach (2014) expands on instructional leadership by including other adults in the school. The most effective principals empower lead teachers and work to build capacity in the school for instructional leadership to become a team sport.

Cotton (2003) insists that leaders of high performing schools demonstrate characteristics of both transformational and instructional leadership. In a study of 24 schools, Marks and Printy (2003) focus on school leadership through an analysis of transformational and instructional

leadership in relation to student performance. The study found that when transformational and instructional leadership coexist, the influence on student achievement is substantial.

Fullan (2014) describes the first large scale district-wide instructional initiative in New York City where the role of the principal evolved. Curriculum implementation and teacher performance reviews were central to the principal's job. Schools began to move away from the individual autonomy of the classroom.

Fullan (2014) offers a new updated model of the principal in the book *The Principal: Three Keys to Maximizing Impact.* Fullan believes the role of transformative leader is too broad and the instructional leader model is too narrow. The book also promotes abolishing the tug-of-war between what he calls the micromanagement of the instructional leader and the act of complete autonomy characteristic of the transformational principal in favor of a lead learner role. The principal should be recognized in three ways and must represent the leader of learning, the lead change agent and he must become a district/systems team player.

There are few research studies that exemplify the principal as the learning leader (Fullan, 2014). A large-scale study of research was conducted regarding the relationship between principals and student achievement. Robinson (2011) summarized that lead learners are strong managers and great leaders of teacher learning and development and participate as learners in professional development making personal learning and teachers' learning a priority.

Leadership by Value System

Collins (2001) tells us in the book *Good to Great* that a leader who clarifies what is important, what needs to happen, and how to make it happen is most successful in fulfilling duties. The principal clarifies what is important and what needs to happen in a school through his own instructional philosophical orientation (IPO). The principal's beliefs and values about

teaching and learning affect his decision making (Harrison, 2012; Hewitt, 2006; Wallace Foundation, 2012). Efforts to improve a school result from a principal's IPO, knowledge, experiences, and demographics.

Through dissertation work, Fisher (2012) found that leadership has a great impact on the success of students and schools. The findings show the importance of the principal's views and experiences related to disabilities and special education. Three themes emerged: (a) what the principal believes about disability impacts personal leadership in that area; (b) the principal must understand a leader's role in the area of special education; and (c) a principal's experiences, background, and knowledge of special education inform beliefs about disability. Fisher further delineates that principal beliefs inform leadership decisions related to teaching students with disabilities.

What principals value most about their jobs is extremely important (Smith & Andrews, 1989). In an early study, in *Phi Delta Kappan*, Krajewski (1978) showed a great deal of time was spent on management functions although principals believed the tasks were actually less important aspects of their job. Further, high value was placed on instructional leadership tasks such as supervision of instruction and staff development, although less time was actually spent on these activities.

Research on what an adult values reveals that a person's value system is not easily changed (Krajewski, 1978). Behaviors are more easily changed. When considering what an employee does day to day on the job, it is easier to change behaviors to align to a worker's value system. Smith and Andrews (1989) contend that the strong instructional leader finds ways to align personal values and behaviors. As a result, such a leader spends more time on academic

tasks, whereas the average principal allows the managerial tasks to take precedence over instructional duties.

Harrison (2012) found that principals' beliefs influenced leadership practices in relation to how literacy should be taught. When there was tension between principals' beliefs and the curriculum, administrators always found ways to contest any curriculum limitations. The leaders aligned the implementation of the prescribed curriculum according to personal beliefs.

Philosophy Informs Practice

The chain from what the principal thinks and does in daily practice to the student's level of achievement is difficult to unpack and define (Quinn, 2002). It is important to follow this chain to determine at a more refined level how the principal affects student learning (Leithwood et al., 2004; Quinn, 2002). The choices the principal makes *influence* and *direct* much of the school's agreed upon vision and mission.

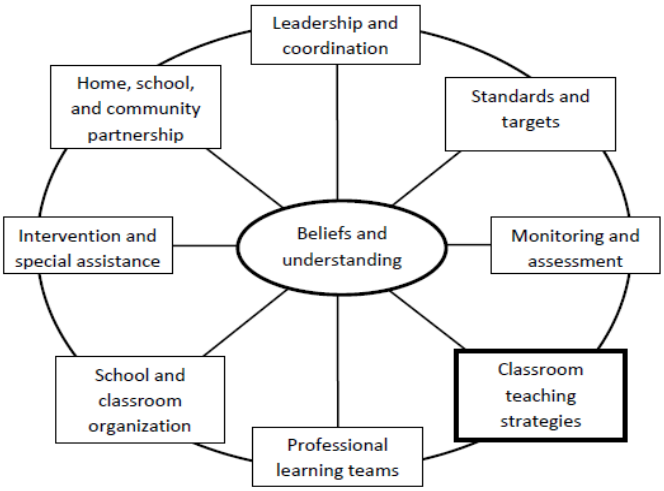
The principal's instructional philosophical orientation affects his decision-making and his influence on the whole school environment (Hewitt, 2006). Glickman, Gordon, and Gordon (1998) examined the relationship between a principal's beliefs and practices and personal educational philosophy. Whether or not the principal is aware, an educational philosophy has a great impact on instructional improvement efforts (Glickman et al., 1998). A principal's view about teaching and learning influences his decision making in the role as supervisor of instruction. Instructional tasks are informed by beliefs about (a) the overall purpose of schooling, (b) what should be taught as the curriculum, and (c) the process of learning. An administrator's beliefs about quality instructional tasks are based on a personal broader educational philosophy.

Smith and Andrews (1989) concluded in the book *Instructional Leadership, How Principals Make a Difference*, that the principal guides and influences a teacher's behavior and student learning. The researchers studied over 1,200 principals' behavior and analyzed a large amount of data to better understand the nature of instructional leadership. What the school leader does on a daily basis influences teacher's behaviors and interactions with students. They further confirm that teacher perceptions of the school principal as instructional leader most significantly impacts the teachers' level of job satisfaction.

Blase and Blase (2000) reveal in their study of over 800 teachers that their principals enhance classroom instruction through effective principal-teacher interaction. Effective principals model teaching techniques and positive interactions with students. They talk frequently about teaching and learning and promote professional growth and emphasize the study of teaching and learning for their staff.

Figure 1 *General Design for Improving Learning Outcomes* represents nine elements that research indicates contributes to student learning outcomes (Hill & Crevola, 1997). As part of a two year study on early literacy, Hill and Crevola created this model[1]- for bringing about school-wide improvements in literacy. The graphic shows how all the characteristics or design elements are connected and aligned.

Footnote [1] *The Literacy Challenge in Australian Primary Schools.* IARTV Seminar Series No. 69. Melbourne, Australia: Incorporated Association of Registered Teachers of Victoria.



Source: Hill and Crévola, 1997.

Figure 1. ***General Design for Improving Learning Outcomes***
Copyright ©Hill and Crevola, 1997. All rights reserved. Used with permission (Appendix G)

Hill and Crevola's (1997, 1999) visual graphic illustrates the importance of philosophy by placing *beliefs and understanding* in the center of the image. The path from the *beliefs and understandings* to *classroom teaching strategies* is representative of the current study. The beliefs and understandings of the principal are paramount. An administrator must have a strong foundation of the most current knowledge of teaching and learning in order to create a culture as the school's leading learner or instructional leader.

The principal plays a key role in ensuring high yield instructional practices are understood by teachers and reflected in the curriculum and classroom practices (Tucker & Codding, 2002). The instructional leader supports the classroom teachers working to motivate and engage children to learn at high levels using a variety of teaching strategies.

The Wallace Foundation (2012) contends that the most effective leaders focus on teaching and learning. Principals observe teaching and provide feedback to support, encourage, and correct teaching deficiencies. Effective leaders promote instructional or teaching models

that are research-based and recognize that teaching strategies and instructional practices increase student achievement.

Scheerens and Bosker (1997) describe the *metacontrol* concept whereby the principal influences classroom teaching practices. The principal as *metacontroller* works with the teachers to extend and perfect instructional practices. Specifically, this type of principal initiates discussions about instructional approaches despite the push back from some teachers who would prefer to be left alone to conduct class independently (Wallace, 2012).

The *effective schools* research supports the conclusion that principals have a powerful influence over what teachers do in their classrooms and how teachers interact with children on a daily basis (Smith & Andrews, 1989). The principal often visits classrooms looking for specific agreed upon strategies (Klump & Barton, 2007). For example, warm ups or entry tasks may be the expectation to maximize learning time. The principal influences the use of such strategies through expectations and documenting walk-throughs.

Instructional leaders or learning leaders as preferred by DuFour (2002) assist teachers with information on current trends in classroom practices. They provide information on curriculum, assessments, and pedagogy (DuFour, 2002). The effective instructional leader communicates personal beliefs about quality instruction (Jenkins, 2009). Further, the effective principal understands the reasons for adopting different models of teaching and is able to support teachers implementing various models.

Instructional Models

Teaching models can be considered on a continuum from a traditional to a contemporary educational philosophy. Ornstein (1991) categorizes society and education, knowledge and

learning, instruction, and purpose and programs into traditional and contemporary educational philosophies. Teaching models are represented in Ornstein's category of *instruction.*

Instruction by traditional philosophy is described as teaching and learning limited to the classroom (Ornstein, 1991). Instruction is directed to the whole group with a uniform time period. Students are passively involved, listening to what the teacher says or reading the textbook. The teacher works with students through explicit instruction based on the Socratic Method. The teacher is the authority or the keeper of the knowledge.

Teaching as part of a contemporary educational philosophy is described as the teacher serving as a change agent (Ornstein, 1991). Differentiated programs with varied instructional materials actively involve students. Students investigate and problem solve to access new information. The teacher is the guide on the side assisting students in scientific inquiry. The teacher and students plan activities together. Students learn on their own, independent of the teacher. Personal and social development is targeted while creativity and self-actualization is emphasized.

Diehl (2006) organizes the attributes of the educational philosophies into traditional and contemporary categories. In the traditional column, the teacher is described as disseminating information, lecturing, and dominating instruction. The student is passive, a receiver of knowledge, and a receptacle. The focus traditionally is on teaching. The contemporary list describes the teacher as a facilitator or coach. The student engages and constructs knowledge.

Joyce et al. (2009) describe teaching models in four basic families of models whose members include the major instructional philosophical orientations. Instructional models (the families of teaching models are referred to as instructional models in this study) are grouped into four categories: (a) the information processing family, (b) the social family, (c) the personal

family, and (d) the behavioral systems family. The behavioral system family of models and the information processing family of models have characteristics that fall on a continuum toward a traditional philosophy, while the social and personal families of models are more in line with the contemporary philosophy (Cohen, 1999). Wilson (2012) asserts that these families of models have been researched, tested, and refined over the years. Further, the constructivist model was added to this list and promotes that it has a distinct theory of learning orientation.

Wilson (2012) describes the models of teaching as the way the environment and instructional experiences are created for students. Joyce et al. (2009) have conducted extensive research on these models of teaching. Joyce et al. define the models as a description of the learning environment and the teacher's actions when that model is being used. These models support lesson planning and the creation of curriculum and instructional materials.

Wilson (2012) also contends that school administrators will choose a particular teaching model as a result of their own philosophical orientation. Administrators choose the models for their schools and begin offering or mandating professional development related to their preferred models. The principal will expect to see these teaching methods being used in the classrooms.

Armstrong (2014) created the *Four Families Teaching Philosophy Survey* by extrapolating information from the teaching models. The survey provides insight into the principal's instructional philosophical orientation. The effects of the four families of models on student achievement and the popularity among educators are well researched (Joyce et al., 2009).

Information Processing Family of Models

Designers of the information processing family of models work to help students develop the creativity and process information in more efficient ways to better understand the world (Joyce et al., 2009). These creators help students become better organizers of information. The

commonality among the information processing family of models is to provide students with the tools to become powerful learners. This family of models offers specific instructional strategies and processes for teaching and learning (see Table 1).

Working with the information-processing family of models, teachers ask students to form concepts by collecting and categorizing information, searching for and listing attributes, and participating in inquiry (Joyce et al., 2009). Teachers design tasks where students use a mnemonic that assists in retention of vocabulary words or facilitates engagement in metaphoric thinking. Teachers create and provide students with advanced organizers to assist with cognitive structuring (organizing knowledge) of information. These models apply to every subject and content area.

Table 1

Information-Processing Family of Models, Key Features, Nurturant & Effectiveness Research

Information-Processing Family of Models	Key Features	Nurturant	Research on Effectiveness Examples
Inductive thinking	Student centered, popular model engaging in inquiry, constructing their own meaning Project based learning	Spirit of inquiry Logical thinking Nature of knowledge	Prince & Felder (2006) Jones et al. (2008) Joyce et al. (2009)
Concept attainment	Critical analysis, student centered	Conceptual flexibility Inductive reasoning	Tennyson and Cocchiarella (1986) Cawelti (2004) Joyce et al. (2009)
The picture-word inductive model	Emphasis on phonics, grammar, mechanics, modeling. Builds vocabulary	Express self through writing Culture of readers Collaborative skills	Joyce & Calhoun (1998) Swartzendruber (2007) Joyce et al. (2009)
Scientific inquiry & Inquiry training	Scientific question. Authentic problems to	Open-mindedness Commitment to	El-Nemr (1979) Bredderman (1978)

	investigate, Processing information	inquiry Cooperative spirit	Joyce et al. (2009)
Mnemonics	Key word method. Fun memorization	Self-esteem Self-understanding Self-reliance and independence	Mastropiere et al. (2005) Joyce et al. (2009)
Synectics	Creative problem solving, playfulness of creating analogies	Self-esteem Adventurousness Achievement of curricula content	Hummell (2006) Joyce et al. (2009)
Advanced organizers	Sense making of large amounts of material	Interest in inquiry Habits of precise thinking	Cawelti (2004) Joyce et al. (2009)

The inductive thinking model capitalizes on the idea that human beings conceptualize and categorize everything naturally (Joyce et al., 2009). Students need practice thinking inductively to increase the ability to view information in a variety of ways. Inductive methods are student-centered (Prince & Felder, 2006). Examples of inductive thinking or inductive methods are found in project-based learning, discovery learning, and inquiry-based learning. Through the use of inductive methods, students learn by connecting new information to existing knowledge. When student are successful at fitting new information into their current cognitive structures, they become better learners.

Experiences are set up using inductive methods with a goal of students constructing their own understandings. Teachers using the inductive approach know the importance of Vygotsky's Zone of Proximal Development (Prince & Felder, 2006). Students thrive academically when faced with tasks that are rigorous yet not so challenging that they becoming frustrated or overwhelmed. The teacher must provide scaffolding as needed while allowing students to

construct their own meaning. This state or range of acceptable challenge where a student experiences success is that child's zone of proximal development.

Critical thinking and problem solving abilities are cultivated through inductive methods of teaching and learning (Jones, Andrew, Oldmeadow, & Oldmeadow, 2008; Prince & Felder, 2006). A meta-analysis of the research reveals that inductive methods are often found to be superior to traditional methods for teaching and learning. Students are able to connect new information with previously learned content while new learning is continually made easier. Students will stick with contextualized problems that they value as worth solving.

As with any method, the learning is only as good as the teacher facilitating the learning (Prince & Felder, 2006). Support and guidance are necessary for success when students are introduced to inductive teaching and learning. The teacher must ensure the students maintain their zone of proximal development or they will resist such teaching methods.

The concept attainment model is another member of the information processing family of models. Concept attainment is based on *A Study of Thinking* by Jerome Bruner, Jacqueline Goodnow, and George Austin (1967). Students gain a deep understanding of a general concept after experiencing the concept attainment model. Students work to attain concepts using teacher made or selected materials that conceptualize processes, organize and categorize concepts (Johnson, Carlson, Kastl, & Kastl, 1992; Joyce et al., 2009).

Pritchard (1994) describes the concept attainment model in a student centered classroom environment. Students must engage in critical analysis in order to experience concept attainment. Teachers engage students in rich discussions that elicit the kind of thinking needed for concept attainment.

Emily Calhoun created the picture-word inductive model (PWIM) (Joyce et al., 2009). The model is relatively new in comparison when compared to all the other models of teaching highlighted by Joyce et al. (2009). The model is highly effective when used to build vocabulary. Students describe and identify items in a picture while the teacher writes the words and draws a line from the word to the picture. The advantages of the PWIM are many, including the modeling of correctly spelled words, pattern recognition, and the emphasis on phonics, grammar, and mechanics (Calhoun, 1999).

A quasi-experimental study was conducted on the effects of using the picture-word inductive model on vocabulary acquisition (Swartzendruber, 2007). Students were shown pictures and asked to identify the items. The teacher wrote down each word on chart paper and drew lines from the picture to the word. A picture-word dictionary was created as a result. Each session lasted 20 minutes per day four days per week for four weeks. Analysis of the pre and post-testing revealed that PWIM intervention was effective in building student's vocabulary.

The biological science inquiry model of teaching is an area of investigation where students are involved in scientific inquiry. The student is actively engaged in questioning, data analysis, and critical thinking to solve rich authentic problems (Schaubel, Klopfer, and Raghavan, 1991). The difference in scientific inquiry and other, more traditional science class activities is that inquiry begins with a scientific question. Students are working to answer a research question through an investigation (Bell, Smetana, & Binns, 2005). The teacher nurtures the process of inquiry and promotes a rigorous and cooperative classroom climate.

Another model in the information processing family is centered on the concept of memorization. Research shows that people who are able to memorize a great deal of information quickly use elaborate strategies to remember the material (Joyce et al., 2009). Mnemonic

strategy instruction is a method for remembering unfamiliar content (Mastropieri et al., 2005). This strategy links familiar visual and auditory cues to new information and can be traced as far back as antiquity.

Students with learning disabilities have shown noteworthy increases in performance when taught using mnemonic approaches such as the key word method (Mastropieri et al., 2005). Mastropieri et al. (2005) reports that students learn vocabulary significantly better when using mnemonics over more traditional methods in preparation for the SAT. Students remember vocabulary terms over 90% of the time compared to only 50% when using traditional methods.

Synectics, a model in the family of information processing, was created by William Gordon and George Prince in 1961 (Hummell, 2006). Hummell reports students' increases in creative problem solving after using the synectics processes. There are two models of teaching based on synectics. The models are based on creating something new and making the strange familiar (Joyce et al., 2009). Students move back and forth among original analogies and analogies made from oxymorons. Students describe an analogy and *become* the analogy. The learners are asked to explore similarities and differences between new material and the analogies. Even the most timid student will be encouraged to share because of the playfulness of creating analogies.

The advanced organizer model is a member of the information processing family (Joyce et al., 2009). The model has three phases of activity. Initially, the organizer is presented to the students. The teachers present large amounts of information using the advanced organizer. The advanced organizer is used to help students make sense of the material (Learning Theory, 2013). An organizational chart, fishbone diagrams, and Venn diagrams are examples of such organizers.

Large amounts of information can be displayed on the organizer in such a way that students increase their own understanding of the content by simply analyzing the graphic.

The information processing family of models increases student achievement (Joyce et al., 2009). Students are engaged in the learning rather than passive receivers of information. All of these models are student-centered and help the learner to process information in ways that make sense. Inductive thinking, concept attainment, the picture-word inductive model, scientific inquiry, mnemonics, synectics and graphic organizers are all ways to promote memory and organization of content.

Social Family of Models

The social family of models emphasizes social interactions such as building learning communities within the school (Joyce et al., 2009). These social interactions can increase student learning. Some social theorists believe that the current interactions between the teacher and students as individuals are counterproductive to student learning. Researchers believe that student learning can be increased through exercising their capacity for cooperative learning (Knackendoffel, Robinson, Deshler, & Schumaker, 1992).

The social family of models includes partners in learning (positive interdependence, structured inquiry, and group investigation), role-playing, and jurisprudential inquiry (Table 2). There is greater mastery of material in classrooms where students work together. Shared responsibility for the work produces positive feelings about the tasks and about each other (Sharan, 1990).

Table 2

Social Family of Models, Key Features, Nurturant & Effectiveness Research

Social Family of Models	Key Features	Nurturant	Research on Effectiveness Examples
Partners in learning Positive interdependence Structured inquiry Group investigation	Synergy in cooperative settings generates motivation. Feeling of connectedness. Learn from one another. Increases self-esteem	Independence as learners Respect for dignity of all Social inquiry as a way of life Interpersonal warmth and affiliation	Shlomo (1980) Sharan (1990) Frey, Fisher, & Everlove (2009) Joyce et al. (2009)
Role Playing	Strategies for solving problems. Identifying values, attitudes, and culture. Openness to possible solutions.	Comfort in expressing opinions Integrativeness Skills in negotiating	Fogg (2001) Poorman (2002) Joyce et al. (2009)
Jurisprudential inquiry	Rich, real problems to explore. Openness and intellectual equality persists. A vigorous intellectual climate. Issues are thoroughly explored.	Empathy/Pluralism Facts about social problems Capacity for social involvement and desire for social action	Shaver (1995) Cawelti (2004) Joyce et al. (2009)

Positive interdependence is created as a result of productive group work (Frey, Fisher, & Everlove, 2009). Positive interdependence results when students recognize their individual contribution is linked to the success of every member in the group. The assigned task must be more than simply assigning individuals segmented parts to complete and then assembling the parts to make the whole. The students must engage in a task whereby the individual must contribute to a joint effort. When the students recognize the necessity of everyone's contribution, rich collaborative learning occurs.

Structured group work and group investigation are part of the partners in learning models. Slavin (1995) explains that when students work together they build social cohesion. Students are motivated to encourage fellow group members. Enhanced learning for all is followed by peer tutoring, modeling, and practice.

Zingaro (2008) describes the theory and practice of group investigation. Students form groups to investigate a multi-faceted problem and create a presentation of findings. The teacher's role is that of a facilitator of learning, guiding students as needed and providing resources or helpful hints. The goal of group investigation is for students to learn because they are interested in the topic.

Students in group investigation classrooms perform better on higher cognitive demand questions and problem solving activities (Shlomo, 1980). In addition, group investigation has been shown not to reduce the acquisition of low level questioning skills.

Role-playing is a teaching strategy in the social family of models. Students enjoy role-playing because it is socially and intellectually stimulating (Joyce et al., 2009). Students are highly motivated with such integrated experiential learning tasks (Fogg, 2001). Students increase their content knowledge when they study and research a character in a course of study (Poorman, 2002).

The jurisprudential teaching model is designed for students to investigate social problems (Joyce et al. 2009). Students identify public policy issues and plan solutions to the problems. This model helps students to rethink personal positions on ethical or social questions (Shaver, 1995). A respect for the point of view of others is nourished through analyzing controversial situations. This model brings into play a student's emotional response while engaged in other models such as role-playing.

Personal Family of Models

The personal family of models helps students to develop self-confidence and increase their emotional intelligence (Joyce et al., 2009). The models encourage students to take charge of their own learning and develop into self-actualizing learners by focusing on the student's mental and emotional well-being and their motivation to learn. Creativity and personal expression is promoted.

A personal model works well in an environment where a non-directive teaching philosophy is adopted (Joyce et al., 2009). A personal model can be used in combination with other models of teaching to enhance learning. Students better develop strong self-concepts and positive attitudes toward learning while engaging in a personal model at the same time as other models of teaching. Students are able to explore and interact with the world in a risk free environment. Studies show when students engage with the personal family of models, learning increases (Joyce, et al., 2009).

Maslow (1954) emphasizes that the lower needs of air, water, and food must be met in order for a person to progress to a higher mental state. The three progressive levels are the physiological (air, food, water), psychological (safety, love, self-esteem) and self-actualization. Self-actualization is the ability to express one's talents more fully (Joyce et al., 2009). A self-actualized learner has increased learning capacity.

Cornelius-White (2007) studied 50 years of research dedicated to the personal models. He found that the personal models improved student learning (Table 3). These models are denoted by Joyce et al. (2009) as conceptual frameworks that *flavor* the teaching.

Table 3

Personal Family of Models, Key Features, Nurturant & Effectiveness Research

Personal Family of Models	Key Features	Nurturant	Research on Effectiveness Examples
Nondirective teaching	Take charge of their own learning Relationships in a risk free environment	Self-esteem Academic and social motivation Learning capacity and achievement	Rogers (1961) Joyce et al. (2009)
Enhancing self-esteem	Motivation to learn Teacher qualities are factor in growth	Induces engagement in great activity	Knowles (1973) Lovelace (2005) Cornelius-White (2007) Joyce et al. (2009)

Carl Rogers (1961) believed that teaching and learning must be based on relationships rather than subject matter content. In *Freedom to Learn* (1969), Carl Rogers challenges many of the traditional aspects of educating children. He describes the teacher as a facilitator who builds relationships by creating an environment that is appealing to students. The teacher supports student growth and development by making materials and resources easily available in a risk free environment. The teacher or facilitator becomes a member of the group and learns as much as the student, modeling his own thinking and learning thereby inspiring students to express themselves.

The teacher nurtures the learner through reflective questioning (Rogers, 1961). The teacher echoes back the student's thinking in a non-judgmental way showing genuine interest in the student's learning at their own pace. This learning environment helps the students to clarify their own thinking.

Self-discovery is the only significant type of learning according to Rogers (1961). He explained that humans have a natural ability to learn and that learning cannot truly be taught. He

believed that students will learn subject matter that is relevant. The work of the *International Center for Leadership in Education* (2012) is centered on the idea that rigor, relevance, and relationships are foundational to teaching and learning. The Center's focus is strongly aligned to Roger's (1961) work.

The non-directive teaching model is a shared model in which the teacher and the student balance responsibility for the learning (Joyce et al., 2009). The teacher works with the student to identify rich problems to be solved. The student is encouraged to express his/her ideas through discussion that deepens understanding.

The Socratic Method is one of the strategies that involve the teacher in a form of structured discussion (Paraskevas & Wickens, 2003). The method involves students by engaging them on an emotional level in the learning. The teacher questions the student, eliciting specific responses. The Socratic Method is a proven technique that must be used with caution due to the potential for this type of questioning method to stress the learner.

The developing positive self-concepts model of teaching is a member of the personal family of models. Developing positive self-concepts has been researched for over 30 years (Knowles, 1973). Growth supports a positive self-concept and is an important concept in education (Joyce et al., 2009). Teacher qualities are a major factor in student growth. Growth of the teacher and the student has been well studied.

Research suggests that students can accelerate their own growth when provided with a variety of teaching and learning situations (Joyce et al., 2009). The more students learn the more aptitude they have for learning. Students who learn to interact with the world become what teachers model. The state of growth of the teacher depends on success with students. Students

learn more when teachers attend to the learner's individual differences through responsive teaching (Lovelace, 2005).

Given the increasing complexities of our time, teacher-student relationships are more important than ever. Denise Beutel (2009) contends that teachers build relationships with students by providing authentic and relevant lessons. Beutel studied *pedagogic connectedness,* which is the mentoring relationship between the teacher and student that impacts student achievement. The dimensions studied in Beutel's research were classroom interactions, pedagogic practices, perceived role of teacher/student and the focus of teaching and learning. The most beneficial relationships were those that inspired students through the teachers' own enthusiasm for life.

Teacher growth affects student growth (Joyce et al., 2009). A meta-analysis of over 200 studies on professional development confirm that what a teacher believes about teaching determines what she does in the classroom (Showers, Joyce, & Bennett, 1987). A review of the studies reveals that when teachers are coached or mentored, they are more likely to use new strategies they learned in professional development sessions. Confident and competent teachers are more likely to benefit from the professional development. This supports the idea that the more we learn the more we are able to learn (Showers et al., 1987). The adult learner's states of growth and self-concepts are predictors of the adult's ability to benefit from such professional development and other adult learning opportunities (Knowles, 1973). On-going professional development promotes lifelong learning for all. Adults must model an active state of learning to help students develop the mindset for growth.

A meta-analysis based on the Dunn and Dunn model revealed that no matter the level of current academic achievement, students had significantly higher academic gains when they were

taught according to their identified learning styles (Lovelace, 2005). The Learning-Styles Inventory is one instrument that was used to determine the conditions under which students in grades 3-12 preferred to learn academic content. Results of the inventory guided teachers to provide the most responsive individualized instruction. There was found to be no one instructional method or resource that works for all students in the 20 years of study. This meta-analysis confirmed that learning style-responsive teaching improved attitudes and significantly increased student learning for all children (Lovelace, 2005).

The 4MAT model (McCarthy, 1990) helps teachers design their instruction to meet the individual needs of learners. This model assists teachers in understanding student's learning styles and why one strategy works better than another for individual students. Major learning styles are identified in the 4MAT four-quadrant model: imaginative learners, analytic learners, common sense learners, and dynamic learners. According to McCarthy (1990), learning styles inform teaching styles and then inform curriculum and ultimately evaluation. The 4MAT model is a successful research-based systems approach to responsive teaching.

The personal family of models offers a variety of ways to help students take charge of their own learning and supports students to become better developed, self-actualizing learners. The personal family of model's success is enhanced by the research on learning styles, teacher and student growth, 4MAT model, Socratic Method, teacher-student relationships, and the effects of non-directive teaching. The effect of the personal family of models can be increased when used in conjunction with any of the other models.

Behavioral Systems Family of Models

The behavioral systems family of models includes three successful models, mastery learning, direct instruction, and simulations (Joyce et al., 2009). This family of models offers research-based instructional strategies and processes for teaching and learning (see Table 4).

Table 4

Behavior Systems Family of Models, Key Features, Nurturant & Effectiveness Research

Behavior Systems Family of Models	Key Features	Nurturant	Research on Effectiveness Examples
Mastery Learning	Feedback, correctives, enrichment	Self-esteem	Block & Burns (1976) Cawelti (2004) Guskey (2007) Zimmerman & DiBenedetto (2008) Joyce et al. (2009)
Direct Instruction	Skill, practice, review	Self-esteem	Cawelti (2004) Flores & Kaylor (2007) Joyce et al. (2009)
Simulations	Practice a real world skill	Responsiveness to feedback Independence as learner Sensitivity to cause-effect relationships	Cawelti (2004) Joyce et al. (2009) Bachen et al. (2012)

The Behavioral Systems Family of Models was first recognized by Watson, Pavlov, Thorndike and Skinner (DeMar, 1989) as a way for students to increase their learning. Skinner developed the theory of operant conditioning and suggested that through behavior modification that students will learn.

The authors of *Models of Teaching* provide evidence that behavior theory offers a plethora of models that promote increased student achievement (Joyce et al., 2009). The theory is explained simply as *a stimulus evokes a response*. As an example, illiterate students have been found to respond quickly to behavioral practitioners.

B.F. Skinner (1953) connects behavioral principles to education in his book, *Science and Human Behavior*. As a result, educators implementing self-paced programmed materials sequence content in incrementally small steps allowing virtually all children to experience success. The process of students earning positive feedback is called *behavioral conditioning*.

John Carroll and Benjamin Bloom (Block & Burns, 1976) created what is known as the mastery learning model. Carroll defines aptitude as the amount of time it takes a student to learn a subject. He believed that if a student was given enough time to learn, there was essentially nothing that he could not learn. School learning depends on the amount of time spent on a subject divided by the amount of time needed to learn the task (Block & Burns, 1976).

Benjamin Bloom was the greatest contributor to the understanding of mastery learning (Block & Burns, 1976). Bloom's mastery learning plan began with the teacher organizing a unit plan that generally spanned two weeks (Block & Burns, 1976; Guskey, 2007; Guskey, 2010). The teacher would give a formative assessment soon after the introduction to the unit and he/she would determine "corrective activities" that are individualized according to the assessment results. Students would work with these activities and then take a second assessment. This second chance opportunity was a great motivator for students who had difficulty mastering the content. The essential elements of Bloom's mastery learning were feedback, correctives, and enrichment. Students who mastered the material the first time, worked on enrichment activities while the students who needed additional supports were given time to learn the material. All students would then move on to the next unit.

A large body of research suggests that mastery learning is one successful method for student achievement (Guskey, 2007). Benjamin Blooms' graduate students conducted several studies that provided strong evidence that mastery learning is effective. After nine weeks of

mastery learning in mathematics and foreign language, students were far more likely to understand the material (Guskey, 2007; Zimmerman & Dibenedetto, 2008). However, there are some concerns with the mastery learning model. Block and Burns (1976) suggest that there is some question as to whether mastery learning supports the retention of higher order learning. They also report that some teachers complain that mastery learning requires a lot more work to implement correctly (Zimmerman & Dibenedetto, 2008).

Direct instruction is a model in the behavior family of models (Joyce et al., 2009). There are several meanings for the term *direct instruction*. Direct instruction has been used for more than a century (in general terms) as any instruction in which the teacher is leading the class (Rosenshine, 2008).

For the behavioral family of models, the teacher using direct instruction follows a three step process. The teacher explains a new procedure, concept, or skill to the students. The students practice while the teacher provides direct feedback. As students begin to show understanding they are assigned more practice called *guided practice* (Joyce et al., 2009). Rosenshine created a six step process that describes the procedures for direct instruction, including the presentation of the goals of the lesson, independent practice, and daily review (Clowes, 2006).

Direct instruction is an effective teaching model in regular education classes as well as special education classrooms (Joyce et al., 2009). Researchers demonstrated over 20 years the effectiveness of direct instruction in cognitive strategies. Students in the studies significantly outperformed students in the control groups (Rosenshine, 2008).

Flores and Kaylor (2007) determined the effectiveness of direct instruction through their own study of middle school math students. The results were significant. Students who

participated in the research showed increases in achievement. Direct instruction is made more effective with the quality of the teacher's initial instruction and the time the teacher spends clarifying for students (Rosenshine, 2008). The amount of quality instructional supports during the lesson makes a difference in student achievement.

The third model in the behavioral family of models is learning through simulations. Simulations have been created through the use of software for more than 30 years. From training helicopter pilots to driving simulations, computer training has become a viable alternative to real world training (Joyce et al., 2009). The use of simulation software is proving to be a very successful method of learning. Simulations offer a way to practice a real world skill without the real world risks often associated with tasks such as performing surgery (NovaSim, 2006).

In the corporate world, real life training can be expensive. Simulation training has become a cost effective way to train employees (Bachen, Hernandez-Ramos, & Raphael, 2012). Simulation learning has great potential, benefitting the teacher and the student or the trainer and the trainee. The use of simulations prepares students or employees for jobs by refining their skills. Classrooms of the future will see more computer-based simulations.

Instructional Models and Student Engagement

All four families of models of teaching (Wilson, 2012) help educators to develop a variety of strategies and tools for use in their practice. Educators are able to reach more students with greater gains in achievement. They are able to match curriculum to learning outcomes and understand why some methods work only in certain instances. In addition, the models of teaching support emerging techniques that may be superior to current strategies.

The instructional models define the teaching and learning environment. Joyce et al. (2009) describe the instructional and nurturant effects of each of the models. The nurturing

effects are of particular interest to this study because of the potential influences on student engagement.

Student engagement is defined for this study as a student's involvement and enthusiasm for school. It also includes how well students are known and how often they get to do what they do best (Gallup, 2012). Gallup researchers quantify student level of engagement in school by asking students survey questions related to: (a) having a best friend, (b) feeling safe in school, (c) importance of school work, (d) opportunity to do what they do best every day, (e) receiving recognition or praise for school work, (f) commitment of the school to build their strengths, and (g) volunteering their time.

Wolpert-Gawron, (2015) surveyed 220 middle school students asking the question *What engages students?* The results were aligned to the Gallup poll (Gallup, 2012) questions and to the *nurturant* features of Joyce's (2009) teaching models. Wolpert-Gawron (2015) touts *from the mouths of babes* survey results declare, (a) let us (students) work together, (b) give us technology, (c) connect the work to our lives, (d) love your job of teaching, (e) get me out of my seat, (f) I like visual representations, (g) give me choice, (h) I want to be in partnership with you the teacher, (i) give us some variety, (j) be human, and (k) ask us what engages us, we are all different.

Schwartz (2014) describes the *student six* researched plans for supporting student engagement in Chapel Hill-Carrboro City Schools. Students share their needs and the faculty created the *student six* as a result. The students were partners with teachers in creating the six components for increasing engagement through a more culturally sensitive atmosphere. The six components were for teachers to be visible and to create a safe space for students. The students requested that teachers connect the classwork to their lives and to their culture. They asked for

racial dynamics to be discussed in the classroom. The last of the *student six* was for the teachers to connect the content to the students' future lives.

The relationship between the teaching models and student engagement is evident across all four of the families of models. The information processing models nurture student engagement by allowing students to formulate their own questions and test their ideas (Joyce et al., 2009). Creativity and autonomy in learning are cultivated. Intellectual freedom and interactions among students generate increased student engagement. The information processing family of models promotes student engagement through project-based or problem-based learning (Joyce et al., 2009). The models connect to the world outside of school and allow for real world cooperative learning.

The social family of models works to build community through cooperative relationships (Joyce et al, 2009). Cooperative learning and group investigations models nurture student engagement by combining the preparation for life in our self-governing society with improving student social skills and giving students a feeling of solidarity. This environment supports opportunities for students to see their schoolwork as important and to build relationships as partners in the learning (Gallup, 2012). The social family of models, specifically the jurisprudential model, is designed to help students analyze real world issues of the public good, thereby helping students further see how schoolwork is meaningful and important for life after school (Joyce et al., 2009).

The personal family of models shapes the classroom environment so that students understand themselves better. The nondirective teaching model supports students making choices about what they want to learn (Joyce et al., 2009). The teacher builds a partnership with the student and encourages self-understanding and independence. The personal family of models

addresses students' needs for the support and respect of other students. This learning environment is in direct alignment with Gallup's (2012) student engagement concepts of (a) providing students the opportunity to do what they do best, (b) the need of having a friend at school, and (c) feeling safe.

The behavioral systems family of models nurtures student engagement through rich simulations of real world work. Students learn from simulations such as piloting an aircraft or developing a residential area that school work is important and meaningful (Joyce et al., 2009).

All the families of models promote student engagement allowing rapid and confident learning (Joyce et al., 2009). As students build their repertoire through the models, they recognize the school as being committed to building their strengths.

School administrators choose teaching models according to their own philosophical orientation (Wilson, 2012). The administrator promotes the models he/she wants to see in classrooms. He plans professional development on these chosen models influencing teaching and learning. It is vital the principal have a strong theoretical foundation in current and emerging teaching models to be able to make wise instructional decisions (Tucker & Codding, 2002).

Wilson (2012) provides an example of a conflict with a teaching model verses a personal belief. She uses her own aversion to the behavioral model and helps the reader to comprehend that an educator's belief system can affect which models are implemented in the classroom. She reminds us that a preference for a particular model does not constitute superiority of that model over another model.

All of the teaching models are appropriate at different times in a variety of lessons (Joyce et al., 2009). Educators should employ the different models for teaching and learning of content.

Different models are better suited for certain instructional situations. Engagement is nurtured and enhanced when students experience a variety of instructional models and thereby become powerful learners.

Principal and Student Engagement

The fundamental question of interest in this study is the difference between the principals' philosophy and levels of student engagement. What the principal believes, understands, and ultimately does influences student engagement and student success. Principals who focus on specific instructional strategies are shown to be the most effective (Hattie, 2009).

Robinson, Lloyd, and Rowe (2008) reported through a meta-analysis of 27 studies the impact of leadership on student outcomes. They found that leaders who worked directly with teachers on the core business of teaching, learning, and curriculum had an effect on student success in the classroom. Water, Marzano, and McNulty (2003) found similar results. When principals worked with teachers to design and implement teaching strategies, student achievement was enhanced.

Researchers have shown that when teachers vary their teaching models, student engagement increases (Cotton, 2000). When students are given authentic hands-on tasks student engagement improves as well (Weiss & Parsley, 2004). Schlechty (2012) asserts that the primary role of teacher is to design such engaging lessons. The principal's role is to influence, direct, and support the teacher with choosing appropriate teaching models. Little research exists on the linkage from the principal's beliefs about the teaching models and how his beliefs effect student engagement.

Principal's IPO and Student Engagement

The linkage from the principal to student learning (Figure 2) is a multifaceted path and although it is complex with many variables, this relationship is worthy of study (Dinham, 2004; Leithwood, et al., 2004; Quinn, 2002).

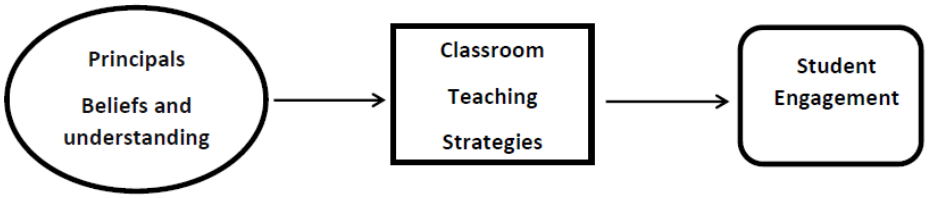


Figure 2. *IPO and Student Engagement*

The principal's instructional philosophical orientation (IPO) influences his decision making. A principal's years of experience as a principal, years of experience in the current school, subjects taught as a teacher, and sex are all variables to consider in relation to the principal's IPO. His knowledge of teaching models and instructional strategies should be considered in relation to the influence on level of student engagement. The principal must have deep knowledge of teaching models and understand their value in educational programming. Schools must have principals with well-defined specialized training to facilitate and act as the lead learner (Bouchamma, Basque, & Marcotte, 2014).

A principal's instructional philosophical orientation leans toward either a traditional philosophy or a more contemporary one (Diehl, 2006). Research supports increases in student achievement across the four families of teaching models (Joyce, et al. 2009). However, little research exists on principal's beliefs and student engagement data with either the traditional model or contemporary model.

Research is sparse in looking at the importance of the principal's value system and connecting to student outcomes (Nelson, Stimpson & Jordan, 2007). David Quinn (2002) asserts

that future research should observe the *difficult to quantify* nuances of the highly effective principal. He recommends future studies that can add to the literature base in search of what is missing from the school's leadership that fail to provide a quality learning environment for all students.

Klem and Connell (2004) recommend future studies examine the pathway between strategies for changing the learning environment and how those changes affect student engagement and ultimately student achievement. Weiss and Garcia's (2015) findings determine that strong student engagement positively affects student achievement. However, they indicate that the concept of student engagement has a limited research base and is deserving of further study. This literature review provides the basis for investigating principals' IPO and student engagement.

Summary

In the context of our accountability system and standards-based instruction, the principal must represent himself as a leader of learning (Fullan, 2014). He must be knowledgeable about teaching, learning, and curriculum to build effective teams through motivation and coaching in all three areas. The principal is the driver of change. Studies show that the principal influences what happens in the classroom and affects student engagement and learning. The effective principal focuses on the quality of instruction in his school (Wallace Foundation, 2012). He influences and directs what happens in the classroom and ultimately affects student learning.

The principal's beliefs, values, and knowledge of teaching models and instructional methods add to his influence as a learning leader. His beliefs about the implementation of the families of teaching models and the resulting effects on student engagement through the

nurturing features of the models is worthy of study. The literature is scarce in connecting the principal's preferred teaching models (IPO) to levels of student engagement.

The preceding literature review addressed the research relevant to principals' instructional philosophical orientation in relation to student engagement. This review provides a basis for this research study on the principal's IPO and student engagement. The following chapter will provide a description of the methods used in this study.

CHAPTER THREE

METHODS

This case study examined the effects of principals' beliefs on student engagement in the Kanawha County school district in West Virginia. An examination of the differences in the level of student engagement per school in relation to principals' instructional philosophical orientation (IPO) provided further insight into the effects of principals' beliefs on student engagement. The study included an analysis of the differences in principals' IPO, student engagement, and his or her years of experience as principal, years of experience as a principal in the current school, subjects taught as a teacher and sex. The differences between principals' IPO and students' level of engagement were analyzed to add to the knowledge base about effective school leadership. This chapter provides an explanation of the case study research design, population and samples, instrumentation development and validation, data collection procedures, and data analysis techniques.

Research Design

The research design is quantitative. A one-time cross sectional survey was developed and administered. This survey examined participants' current opinions by gathering data on principals' preferred instructional philosophies among four families of instructional models. This data provided for the principals' description of preferences for teaching and learning in the classroom environment and specific instructional strategies. Principals' demographic data were collected. Gallup student engagement data were analyzed in relation to principals' responses.

The principals' instructional philosophy orientation data were collected through the use of the Four Families Philosophy Survey, which was renamed the *Instructional Philosophy Survey* (Armstrong, 2014). Student engagement data were analyzed using the Gallup survey results for Kanawha County Schools from the 2014-2015 school year.

Limitations

Limitations associated with a self-report cross sectional survey instrument apply. The survey included quantitative questions and one question for additional comments. Choices were restricted on the survey except for the comments section.

Population and Sample

The student and principal populations of Kanawha County Schools (KCS) were included in this study. Gallup survey data results from 13,075 students in grades 5-12 were used. KCS principals served in 68 schools comprised of 44 elementary schools, 13 middle schools, eight high schools, one alternative school, and two career technical centers. The 68 principals serving as the lead administrator over each school were given the *Instructional Philosophy Survey* to uncover their beliefs about teaching and learning to determine their instructional philosophy profiles.

Instrumentation Development

Permission to use Armstrong's (2014) *Four Families Teaching Philosophy Survey* was received (Appendix H). The survey was minimally revised in response to comments from a panel of experts (Appendix D) who took the survey. The survey was renamed the *Instructional Philosophy Survey* as the data collection instrument (Appendix A). The two page survey included three parts. Part A of the survey asked participants to use the rating continuum of 1-7 provided at the end of each statement to rate their level of agreement or disagreement (preference) with the statement. Respondents were asked to circle the 1 if the statement is not at all in agreement, 4 if it is in moderate agreement with their instructional philosophy or 7 if it is very much in agreement with their instructional philosophy, or somewhere in between. The 28 items were representative of the four families of teaching models (Joyce et. al., 2009). Part B

asked participants to respond to demographic data including (a) total years of experience as a principal, (b) total years of experience as a principal in the current school, and (c) primary subjects taught as a teacher. Sex was identified and included with the school Gallup data on each survey. Part C asked for participants to add any other comments.

Instrument Validation

The *Instructional Philosophy Survey* was validated for use in this study. A panel of seven curriculum and instruction experts (Appendix D) was asked to consider each of the items for construct validity, clarity, readability, and minimum amount of response time. Experts included leaders in the school district: the superintendent, deputy superintendent, assistant superintendents for curriculum and instruction, elementary, and high school, the director for professional development, and the director for elementary schools. All reviewer suggestions for changes were considered when completing the final draft of the survey. The phrase "of the environment" was deleted from one sentence to focus the question on the behaviors and not the environment. Sentence structure and wording was changed in four sentences. An example of rewording for clarity is as follows: "*Social involvement of group investigation is the primary routes to academic inquiry" to "Students learn best through social involvement in group investigation."*

Instrument Reliability

The internal consistency for reliability of the 28 items on the *Instructional Philosophy Survey* instrument was analyzed using Cronbach's alpha coefficient. This alpha coefficient of 0.831 suggests that the survey items have *relatively high* internal consistency (Brown, 2002). Reliability coefficient scores of .70 or higher are considered acceptable. Subgroup scores for the

reliability of each section of the survey are listed in Table 5. Low coefficient scores on three subsections may be due to the limited number of items in each subsection.

Table 5

Cronbach's Alpha Test for Reliability

	Items	N	Cronbach's Alpha
Full Survey	q1 - q28	28	.831*
Personal	q1, q5, q9, q13, q17, q21, q25	7	.604
Social	q2, q6, q10, q14, q18, q22, q26	7	.759*
Information Processing	q3, q7, q11, q15, q19, q23, q27,	7	.323
Behavioral Systems	q4, q8, q12, q16, q20, q24, q28	7	.543

*Coefficient scores of .70 or higher are acceptable

Student Engagement Gallup Survey Data

The student engagement data were provided through analysis of the 2014-2015 Kanawha County Schools Gallup survey data. The survey has been conducted for the past four years in KCS. The survey included seven items that students responded to ranging from strongly disagree to strongly agree or somewhere on the continuum. Gallup student surveys are conducted nationally every year (Gallup, 2012).

Data Collection Procedures

The superintendent of schools was asked for written permission to survey the 68 principals in Kanawha County Schools (Appendix E). The total population of principals was surveyed (Appendix A) during a county-wide face to face principals' meeting. Curriculum specialists for elementary and secondary schools distributed the surveys at the same time in two adjoining rooms at the counties' professional development center. The elementary principals

were in one room and the secondary principals were in an adjoining room. The researcher was not in either room during the distribution and collection of the surveys.

The survey cover letter was read aloud to the respondents by the curriculum specialists (Appendix C). It was further explained that there were no known risks by participating in this study. Participants were given an envelope with their name on the outside. They were asked to take the survey out and discard the envelope that had their name on the outside. It was explained that the survey should take 10 minutes to complete. Participants were directed not to put their name anywhere on the survey. Their responses were confidential and voluntary. The survey had abbreviations listed either an *E* for elementary or an *S* for secondary and an M/F for sex. It was explained to participants that a list of principals' names and their accompanying school's Gallup data was originally used to organize the surveys into each envelope. Once the surveys were matched to the correct envelope the list of principals' names and accompanying school Gallup data was destroyed. What remained was a list of abbreviations (E/F, E/M, S/M, S/F…) and the Gallup student engagement data. This remaining list was kept in a locked cabinet at Marshall University in Dr. Edna Meisel's office.

A box was provided on a table in each of the rooms for depositing the completed surveys. The two curriculum specialists delivered the boxes to the researcher following the meeting.

Data Analysis

The data were analyzed in response to the four research questions. For research question number one, student engagement data were harvested from the 2014-2015 Gallup results for each school. Student engagement Grand Mean results were also analyzed and described by total school scores and through an analysis of the seven item responses from the Gallup survey of student engagement. Percentage levels of engagement by the nation, county, elementary, and

secondary (high school and middle school) schools were described and analyzed by conducting a t-test for independent groups.

For research question number two, principals' preference for each of the four families of models was described based on the *Instructional Philosophy Survey* (Armstrong, 2014). The level indicators were categorized as high or low for each teaching model. The principals' profile resulted from an analysis of the *Instructional Philosophy Survey* for each participant (example: LLHH). This descriptive analysis provided a profile of principals' instructional philosophy related to four families of teaching models.

Results of research question number three were described using Analysis of Variance to compare the difference between the mean percent level of student engagement and principals' IPO. The principal profile was compared to the percent engagement by school: elementary and secondary (middle and high school). Further analysis included the principals' preference for each of the teaching models to the mean levels of student engagement per school by conducting a t-test for independent groups for each instructional model.

The fourth research question was described via chi-square analyses by determining the differences between principals' IPO based on principals' total years of experience as a principal, the total years of experience as a principal in the current school, the primary subjects taught as a teacher and sex.

The fifth research question was described using t-tests for independent groups. The analyses were conducted to determine differences in mean percent levels of student engagement between two groups (male/female, years of experience, years of experience at the current school, and subjects taught).

Results of research question number six were described using two-way Analysis of Variance (ANOVAs) tests to determine differences in mean student engagement levels due to interactions between two independent variables. Tests included the full IPO and demographics and the instructional models and demographics.

Summary

This chapter described the methods used in this study. The research design included a one-time, cross-sectional survey, which was distributed at a face to face principals' meeting to 68 principals in Kanawha County Schools. The surveys were analyzed and considered with 13,075 student's engagement statistics from the Gallup survey data. The data were analyzed using descriptive interval data and a t-test for independent groups for research question number one. The data were analyzed for research question number two using descriptive nominal data. One way Analysis of Variance and t-tests for independent groups were used for research question three. Research question number four was analyzed using chi-square 3x2 and 2x2 tests. The following chapter provides a narrative of the data analysis. Research question number five was analyzed using t-tests for independent groups. Two-way Analysis of Variance was used for research question number six.

CHAPTER FOUR

ANALYSIS OF FINDINGS

The intent of this case study was to examine principals' instructional philosophical orientation (IPO) and the level of student engagement in the Kanawha County School district in West Virginia. Findings are organized in the following manner: (a) data collection, (b) participant characteristics, (c) findings for each of the four research questions, and (d) a summary of the results.

Data Collection

Kanawha County Schools held the first leadership series meeting of the 2015-2016 school year on Wednesday, September 2, 2015, at the Bridge Valley Advanced Technical Center. All school administrators attend these professional learning meetings focused on leadership every other month. The county administration was supportive of this research related to their Gallup survey results and allowed 30 minutes on the agenda for principals to consider completion of the *Instructional Philosophy Survey* (Appendix A).

Curriculum specialists distributed the envelopes labeled with the principal's name on the outside to the appropriate administrator. Sixty-eight administrators represented 44 elementary schools, 13 middle schools, eight high schools, two Career Tech Centers and one Alternative School. The principals were instructed to remove the contents and discard the envelope. The contents included a cover letter (Appendix C) stamped with the IRB approval study number and the attached *Instructional Philosophy Survey*. The curriculum specialists read the directions from the cover letter for principals to consider. Completed surveys were returned to the containers provided by the curriculum specialists. Upon completion, the specialists returned the containers to the researcher, who had remained outside of the building during the survey

distribution and collection period. The response rate was 100% as all 68 principals completed the survey.

The 2014-2015 Gallup survey data for the 68 schools were provided to the researcher by the staff development director. The Gallup surveys were completed during the 2014-2015 school year by 13,075 students in the 68 elementary, middle, and high schools in Kanawha County. Four of the Gallup surveys were deemed inconclusive due to a small population size by the Gallup researchers, therefore 64 principals' IPO surveys were matched with the accompanying school's 64 Gallup survey results for analysis.

Participants

The *Instructional Philosophy Survey* (Appendix A) asked participants to respond to demographic questions on Part B by providing their total years of experience as principal and total years of experience as principal in their current school. The principals were asked their primary subject taught as a teacher by checking all that apply. The choices included English Language Arts, Mathematics/Science, Social Studies, Fine Arts/Related Arts, Elementary Education, Special Education, and Other. Sex and programmatic level (elementary or secondary) were identified on each survey prior to distribution. These data are provided in Table 6.

Sixty-eight principals completed the survey. Four principals' data were discarded due to the lack of available Gallup data. Sixty-four of the principals reporting had accompanying school Gallup data and are included in the analysis. Participants were identified on the surveys as elementary or secondary administrators. Forty (62.5%) were elementary principals. Twenty-four (37.5%) were identified as secondary administrators. Forty (62.5%) were female and twenty-four (37.5%) were male. A total of 40 elementary principals were made up of six males

(9.03%) and 34 females (53.13%). Eighteen males (28.12%) and six females (9.37%) make up the group of 24 secondary principals.

Participants were asked to provide their total number of years of experience as a principal. Two categories were created to analyze these data. Forty-two (66%) of the principals were in their early career ($0 \leq 10$ years) and 22 (34%) were in the later career (> 10 years) category. Principals were asked to provide their total number of years of experience as principal at their current school and the same categories were generated. Fifty-seven (89.06%) principals reported the $0 \leq 10$ years category, and seven (10.94%) principals had > 10 years of service in the current school.

Principals were asked to identify the primary subjects taught as a teacher. Elementary subjects represented 29 (58%) of the principals. Math/Science was the next largest category, representing six (12%) of the participants. Special Education represented four (8%) of the participants, Social Studies and Fine Arts/Related Arts represented six (12%) of the participants, and English Language Arts represented 4% of the population. The *Other* category was comprised of three (6%) of the principals with one administrator reporting subjects taught as reading, one principal had previous counseling experience, and one principal reported teaching in a Title I classroom. The total count for subjects taught was 50 principals because 14 principals identified themselves as teaching multiple primary subjects. As a result, grouping was reconsidered and compressed into two groups due to the small cell sizes. Forty elementary subjects (62.5%) for the purposes of analysis were in the elementary category and twenty-four (37.5%) were in the secondary group.

Table 6

Demographic Characteristics of Participant - Instructional Philosophy Survey

Characteristics	n	%
Programmatic Level (N = 64)		
Elementary	40	62.5
Secondary	24	37.5
Sex (N = 64)		
Males	24	37.5
Females	40	62.5
Males/Elementary	6	9.03
Females/Elementary	34	53.13
Males/Secondary	18	28.12
Females/Secondary	6	9.37
Total Years of Experience as Principal (N = 64)		
$0 \leq 10$ Years	42	65.62
> 10 Years	22	34.37
Total Years of Experience as Principal at Current School (N = 64)		
$0 \leq 10$ Years	57	89.06
> 10 Years	7	10.94
Primary Subjects taught as a teacher (N = 64)		
Elementary Content	40	62.5
Secondary Content Area	24	37.5

Data Analysis

The data analysis of this study was organized by each of the six research questions. The summary concluding Chapter Four is also organized by each research question.

Question 1: What is the level of engagement of Kanawha County Schools' students?

Kanawha County Schools implemented the Gallup student surveys annually for the past four years. The 2014-2015 school year survey data results represented in this analysis include 13,075 students in grades 5-12 across 64 of the 68 surveyed schools. Four principals' data were discarded due to the lack of available Gallup data. From the Gallup survey, programmatic level student population data were reported as: elementary 13.38% (n=1,750 students) and secondary 86.62% (n=11,325 students). Secondary included 41.05% middle school (n = 5,388 students) and 45.23% high school (n = 5,937 students). These data are represented in Table 7.

Table 7

Gallup Poll Student Engagement Survey 2014-2015 Kanawha County Schools Data

Programmatic Level	n	%
Elementary Students	1,750	13.38
Secondary Students (MS & HS)	11,325	86.62

Total = 13,075 students

The Gallup student survey measured a student's level of engagement in school. Students responded to seven item stems related to their involvement and interest in school. The items addressed: (1) having a best friend, (2) how safe the student feels in school, (3) how the teacher makes the student feel about their work, 4) if the student has the opportunity to do what they do best, (5) if the student has received recognition for doing good schoolwork in the past week, (6) how committed the school is to building the strengths of each student, and (7) having at least one

teacher who makes the student feel excited about the future. Students were instructed to select a number from 1 -5 for each item stem ranging from 1 for *strongly disagree* to 5 if they *strongly agreed* with the statement.

The Gallup poll reported student engagement levels using Grand Means and percentages. Table 8 illustrates the Gallup poll student engagement by Grand Mean overall and by item analysis. Programmatic level student engagement Grand Means were reported at the Gallup level, Kanawha County Schools (KCS) level, school level, and item level. Grand Mean student engagement levels reported at the elementary programmatic level revealed the KCS Grand Mean of 4.48 was .10 higher than Gallup's score of 4.38. Middle school Grand Mean levels were the same for KCS and Gallup at 4.10. High school scores for Gallup were reported at 3.77 with KCS reported as .03 higher with a score of 3.80. Elementary school students reflected the highest levels of engagement. Middle school student engagement fell in the middle range of scores. High school student engagement scores were the lowest for both Gallup and Kanawha County Schools.

The seven item stems are organized in Table 8 from the greatest item Grand Mean score to the lowest item Grand Mean score. A similar scoring pattern for all programmatic levels was revealed at the school, county and Gallup levels. For example, the item stem, *I have a best friend at school* reflected the highest scores for all programmatic levels at the school, county, and Gallup levels. The remaining six item stems had similar scores in decreasing order at all programmatic levels at the school, county, and Gallup levels. These survey item stems are included in Table 7 in descending order from more engaged to less engaged. The lowest scoring item stem was *In the last seven days, I have received recognition or praise for doing good*

schoolwork. Elementary school students reported higher levels of engagement followed by middle school and then high school students.

Table 8

Gallup Poll Student Engagement by Grand Mean Overall and Item Analysis

Item Stem	County Grand Mean Per item			Gallup Grand Mean Per item		
	Elem	MS	HS	Elem	MS	HS
1. I have a best friend at school.	4.81	4.70	4.47	4.68	4.70	4.47
3. My teachers make me feel my school work is important.	4.62	4.27	3.94	4.58	4.27	3.94
7. I have at least one teacher who makes me excited about the future.	4.57	4.23	3.82	4.52	4.23	3.82
6. My school is committed to building the strengths of each student.	4.47	4.04	3.80	4.45	4.04	3.80
2. I feel safe in this school.	4.45	4.00	3.66	4.34	4.00	3.66
4. At this school, I have the opportunity to do what I do best every day.	4.34	3.92	3.51	4.26	3.92	3.51
7. In the last seven days, I have received recognition or praise for doing good schoolwork.	4.12	3.55	3.21	3.99	3.55	3.21
Overall Grand Mean	4.48	4.10	3.80	4.38	4.10	3.77

5 point scale: 1 = strongly disagree, 5 = strongly agree.

Gallup reported school overall Grand Mean data are represented in Table 9. Overall Grand Mean school scores were reported for the three programmatic levels in Kanawha County. Elementary schools Grand Mean for 2014-2105 was 4.48, the middle school Grand Mean was 4.10, and the high school Grand Mean was 3.80. Overall Grand Mean scores ranged from 3.00 – 4.99. Elementary schools demonstrated student engagement levels at the higher interval levels (3.75-4.99) compared to the secondary school interval levels (3.00-4.49).

Table 9

Gallup Poll Survey Level of Student Engagement by School Overall Item Grand Mean

Student Engagement Grand Mean	Number of Elementary Schools	Number of Secondary Schools
3.00-3.24		1
3.25-3.49		0
3.50-3.74		4
3.75-3.99	1	9
4.00-4.24	1	8
4.25-4.49	19	2
4.50-4.74	18	
4.75-4.99	1	

Total Number of Schools: Elementary = 40, Secondary = 24

Gallup researchers also reported Kanawha County Schools' student engagement levels in percentages. An interview with one of the researchers revealed that the Grand Mean and percentages are derived by mathematical algorithms that are more complex than common statistical measures; therefore, the Grand Mean and percentages do not reflect the same exact data measure. It stands to reason that an examination of both Grand Mean and percentages gives additional insight into the student engagement levels of Kanawha County students because Grand Mean scores are identified from Gallup to the item level and percentages are familiar representations.

Schools in Kanawha County received a school percentage score for the level of student engagement. Table 10 illustrates the distribution of those percentage scores by school level student engagement. Student engagement percent levels by school range from 25% – 99%. Similar to the Grand Mean data in Table 8, the elementary schools show greater student engagement at interval levels 60 – 99% percent. Secondary schools mean percent student engagement scores fall between 20 – 79%. A mean percent of 80.38 was calculated for elementary school student engagement. Mean percent student engagement levels were calculated at 52.13 for secondary schools.

Table 10

Gallup Poll Survey Level of Student Engagement by School Percentage

Percentage of Engaged Students	Number of Elementary Schools	Number of Secondary Schools
0-9		0
10-19		0
20-29		1
30-39		3
40-49		6
50-59		6
60-69	4	7
70-79	18	1
80-89	15	
90-99	4	

Total Number of Schools: Elementary = 40, Secondary = 24.

A significant difference was found between the mean percent student engagement for elementary schools compared to that of secondary schools, with elementary schools having a significantly higher level of student engagement. A t-test for independent groups resulted in a statistic of $t = 11.55$ with a large effect size Cohen's $d = 2.85$, effect size of $r = .82$. Significance was attained at 0.000 where $p < .05$. Table 11 illustrates these data.

Table 11

Gallup Poll of Mean Percent Student Engagement Levels Per Programmatic Level

Programmatic Level	M	SD	t	p
Elementary	80.38	7.40		
Secondary	52.13	12.20	11.55	.000*

*p<0.05

Question 2: What are the instructional philosophical orientations (IPO) of the principals** in **Kanawha County Schools?

The results from the *Instructional Philosophy Survey* were analyzed to determine the principal's instructional philosophical orientation (IPO). The principals were asked to rate their level of agreement on a scale from 1 – 7 (1 = little agreement, 4 = moderate agreement, 7 = strong agreement, or somewhere in between). The survey items were organized by a pattern of the instructional models. The 28 item survey included seven item stems for each of the instructional models (Table 12). Items 1 – 4 denoted the pattern: (1) personal model item, (2) social model item, (3) information processing model item, and the (4) behavioral systems model item. Each of the next six groups followed this same pattern of questioning – a personal model question followed by a social model question and an information processing question, and then a behavior systems question.

Table 12

Instructional Philosophy Survey Item Stem Grouped By Instructional Model

Model	Item Stem	
Personal	1.	Students should have control over the selection of activities and their own instructional goals.
	5.	Instruction should emphasize the maximization of unique personal development.
	9.	The teacher should allow the student to handle his or her own learning.
	13.	The teacher should provide an environment that increases the student's capacity to develop himself/herself.
	17.	Teachers should keep the students' feelings and personal problems at the center of the teaching process.
	21.	The student must take responsibility for initiating and maintaining learning activities.
	25.	The teacher should accept responses in order to insure that students feel no judgment on their creative expression.
Social	2.	The teacher should primarily use group problem solving.
	6.	Students learn best through social involvement in group investigations.
	10.	The teacher should take a role as a part of the group and become an active learner with the students.
	14.	Teaching through real world experiences in a democratic setting is best for student success.
	18.	The student's well-being is closely related to the larger social structure.
	22	Instruction should emphasize the relationship of the person to society.
	26.	The teacher should act as an academic counselor responding to a variety of learner demands.
Information Processing	3.	Concepts rather than basic facts are the basis of knowledge.
	7.	Students should learn concepts first and then clarify definitions.
	11.	Learning styles should be the primary factor in deciding how to teach.
	15.	The teacher should keep student inquiry directed toward the process of the investigation itself.
	19.	The school must identify organized bodies of knowledge for instruction.
	23.	Lectures and demonstrations lead to the most meaningful learning.
	27.	The teacher should retain control of the intellectual structure of the classroom.
Behavioral Systems	4.	The teacher's task is one of establishing behaviors and then bringing those behaviors under control.
	8.	The teacher should spend the majority of time explaining new material.
	12.	The sequence of learning should be broken down into very small steps to virtually ensure correct responses.
	16.	Teaching basic skills directly is best for student success.
	20.	The teacher should define all goals and objectives in terms of observable behavior.
	24.	Programmed or computer simulated instruction is successfully used with all subject areas and grade levels.
	28.	Behavior modification should be used to extinguish objectionable behavior as well as to establish behavior responses in subject matter areas.

The principal surveys were analyzed to determine the Instructional Philosophy Orientation (IPO) profile for each principal participant. The *Instructional Philosophy Survey Scoring Sheet/Answer Key* (Appendix B) was used with each principal survey to calculate their IPO profile. Scores were entered for each survey item in the appropriate instructional models column and then tallied for the four instructional models. The final score range was 14 – 49 with a median score of 32. Low scores were identified as 0-31 and high scores were labeled from 32-49. The four scores obtained were categorized as either high preference (32 - 49) for that particular instructional model or a low preference (0 – 31) for that instructional model. For example, one principal's calculated survey exhibited: P = 38, S = 39, I = 31, and B =32. The higher the score, the more comfortable and committed the principal identified with this family of models and instructional tasks (Armstrong, 2014). This example principal's profile would be recorded as H, H, L, and H. The principal has a high preference for the personal model, social model, and the behavioral systems model and a low preference for the information processing model. This example administrator's IPO profile would be recorded as HHLH.

Every principal received an IPO profile. Table 13 represents the IPO for all elementary and secondary principals. Profiles were grouped by those scoring with a majority of high scores (majority high preference = 3 or 4 high scoring models), those scoring 2 high models and 2 low models (equally high/low preference), and those scoring with a majority of low models (majority low preference = 3 or 4 low).

Almost 44% (n = 28) of all principals have a high preference for the instructional models. Approximately 29% (n=19) of the group of all principals scored in the equally high/low category and approximately 26% (n = 17) have a low preference for the instructional models. Almost half (n=19) of the elementary principals have a high preference for the instructional models, followed

by 32.5% (n = 13) of the elementary principals with an equally high/low preference, and 20% of the elementary principals (n = 8) with a low preference for the instructional models. Thirty-seven and one-half percent (n = 9) of the secondary principals have a high preference for the majority of the instructional models. Almost 30% (n = 19) of the secondary principals have an equally high/low preference for the instructional models and 26.56% (n = 17) have a majority low preference for the instructional models.

Table 13

Instructional Philosophical Orientation (IPO) Profiles by Level of Preference

Profile	Majority High		Equally High/Low		Majority Low	
	n	%	n	%	n	%
Elementary Principals	19	47.5	13	32.5	8	20.0
Secondary Principals	9	37.5	6	25.0	9	37.5
All Principals	28	43.75	19	29.69	17	26.56

Majority High Preference = 3 or 4 High Preference for Instructional Models
Equally High/Low = 2 High and 2 Low Preference for Instructional Models
Majority Low Preference = 3 or 4 Low Preference for Instructional Models

Further analysis of the principal's instructional philosophical orientation was conducted beyond the IPO profile. Table 14, *Instructional Philosophical Orientation (IPO) by Level of Preference for each Instructional Model*, represents the breakdown by each of the four instructional models that make up the four model IPO profile. Elementary principals' scores reveal the highest preference for the social model, followed by the personal model, information processing, and behavioral systems. Secondary principals rated the social model highest followed by information processing, the behavioral model and personal model. Although both groups rated the social instructional model the highest, there was a much greater percentage within the group of elementary principals that preferred social than that of the secondary principals. Elementary principals have an overwhelming (87.5%) preference for the social

model followed by the personal model (62.5%). Nearly 50% of the secondary administrators prefer the information processing model and nearly 50% of the administrators prefer the behavioral model. The secondary principals do not show a strong preference for any particular model and only 33% of the secondary principals prefer the personal model.

Table 14

Instructional Philosophical Orientation (IPO) Profiles by Level of Preference for each Instructional Model

	Personal	Social	Information	Behavioral
Elementary Principals	25H (62.5%) 15L (37.5%)	35H (87.5%) 5L (12.5%)	21H (52.5%) 19L (47.5%)	18H (45%) 22L (55%)
Secondary Principals	8H (33%) 16L (66%)	14H (58.3%) 10L (41.7%)	13H (54.2%) 11L (45.8%)	11H (45.8%) 13L (54.2%)

Question 3: What is the differences in the level of student engagement due to the principal's IPO?

Full Instructional Philosophy Orientation (IPO) Profile Analysis

Differences in the level of student engagement due to the principals' IPO profile were analyzed using a one-way Analysis of Variance. For the independent variable, the principals' IPO profiles were categorized as majority high preference for each of the four instructional models, equally high/low preference for each of the four instructional models, and majority low preference for each of the four instructional models. For the dependent variable the mean percent level of student engagement was calculated for schools of all the principals with a majority high IPO profile level categorized according to elementary, secondary, and all schools; the mean percent level of student engagement was calculated for schools of all the principals with an equally high/low IPO profile level categorized according to elementary, secondary, and

all schools; and the mean percent level of student engagement was calculated for schools of all the principals with a majority low IPO profile level and categorized by elementary, secondary, and all schools. Results are illustrated in Table 15.

Elementary principals with a majority high IPO profile came from schools with a mean 81.32% level of student engagement. Elementary principals with an IPO profile of equally high/low worked in schools with a mean 79.61% level of engagement. Elementary principals with an IPO profile of majority low had a school mean 79.38% level of engagement.

Secondary principals with a majority high IPO profile represented schools with a mean 55.11% level of engagement. Secondary principals with an IPO profile of equally high/low worked in schools with a mean 48% level of engagement. Secondary principals with an IPO profile of majority low had a school mean 51.88% level of engagement.

All principals categorized with a majority high IPO profile worked in schools with a mean 72.89% student engagement level. Those principals with an equally high/low IPO profile represented schools with a mean 69.63% student engagement level. Principals with a majority low IPO profile had a school mean 64.82% student engagement level. With principals grouped according to their IPO profile, comparisons were made between these groups concerning the mean percent level of student engagement for their schools using an ANOVA statistic. There was no significant difference in student engagement ($p < 0.05$) between groups from elementary, secondary, or all principals with the majority high IPO profile, the equally high/low IPO profile, or the majority low IPO profile.

Table 15

Full Principals' IPO Profile and Mean Percent Level of Student Engagement

	Full IPO Profile Level							
	Majority High		Equally High/Low		Majority Low			
	Mean Percent Level of Engagement							
School Level	M	SD	M	SD	M	SD	F	P
	(n = 19)		(n = 13)		(n = 8)			
Elementary	81.32	7.90	79.61	6.64	79.38	8.07	.284	.755
	(n = 9)		(n = 6)		(n = 9)			
Secondary	55.11	9.69	48	10.88	51.88	15.39	.593	.562
	(n =28)		(n = 19)		(n = 17)			
All schools	72.89	14.99	69.63	17.04	64.82	18.63	1.248	.294

*p < 0.05

Instructional Philosophy Orientation (IPO) by Instructional Model Analysis

All Principals

Further analysis was conducted to determine if there was any significant difference in the school's mean level of student engagement due to all principals' IPO levels of high or low for the personal, social, information processing, or behavioral systems instructional models using a t-test for independent groups. All principals were grouped according to the IPO level of high or low for each instructional model. Then comparisons were made between these groups concerning the mean percent level of student engagement for their schools. Table 16 includes the findings.

Principals with IPOs of high preference for the personal model had a mean 73.91% student engagement score. Those principals with IPOs indicating low preference for the personal model represented schools with a mean 65.39% student engagement level. Principals with IPOs

of high preference for the social model had a mean 72.88% student engagement score. Those principals with IPOs indicating low preference for the social model represented schools with a mean 59.67% student engagement level. With all principals grouped according to the IPO level of high or low for these particular models (Personal or Social), comparisons were made between these groups concerning the mean percent level of student engagement for their schools using a t-test statistic. Significance was attained ($p < 0.05$) with the personal ($p = .04$) and social models ($p = .006$).

Principals with high preference for the information processing model had a mean 69.29% student engagement score. Those principals with IPOs indicating low preference for the information processing model represented schools with a mean 70.33% student engagement level. Principals with high preference for the behavioral systems model had a mean 70.65% student engagement score. Those principals with IPOs indicating low preference for the behavioral systems model represented schools with a mean 69.05% student engagement level. With all principals grouped according to IPO level of high or low for these particular models (Information Processing or Behavioral Systems), comparisons were made between these groups concerning the mean percent level of student engagement for their schools using a t-test statistic. Significance was not attained ($p < 0.05$) with the information processing ($p = .806$) or the behavioral systems model ($p = .706$).

Table 16

All Principals' Instructional Philosophical Orientation (IPO) by Instructional Model and School Mean Percent Level of Student Engagement

Instructional Model	IPO Level All Principals	Mean Percent Level of Student Engagement	SD	t	P
Personal	H	73.91	14.68		
	L	65.39	17.77	2.097	.04*
Social	H	72.88	14.43		
	L	59.67	19.87	2.829	.006*
Information Processing	H	69.29	15.37		
	L	70.33	18.30	.247	.806
Behavioral Systems	H	70.65	16.29		
	L	69.05	17.20	.379	.706

*$p < 0.05$

Elementary Principals

Further analysis was conducted to determine if there was any significant difference in the school's mean level of student engagement due to elementary principal's IPO levels of high or low for the personal, social, information processing, or behavioral systems instructional models using a t-test for independent groups. Elementary principals were grouped according to the IPO level of high or low for each instructional model. Then comparisons were made between these groups concerning the mean percent level of student engagement for their schools. Table 17 illustrates these findings.

Elementary principals with IPOs of high preference for the personal model had a mean 80.64% student engagement score. Those elementary principals with IPOs indicating low

preference for the personal model represented schools with a mean 79.93% student engagement level. Elementary principals with IPOs of high preference for the social model had a mean 80.40% student engagement score. Those elementary principals with IPOs indicating low preference for the social model represented schools with a mean 80.20% student engagement level. With elementary principals grouped according to the IPO level of high or low for these particular models (Personal and Social), comparisons were made between these groups concerning the mean percent level of student engagement for their schools using a t-test statistic. Significance was not attained ($p < 0.05$) with the personal ($p = .774$) or social models ($p = .956$).

Elementary principals with high preference for the information processing model had a mean 79.19% student engagement score. Those elementary principals with IPOs indicating low preference for the information processing model represented schools with a mean 81.68% student engagement level. Elementary principals with high preference for the behavioral systems model had a mean 81.28% student engagement score. Those elementary principals with IPOs indicating low preference for the behavioral systems model represented schools with a mean 79.64% student engagement level. With elementary principals grouped according to the IPO level of high or low for these particular models (Information Processing or Behavioral Systems), comparisons were made between these groups concerning the mean percent level of student engagement for their schools using a t-test statistic. Significance was not attained ($p < 0.05$) with the information processing ($p = .293$) or the behavioral systems model ($p = .493$).

Table 17

Elementary Principals' Instructional Philosophical Orientation (IPO) by Instructional Model and School Mean Percent Level of Student Engagement

Instructional Model	IPO Level Elementary Principals	Mean Percent Level of Student Engagement	SD	t	p
Personal	H	80.64	7.16		
	L	79.93	8.04	.289	.774
Social	H	80.40	7.08		
	L	80.20	10.43	.056	.956
Information Processing	H	79.19	7.69		
	L	81.68	7.06	1.065	.293
Behavioral Systems	H	81.28	8.08		
	L	79.64	6.91	.693	.493

*$p < 0.05$

Secondary Principals

Analysis was also conducted to determine if there was any significant difference in the school's mean level of student engagement compared to secondary principal's IPO levels of high or low for the personal, social, information processing, or behavioral systems instructional models using a t-test for independent groups. Secondary principals were grouped according to the IPO level of high or low for each instructional model. Then comparisons were made between these groups concerning the mean percent level of student engagement for their schools. Table 18 illustrates the findings.

Secondary principals with IPOs of high preference for the personal model had a mean 52.88% student engagement score. Those secondary principals with IPOs indicating low

preference for the personal model represented schools with a mean 51.75% student engagement level. Secondary principals with IPOs of high preference for the social model had a mean 54.07% student engagement score. Those secondary principals with IPOs indicating low preference for the social model represented schools with a mean 49.90% student engagement level. With secondary principals grouped according to the IPO level of high or low for these particular models (Personal or Social), comparisons were made between these groups concerning the mean percent level of student engagement for their schools using a t-test statistic. Significance was not attained ($p < 0.05$) with the personal ($p = .837$) or social models ($p = .366$).

Secondary principals with high preference for the information processing model had a mean 53.31% student engagement score. Those secondary principals with IPOs indicating low preference for the information processing model represented schools with a mean 50.73% student engagement level. Secondary principals with high preference for the behavioral systems model had a mean 53.28% student engagement score. Those secondary principals with IPOs indicating low preference for the behavioral systems model represented schools with a mean 51.15% student engagement level. With secondary principals grouped according to the IPO level of high or low for these particular models (Information Processing or Behavioral Systems), comparisons were made between these groups concerning the mean percent level of student engagement for their schools using a t-test statistic. Significance was not attained ($p < 0.05$) with the information processing ($p = .616$) or the behavioral systems model ($p = .681$).

Table 18

Secondary Principals' Instructional Philosophical Orientation (IPO) by Instructional Model and School Mean Percent Level of Student Engagement

Instructional Model	IPO Level Secondary Principals	Mean Percent Level of Student Engagement	SD	t	P
Personal	H	52.88	11.95		
	L	51.75	12.69	.209	.837
Social	H	54.07	10.25		
	L	49.40	14.64	.922	.366
Information Processing	H	53.31	10.16		
	L	50.73	14.64	.508	.616
Behavioral Systems	H	53.28	9.84		
	L	51.15	14.22	.416	.681

*$p < 0.05$

Question 4: What is the difference between principals' IPO based upon principals' demographics (total years of experience as principal, total years of experience as a principal in his/her current school, primary subject taught as a teacher, and sex)?

The principals' demographic data were measured by their total years of experience as principal, total years of experience as a principal in the current school, primary subject taught as a teacher, and sex. Data related to the principals' years of experience and years of experience in the current school is provided in Figure 3. Forty-two principals have less than 10 years of experience overall and 57 principals have less than 10 years of experience in the current school. Twenty-two principals have over 10 years of experience and seven principals have over 10 years of experience in the current school. Most principals have less experience at their current schools.

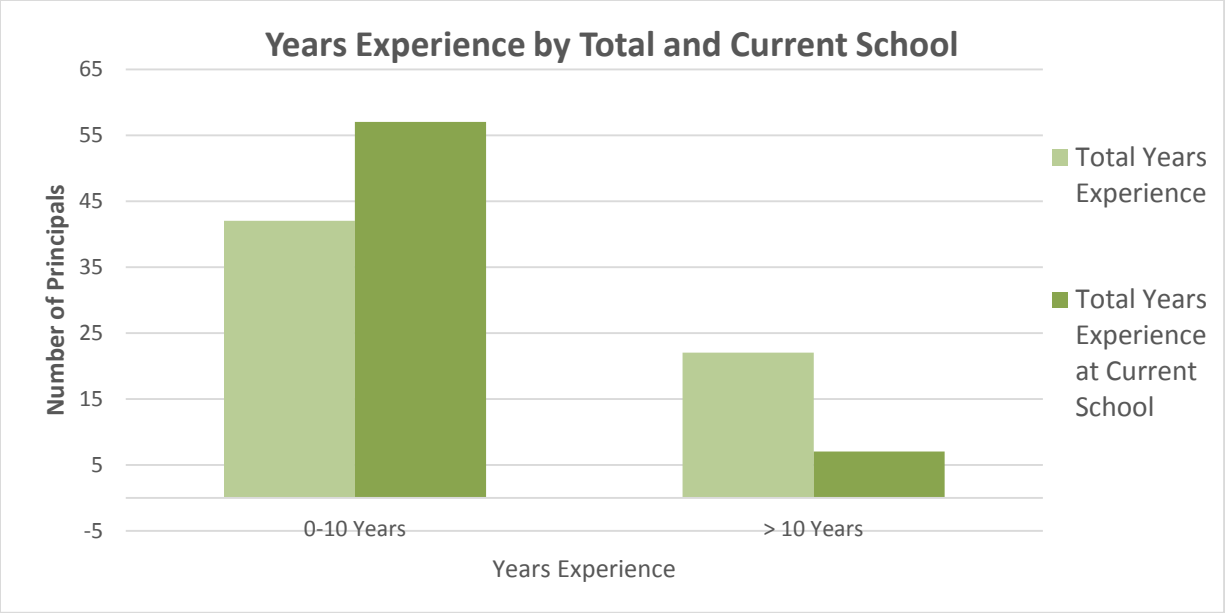


Figure 3. *Years of Experience by Total Years as Principal and Total Years as Principal at Their Current School*

Demographic data related to the sex of the administrators is illustrated in Figure 4. Females represent 85% of the elementary principals and 25% of the secondary principals. Males represent 15% of the elementary principals and 75% of the secondary administrators.

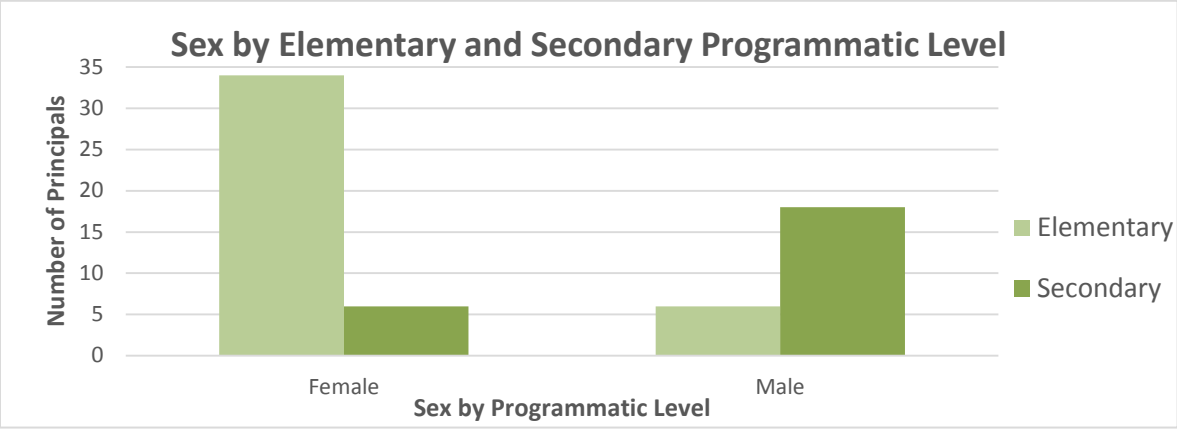


Figure 4. *Sex by Elementary and Secondary Programmatic Level*

Demographic data related to the principals' primary subjects taught were compressed due to the small cell size into two groups. Groups were identified as elementary content (n = 40) and secondary content (n =24).

Demographic Data compared to Full IPO Profile

Demographic data were compared to the principals' full instructional philosophy profiles. These findings are illustrated in Table 19. Chi-square 3x2 and 2x2 tables were generated to analyze the principals' demographic data compared to their instructional philosophical orientation levels. Chi-square probability results of .788 for the principals' years of experience categories of early career ($0 \leq 10$ years) and later career (> 10 years) did not reach the significance level ($p < 0.05$). The analysis for the total years of experience as a principal in the current school was eliminated due to the cell's expected count being less than five in the Chi-square tests. Chi-square probability results of .083 for the categories of subjects taught in elementary and secondary did not reach the significance level ($p < 0.05$). The analysis between sex and the full IPO levels did not reach the significance level ($p<0.05$) for male or female with a Chi-square probability of .810.

Table 19

Demographic Data by Full IPO

	Years' Experience		Subjects Taught		Sex	
	Early Career	Later Career	Elem Content	Secondary Content	Male	Female
IPO Profile						
Majority High	19	9	12	7	11	17
Equally High/Low	13	6	12	4	6	13
Majority Low	10	7	5	9	7	10
Chi-square probability	.788		.083		.810	

*p < 0.05.

Demographic Data compared to IPO by Instructional Models

Demographic data related to the total years of experience as principal, total years of experience as a principal in the current school, primary subject taught as a teacher, and sex were analyzed by comparing these demographics to the IPO preference for each of the four instructional models. Comparisons were made using 2 x 2 Chi-square tables.

Table 20 illustrates the principal's IPO preference for each of the instructional models as high or low and compares the preferences to those principals early in their careers with $0 \leq 10$ years of experience and those principals later in their careers with greater than 10 years of experience. There were no significant differences found due to the number of years of experience across the instructional models. The analysis for the total years of experience as a principal in the current school was eliminated because the expected cell count was less than five in the Chi-square tests.

Table 20

Years of Experience as Principal by IPO Instructional Model

Years' Experience	Instructional Model: Personal		Social		Information Processing		Behavioral Systems	
	H	L	H	L	H	L	H	L
Early Career 0 ≤ 10 years	23	19	33	9	21	21	21	21
Later Career >10 years	10	12	16	6	13	9	8	14
Chi-square Probability	.479		.600		.489		.298	

*p < 0.05

Table 21 illustrates the principal's IPO preference for each of the instructional models as high or low and compares the preferences to those principals who primarily taught elementary school content and those principals who primarily taught secondary content courses. There were significant differences found with the personal instructional model (p = .024) and the social instructional model (p=.008) where significance is attained at p < 0.05.

Table 21

Subjects Taught As a Teacher by IPO Instructional Model

Subjects Taught	Instructional Model: Personal		Social		Information Processing		Behavioral Systems	
	H	L	H	L	H	L	H	L
Elem Content	25	15	35	5	21	19	18	22
Sec Content	8	16	14	10	13	11	11	13
Chi-square Probability	.024*		.008*		.897		.948	

*p < 0.05

Table 22 illustrates the principal's IPO preference for each of the instructional models as high or low and compares the preferences to principal's sex. Twenty four males and 40 females represent the groups. There were significant differences found with the social instructional model ($p = .040$) where significance is attained at $p < 0.05$. Females have a much higher preference for the social model.

Table 22

Sex by IPO Instructional Model

	Instructional Model							
Sex	Personal		Social		Information Processing		Behavioral Systems	
	H	L	H	L	H	L	H	L
Male	11	13	15	9	14	10	13	11
Female	22	18	34	6	20	20	16	24
Chi-square Probability	.477		.040*		.518		.270	

*p < 0.05

Question 5: What is the difference in the level of student engagement due to the principal's demographics?

The principals' demographic data were compared to the level of student engagement (see Table 23). A t-test for independent groups was conducted to compare the demographic factors to student engagement. There were significantly ($p< 0.05$) higher levels of student engagement in schools with female principals ($p< 0.000$). Principals who taught elementary content ($p< 0.000$) had significantly ($p< 0.05$) higher levels of student engagement. No significance was found with the demographic data for years of experience ($p< 0.849$) or years of experience at the current school ($p< 0.635$).

Table 23

Student Engagement Due to Demographics

Demographic	Demographic Factors	Student Engagement	t	P
Gender	Male	58%		
	Female	77%	4.946	0.000*
Years of Experience	Early	70%		
	Late	69%	0.191	0.849
Years of Experience at Current School	Early	70%		
	Late	66%	0.477	0.635
Subjects Taught	Elementary	78%		
	Secondary	55%	6.559	0.000*

*$p < 0.05$.

Question 6: What is the difference in the level of student engagement due to the interaction of IPO and demographics?

Two-way Analysis of Variance (ANOVAs) tests were conducted to determine differences in mean student engagement levels due to interactions between two independent variables. Ten Two-way ANOVAs were conducted on the full IPO and all demographics. Ten Two-way ANOVAs were conducted on each of the instructional models and the demographics. Data related to the interaction of the social instructional model and gender are found in Table 24 and Figure 5. Significance ($p< 0.05$) was found with the interaction of the social instructional model and gender ($p<0.018$). Significance was found in student engagement between males' preference of high or low for the social model compared to the little difference between the female preference of high or low. Male principals who had a higher preference for the social model had significantly higher levels of student engagement. No significance was found with the full IPO, demographics, and student engagement (see Tables 25 – 43 in Appendix K and Figure 6 – Figure 24 in Appendix L).

Table 24

Student Engagement and the Interaction of the Social Instructional Model and Gender

Gender	Social Level	Student Engagement	F	P
Male	H	65%	5.944	0.018*
	L	47%		
Female	H	76%		
	L	78%		

*p < 0.05

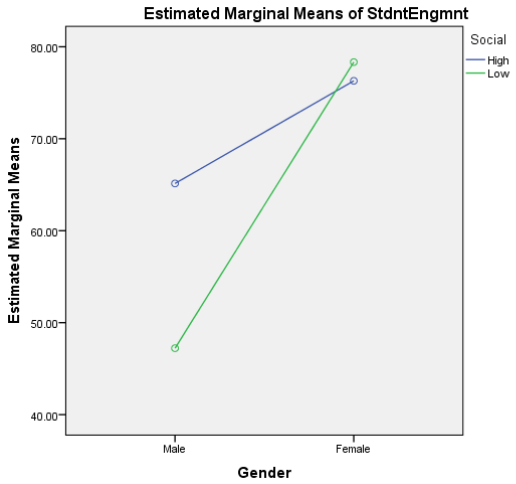


Figure 5. *Student Engagement and the Interaction of the Social Instructional Model and Gender*

Ancillary Findings

Principals were asked to add any other comments on Part C of the *Instructional Philosophy Survey*. Twelve comments were received from 18% of the principal surveys. The comments were organized into four categories: 1) Teaching and Learning, 2) Student Engagement, 3) Accountability, and 4) Survey. Six comments were focused on teaching and learning. One principal was reminded of expeditionary learning and liked it. Another principal thought the questions depended on the grade level and were not practical. Three comments related to reasons for problems with the classroom environment. Comments related to student

engagement included the statements *student engagement depends on the culture* and *we engage students when we educate the whole child*. The principals' comments revealed some frustration with classroom factors that are out of control of the administrator. Principals believe variables such as accountability and culture affect levels of student engagement in schools. All twelve comments are documented in Appendix J.

Summary of Findings

This chapter described the data analysis and findings in this study for the purpose of examining the principals' instructional philosophical orientation and students' level of engagement in their schools. Principals in Kanawha County Schools were asked to complete a survey on their beliefs about a variety of instructional models allowing for the creation of the administrator's instructional philosophical orientation. The surveys were analyzed and considered with 13,075 student engagement surveys from Gallup data. The data were analyzed using descriptive statistics, t-test for independent groups, One-way Analysis of Variance, 3x2 and 2x2 Chi-square tests, and Two-way Analysis of Variance tests.

The level of student engagement in Kanawha County School was described in relation to the district level and national Gallup statistics. KCS elementary students were found to be more engaged than KCS secondary students. A large effect size was found with statistical significance.

Principals' instructional philosophical orientations were described by their full IPO profiles and by the level of preference for each of the four instructional models. Elementary principals favored the social and personal models whereas the secondary principals favored the social model followed by the information-processing model.

Mean percent levels of student engagement were compared to all principals' full IPO profiles with no statistical significance. However, when the principals' IPO levels were considered by each of the instructional models to the mean percent levels of student engagement, significance was attained with the personal and social models. Principals with a preference for the social or personal models had significantly higher student engagement.

The principals' demographic data was also compared to their full IPO profiles and to their IPO by instructional models. Statistical significance was attained with the personal and social models and elementary principals. Female principals preferred the social model at a significantly higher rate than male principals. Principals who taught elementary content preferred the social and personal instructional models significantly more often than principals who taught secondary content.

The principals' demographics were compared to the level of student engagement. Statistical significance was attained with gender and subjects taught. Female principals had significantly higher levels of student engagement. Principals who taught elementary content had significantly higher levels of student engagement.

Differences in mean levels of student engagement due to the interaction of IPO and demographics were analyzed. Significance was found with the interaction of the social instructional model and gender. Male principals with a higher preference for the social model had a significantly higher level of student engagement.

Comments made by the principals reveal frustration with classroom related factors that are beyond the control of the administrator. Principals believe variables such as accountability and culture affect levels of student engagement.

CHAPTER FIVE

CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

This chapter includes the purpose, demographic data, and methods used in the study. A summary of the findings is followed by conclusions organized by four research questions. The chapter ends with implications, recommendations for further study, and concluding remarks.

Purpose of the Study

The purpose of this study was to examine the principals' instructional philosophical orientation (IPO) and the level of student engagement in their schools. The principals' full IPO was considered holistically with a cumulative profile score including ratings for the four families of instructional models: Personal, Social, Information Processing, and Behavioral Systems. The IPOs were further examined by each of the instructional models individually. The level of student engagement was considered at the national Gallup level, Kanawha County Schools level, school level, and through an item analysis. The study sought to determined differences in the principals' IPO and student engagement by all schools, elementary schools, and secondary schools. In addition, the study sought to determine differences in principals' IPO levels according to demographic data. Finally, principals' comments allowed for other information related to the principals' IPO or student engagement. The following six research questions guided the study. The overarching question to be answered was "What is the relationship between principals' instructional philosophical orientation and the level of student engagement in their schools?"

1. What is the level of engagement of Kanawha County School's students?
2. What are the Instructional Philosophical Orientations (IPO) of the principals in Kanawha County Schools?

3. What is the difference in the level of student engagement due to the principal's IPO?
4. What is the difference between principals' IPO based upon principals' demographics (total years of experience as a principal, total years of experience as a principal in his/her current school, primary subjects taught as a teacher, and sex)?
5. What is the difference in the level of student engagement due to the principal's demographics?
6. What is the difference in the level of student engagement due to the interaction of IPO and demographics?

Demographic Data

The population for this study included all the principals in Kanawha County Schools. Sixty-eight principals across 44 elementary schools, 13 middle schools, eight high schools, one alternative school, and two career technical centers completed a three part survey comprised of 28 questions related to their beliefs about instructional models. The principals were asked to respond to questions about their years of experience as a principal, years of experience as a principal in their current school, and primary subjects they taught as a teacher. The programmatic level of the administrator and sex were identified on the survey prior to distribution.

Demographic data were organized by elementary and secondary for the administrative level of the principals. Two categories were identified for years of experience named early career ($0 \leq 10$ years) and later career (> 10 years). The total years of experience at the current school followed the same two categories. Primary subjects taught were listed on the survey as English Language Arts, Math/Science, Fine Arts/Related Arts, Elementary, Special Education,

Social Studies, and Other. The subjects taught were ultimately condensed and renamed elementary and secondary due to a small cell size issue when analyzing the data.

Methods

This study was completed using quantitative methods. A three part *Instructional Philosophy Survey* (Armstrong, 2014) was given to the 68 principals. The survey included 28 items related to instructional models, demographic data, and one open ended comments section. Part A asked participants to respond using a seven point scale to indicate their level of agreement from 1 = little agreement to 7 = strong agreement concerning principals' preferences for each of the four families of instructional models. Part B asked for demographic data and Part C asked respondents to provide any other comments. An expert panel of district level administrators validated the survey instrument providing feedback with minimal changes in wording to the original survey.

The survey was distributed at a county-wide face to face principals' meeting. A survey cover letter was provided to the principals and read aloud by the county curriculum specialists. A box was provided for depositing the completed surveys. Two curriculum specialists delivered the surveys to the researcher following the meeting. All of the 68 principals returned the surveys.

Other data were provided by the 2014-2015 Gallup survey of 13,075 students in Kanawha County Schools. This survey gathered data concerning level of student engagement in Kanawha County Schools. The seven item survey results were considered for each school, the district, and at the national Gallup level.

The data collected and examined were analyzed according to each of the four research questions. The Gallup data for each item stem was considered in response to research question number one. Grand Mean levels and mean percent levels of student engagement were reported

as descriptive interval data. A t-test for independent groups was also conducted to determine the level of significance ($p<0.05$) in response to question number one to analyze the difference in student engagement between elementary and secondary schools. For question number two, nominal data described the principals' instructional philosophy orientation profiles and their level of preference for each of the instructional models. Question number three data were analyzed using one way ANOVA and t-tests for independent groups to determine significant differences in student engagement level due to principals' full IPO profile.

Further analysis in response to question number three allowed for consideration of the differences in student engagement levels due to principals' preference for individual instructional models. Research question number four was analyzed using chi-square 3x2 and 2x2 statistical methods to determine significant differences ($p< 0.05$) in principals' full IPO levels and principals' preferences for individual instructional models due to their demographics.

Research question number five was analyzed using a t-test for independent groups to determine any significant ($p< 0.05$) differences in student engagement due to the principals' demographic data. Two-way Analysis of Variance tests were conducted to analyze the interaction of IPO and demographics for any significant differences for research question number six. The comments received by the principals were grouped according to topic and discussed in the narrative.

Summary of Findings and Conclusions

The data collected as part of this study support the following summary of findings and conclusions:

Question 1: What is the level of engagement of Kanawha County Schools' students?

Overall, the level of student engagement in Kanawha County Schools is higher at the elementary level than the secondary level. Engagement at the elementary level was significantly

higher than the secondary level when considering the mean percent level of student engagement. Item analysis of Grand Mean levels of student engagement concur with these findings that elementary students are more engaged than secondary students.

Question 2: What are the Instructional Philosophical Orientations (IPO) of the principals in Kanawha County Schools?

Overall, more than 40% of the principals in Kanawha County have a high preference for a majority of the instructional models. Half of the elementary principals have a high preference for a majority of the four instructional models. About a third of the secondary principals prefer a majority of the instructional models.

Elementary principals prefer the social and personal instructional models over the information processing and behavior systems models. Secondary principals prefer the social and information processing models over the behavior systems and personal models.

Although both groups rated the social instructional model the highest, there was a much greater percentage within the group of elementary principals that preferred social than that of the secondary. Elementary principals have an overwhelming (87.5%) preference for the social model, followed by the personal model (62.5%). Nearly 50% of the secondary administrators prefer the information processing model and nearly 50% of the administrators prefer the behavioral model. The secondary principals do not show a strong preference for any particular model and only 33% of the secondary principals prefer the personal model.

Question 3: What is the difference in the level of student engagement due to the principal's IPO?

Overall, there was no significant difference found in the level of student engagement based on the principals' full IPO profile for all, elementary, or secondary administrators. There

were significant differences in level of engagement found when the principals' IPO was considered by each instructional model individually. There was a significant difference in the mean percent level of student engagement in schools where the principal had a high preference for either the personal or social model of instruction. The levels of student engagement were significantly higher in these schools.

Question 4: What is the difference between principals' IPO based upon principals' demographics (total years of experience as a principal, total years of experience as a principal in his/her current school, primary subjects taught as a teacher, and sex)?

There were no significant differences found between the principals' IPO profile based upon the principals' years of experience, subjects taught, or sex. When the principals' IPO was further considered by the individual instructional models and compared to the principals' years of experience, no significant differences were found. There were significant differences found when considering the principals' IPO preference for the personal and social models based upon subjects taught. Those principals who taught elementary school had a higher preference for the social and personal instructional models than principals who taught secondary content. There was also a significant difference found when considering the principals' sex and their IPO preference for the social model. Females were shown to prefer the social instructional model.

Question 5: What is the difference in the level of student engagement due to the principal's demographics?

There were no significant differences found when comparing the years of experience or the years of experience at the current school with the levels of student engagement. However, female principals have significantly higher levels of student engagement. Principals who taught elementary content also were shown to have significantly higher levels of student engagement.

Question 6: What is the difference in the level of student engagement due to the interaction of IPO and demographics?

There was a significant difference found in the level of student engagement due to the interaction of the social model and gender. Male principals who had a higher preference for the social model had a significantly higher level of student engagement. There was no significant difference found in the interaction among IPO, student engagement and demographic data. There was no significant difference found with the other instructional models (personal, informational, or behavioral), student engagement and demographic data.

Discussion and Implications

The following discussion of implications is organized into five sections. The first section is focused on Student Engagement. Section two discusses the principals' instructional philosophical orientations. A third section considers the principals' instructional philosophical orientation profiles and the level of student engagement in their schools. The fourth section considers student engagement, the principals' demographic data, IPOs, and their responses to the comments section of the survey. A fifth section provides a brief summary of implications.

Student Engagement

The Gallup survey used in this study shows that more than half of the students in Kanawha County Schools are engaged in school. Elementary students are engaged at much higher levels than secondary students. Elementary students report they have more teachers who make them feel their school work is important. They have at least one teacher who makes them feel excited about the future. Elementary students further report they have an opportunity to do what they do best every day and they recently received praise or recognition for doing good work. Secondary students report significantly less often that they have such experiences in

school. The National Research Council emphasizes how critical engagement is as part of school improvement at the secondary school level (National Research Council, 2004).

This study provides additional evidence that administrators and teachers must consider the whole classroom environment if we expect to increase student engagement, especially at the secondary level. Elementary students report they have more opportunity for relationship building with adults and their lessons are more often personalized and relevant.

A quick glance at the organizational structure in elementary schools may provide insight. The classroom teacher is responsible for building relationships with up to 25 students (WV Code 18.5.18a). Elementary educators have more time and opportunity to build relationships with 25 students per teacher rather than 150 students per teacher in many secondary schools. A secondary teacher is expected to make strong connections with over 150 students per day. This vast difference in numbers of students provides additional challenges for the secondary administrators and teachers.

Another reason behind the higher levels of student engagement at the elementary level could be related to the fact that the elementary principals in this study were former elementary school teachers and elementary teachers (TEACH, 2014) seem to focus on *teaching students* whereas secondary teachers emphasize *teaching content.* This is possibly caused by the organizational structure in which elementary teachers are responsible for several content areas. The secondary administrators were former secondary teachers (Secondary Education Current Trends, 2015) who were the content expert in one primary area. The single content delivery in the secondary schools may not be giving students the opportunity to show their strengths through personalization or relevancy nearly as well as in the content integration in elementary schools. Secondary schools administrators and teachers might reconsider the lessons they are teaching

and revise according to the engagement level indicators and the four instructional models within the constraints of teaching such large populations of students.

Principals' IPO profiles

From the literature review we know that a principal's teaching or instructional philosophy is not only about beliefs and values but also about the teacher's behaviors in the classroom (Heimlich & Norland, 2002; Kovacevic, 2012). Less than half (43%) of the principals in Kanawha County Schools have a high preference for a majority of the teaching models. All of the teaching models are appropriate at different times in a variety of lessons (Joyce et al., 2009). Different models are better suited for certain instructional situations. Engagement is nurtured and enhanced when students experience a variety of instructional models.

This finding has implications for administrators to consider increasing their knowledge of the teaching models. School leaders must have a strong foundation of the most current knowledge of teaching and learning in order to create a culture as the school's leading learner or instructional leader. Principals must have well-defined specialized training to facilitate and act as the lead learner (Bouchamma, Basque, & Marcotte, 2014).

This study shows that Kanawha County School elementary principals prefer a majority of the teaching models more than the secondary administrators. This finding indicates that elementary principals are more likely to embrace a full repertoire of instructional models. Secondary principals may be less likely to promote a wide variety of instructional strategies that are in opposition to their personal beliefs. This is in alignment with the research on philosophical beliefs, values, and attitudes that exist in a school and how those beliefs play a critical role in the development of successful schools (Conti, 2007; MacNeil, Prater, & Busch, 2009).

This study also shows that a majority of the elementary principals prefer the personal and social models. This suggests that elementary principals value the importance of the student creating meaning and direction for their own lives. The secondary principals agree with the elementary principals' preference for the social model's development of living in a community or democratic setting. These principals may be more likely to promote small group instruction and student to student interaction. It is important to note, however, even though both groups rated the social instructional model the highest, there was a much greater percentage within the group of elementary principals that preferred social than that of the secondary. Elementary principals have an overwhelming (87.5%) preference for the social model followed by the personal model (62.5%). Nearly 50% of the secondary administrators prefer the information processing model and nearly 50% of the administrators prefer the behavioral model. The secondary principals do not show a strong preference for any particular model and only 33% of the secondary principals prefer the personal model.

It makes sense that the secondary principals prefer the information processing model's focus on ways to learn and organize information followed by the behavior modification model that concentrates on observable objectives, skill building, and behavioral modification when considering the environment of most high school classrooms today. Secondary schools are accountable for an inconceivably large amount of content (Common Core State Standards, 2015). Often, teachers deliver the content in relatively short 40-45 minute periods of instruction for up to 35 students through whole group instruction. Students practice for mastery as homework. This organizational structure works in contrast to the indicators for increasing student engagement such as the time needed for collaborative groups, problem solving, and offering more personalized learning environments.

Considering the Principals' IPO Profiles and Student Engagement Levels in Their Schools

Gordon (2013) reminded in his book, *Building Engaged Schools,* that studies show school leadership does have an effect on student engagement. David Quinn (2002) also concluded in his study on leadership behaviors across 24 schools that strong leadership promotes student engagement, which in turn is the most effective means to increase student achievement. However, in the current case study of 64 schools, there was no significant difference found in the level of student engagement due to the principals' full IPO profile. This finding was surprising and contrary to the researcher's hypothesis that the greater the preference for all the instructional models, the higher student engagement levels.

Although principals with a high majority preference profile came from schools with 72.89% student engagement levels and principals with a majority low preference profile had school engagement levels of 64.82%, these differences were not significant at $p<0.05$ with a p value of .294. These results leave this researcher questioning the usefulness of the whole IPO profile.

There were significant differences when considering the IPO individual instructional models preferences and mean levels of student engagement. It made sense that significance was found with principals who had a high preference for the personal model and social model also had high levels of student engagement in their schools. The learning environment of the personal family of models is in direct alignment with Gallup's student engagement concepts of (a) providing students with the opportunity to do what they do best, (b) the need of having a friend at school, and (c) feeling safe. This personal (nondirective) teaching model supports the student making their own choices about what they want to learn (Joyce et al., 2009). The social family of model's learning environment builds relationships and nurtures student engagement by

improving student social skills, giving students a feeling of belonging. The social models are designed to help students analyze real world issues and see how schoolwork is important and meaningful for life after school (Joyce et al., 2009).

Student Engagement, Demographic Data, Principals' IPO profiles, and Comments

The usefulness of the full IPO profile was again brought into question when compared to demographic data of the principals. There was no significance found when comparing the full IPO profiles based on the principals' years of experience, subjects taught, or sex.

However, when comparing the principals' individual instructional models preferences to the subjects taught, the personal and social models prevailed. Those principals who taught elementary school content had higher levels of preference for the personal and social models. It is this researcher's supposition that the elementary schools' organizational structure allows for more personalized and social learning opportunities. Further, the principals who taught elementary content had significantly higher levels of student engagement.

Females were found to significantly prefer the social model. It could be expected that the nurturing aspects of motherhood (Denholm, 2015) might play into the female's preference for the social model. A female's strong preference for the social model may stem from biological preferences. Females were also found to have significantly higher levels of student engagement. Males who preferred the social model also had significantly higher levels of student engagement when compared to males who had a low preference for the social model. Implications include gender specific professional development related to increasing student engagement. An increase focus on student engagement indicators when planning lessons with secondary content may prove beneficial. Consideration should be given to gender when organizing administrative teams. Including both male and females on the same administrative team may prove beneficial to increasing student engagement.

Summary

According to the 2014-2015 Gallup student survey data, 54% percent of the students in Kanawha County Schools are engaged. Elementary students are engaged at much higher levels than secondary students. The present study provides evidence that educators must consider the whole classroom environment if student engagement is going to increase at all programmatic levels. Elementary students appear to be at an advantage with smaller class sizes with more time and fewer teachers to build stronger relationships. The elementary principals were former elementary teachers and the secondary principals were former content teachers in secondary classrooms. Elementary teachers (TEACH, 2014) focus on teaching students, thereby building relationships and secondary teachers concentrate on teaching content (Secondary Education Current Trends, 2015) to large numbers of students. Secondary administrators and teachers should rethink their lesson planning and revise according to the Gallup engagement level indicators.

Less than half of the Kanawha County Schools principals have a high preference for the instructional models. This finding has implications for administrators to increase their knowledge of the teaching models and their value in different instructional situations. Principals must be skilled in a variety of instructional strategies (Bouchamma, Basaque, Marcotte, 2014).

Elementary principals prefer the personal and social instructional models. Secondary principals value the social instructional model followed by the information processing model. The secondary organizational structure of 45 minute class periods with large numbers of students promotes a preference for the information processing and behavior systems instructional models.

There were no significant differences when comparing the principals' full IPO profiles with student engagement. However, when considering the principals' preference for the individual instructional models to mean student engagement levels, the personal and social

models show significance. Characteristics of the personal and social models instructional environment align to Gallup's (2014b) definition of student engagement. The higher the preference for each of these models, the higher the student engagement in the principal's school.

This study found demographic data findings worthy of discussion. Male principals who had a high preference for the social model had significantly higher levels of student engagement. Female principals prefer the social model more often than male principals and may possibly increase student engagement through nurturing efforts associated with the social model. Female principals were shown to have higher levels of student engagement. Principals who taught elementary school showed a preference for the personal and social instructional models. These models allow for personalized and social learning opportunities that are shown to increase student engagement (Joyce et al., 2009). Principals who taught elementary content also had higher levels of student engagement.

Recommendations for Further Research

This case study investigated the level of student engagement and the administrators' instructional philosophical orientations across 68 schools and 13,075 students. The level of student engagement was compared to the administrators' instructional philosophical orientation profiles for differences. The principals' instructional philosophical orientations were also considered against their demographic data for any differences. Based on these findings, the following recommendations for further study are made:

1. This case study was limited to Kanawha County Schools. More research on comparing elementary and secondary engagement levels with a larger population may provide additional data that would add to the knowledge base on student engagement.

2. This study surveyed the principals' preference for instructional models resulting in low levels of preference for all the models. A study related to the principals' knowledge and understanding related to the different instructional models may prove beneficial and provide further insight into the principals' philosophical orientation.
3. Further investigating the relationship between the school leader's beliefs and student engagement using more qualitative research methods may add to the literature on any perceived influence on student engagement.
4. Further research on the differences in sex of the principal and their content area expertise related to the effect on student achievement in their schools may add to the literature on demographic data and student learning.
5. The survey instrument in this study included one open-ended question. Conducting a study using more qualitative research methods may provide more understanding and reasoning behind the principals' preferences for the different instructional models.

Concluding Remarks

The findings from this study provide information for the Kanawha County Schools district level administrators and school principals. Findings define student engagement at all programmatic levels. The principals' instructional philosophical orientations are described. This case study provides a foundation for professional development designers to improve the administrators' instructional leadership expertise relating to instructional models leading to increases in student engagement levels. The study provides groundwork for including both male and females on administrative teams.

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APPENDICES

Appendix A: IRB Approval Letter

MARSHALL UNIVERSITY®
www.marshall.edu

Office of Research Integrity
Institutional Review Board
One John Marshall Drive
Huntington, WV 25755

FWA 00002704

IRB1 #00002205
IRB2 #00003206

July 27, 2015

Edna Meisel, Ed.D.
Elementary and Secondary Education, MUGC

RE: IRBNet ID# 781604-1
At: Marshall University Institutional Review Board #2 (Social/Behavioral)

Dear Dr. Meisel:

Protocol Title:	[781604-1] Investigating Principals' Philosophical Orientation and Their Students' Level of Engagement A Case Study
Expiration Date:	July 27, 2016
Site Location:	MUGC
Submission Type:	New Project APPROVED
Review Type:	Exempt Review

In accordance with 45CFR46.101(b)(2), the above study and informed consent were granted Exempted approval today by the Marshall University Institutional Review Board #2 (Social/Behavioral) Designee for the period of 12 months. The approval will expire July 27, 2016. A continuing review request for this study must be submitted no later than 30 days prior to the expiration date.

This study is for student Loujeania Maynus.

If you have any questions, please contact the Marshall University Institutional Review Board #2 (Social/Behavioral) Coordinator Bruce Day, ThD, CIP at 304-696-4303 or day50@marshall.edu. Please include your study title and reference number in all correspondence with this office.

Appendix B: Survey Instrument

Part A **Instructional Philosophy Survey**

Directions: Based on your personal instructional philosophy rank the following statements with **1 Little Agreement, 4 Moderate Agreement, 7 Strong Agreement** or somewhere in between.

	LA			MA			SA
1. Students should have control over the selection of activities and their own instructional goals.	1	2	3	4	5	6	7
2. The teacher should primarily use group problem solving.	1	2	3	4	5	6	7
3. Concepts rather than basic facts are the basis of knowledge.	1	2	3	4	5	6	7
4. The teacher's task is one of establishing behaviors and then bringing those behaviors under control.	1	2	3	4	5	6	7
5. Instruction should emphasize the maximization of unique personal development.	1	2	3	4	5	6	7
6. Students learn best through social involvement in group investigations.	1	2	3	4	5	6	7
7. Students should learn concepts first and then clarify definitions.	1	2	3	4	5	6	7
8. The teacher should spend the majority of time explaining new material.	1	2	3	4	5	6	7
9. The teacher should allow the student to handle his or her own learning.	1	2	3	4	5	6	7
10. The teacher should take a role as a part of the group and become an active learner with the students.	1	2	3	4	5	6	7
11. Learning styles should be the primary factor in deciding how to teach.	1	2	3	4	5	6	7
12. The sequence of learning should be broken down into very small steps to virtually ensure correct responses.	1	2	3	4	5	6	7
13. The teacher should provide an environment that increases the student's capacity to develop himself/herself.	1	2	3	4	5	6	7
14. Teaching through real world experiences in a democratic setting is best for student success.	1	2	3	4	5	6	7
15. The teacher should keep student inquiry directed toward the process of the investigation itself.	1	2	3	4	5	6	7
16. Teaching basic skills directly is best for student success.	1	2	3	4	5	6	7
17. Teachers should keep the students' feelings and personal problems at the center of the teaching process.	1	2	3	4	5	6	7
18. The student's well-being is closely related to the larger social structure.	1	2	3	4	5	6	7
19. The school must identify organized bodies of knowledge for instruction.	1	2	3	4	5	6	7
20. The teacher should define all goals and objectives in terms of observable behavior.	1	2	3	4	5	6	7
21. The student must take responsibility for initiating and maintaining learning activities.	1	2	3	4	5	6	7
22. Instruction should emphasize the relationship of the person to society.	1	2	3	4	5	6	7
23. Lectures and demonstrations lead to the most meaningful learning.	1	2	3	4	5	6	7
24. Programmed or computer simulated instruction is successfully used with all subject areas and grade levels.	1	2	3	4	5	6	7
25. The teacher should accept responses in order to insure that students feel no judgment on their creative expression.	1	2	3	4	5	6	7
26. The teacher should act as an academic counselor responding to a variety of learner demands.	1	2	3	4	5	6	7
27. The teacher should retain control of the intellectual structure of the classroom.	1	2	3	4	5	6	7
28. Behavior modification should be used to extinguish objectionable behavior as well as to establish behavior responses in subject matter areas.	1	2	3	4	5	6	7

Part B
Directions: Complete the following statements.

1). Total years of experience as a principal: _____years

2). Total years of experience as a principal in his/her current school: _____years

3). Primary Subjects taught as a teacher (check all that apply):

____English Language Arts
____Mathematics/Science
____Social Studies
____Fine Arts/Related Arts
____Elementary Education
____Special Education
____Other _____(Please specify.)

Part C
Directions: Please add any other comments.

_____
_____
_____
_____

Thank you for completing this survey!

E/F
67%
4.27
4.78
4.45
4.35
4.04
3.83
4.25
4.50

Appendix C: Instructional Philosophy Survey Score Sheet Answer Key

Four Families Score Sheet/Answer Key

Elementary_____Secondary_____

Male_____Female_____

Years as a Principal_____

Years as Principal in this school_____

Subjects taught_____

Comments_____
_____
_____

Enter the score indicated next to the appropriate number and then tally the columns.

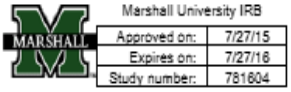
P – Personal source	***S - Social Interaction***	***I – Information Processing***	***B – Behavioral Systems***
1.	**2.**	**3.**	**4.**
5.	**6.**	**7.**	**8.**
9.	**10.**	**11.**	**12.**
13.	**14.**	**15.**	**16.**
17.	**18.**	**19.**	**20.**
21.	**22.**	**23.**	**24.**
25.	**26.**	**27.**	**28.**
P Total =	**S Total =**	**I Total =**	**B Total =**

P_____ S_____ I_____ B_____

7……16……..31 32……42……49

← Low Preference High Preference →

Appendix D: Cover Letter to Principals (Participants)



Dear Principal,

You are invited to participate in a research study entitled *Investigating Principals' Instructional Philosophical Orientation and Their Students' Level of Engagement – A Case Study*. This information will add to the literature concerning an administrator's instructional philosophy and the relationship to levels of student engagement (Gallup's definition of student engagement).

This study is being conducted as part of my work in the doctoral program at Marshall University. I am asking that you complete the *Instructional Philosophy* survey. The survey is comprised of three parts. Part A asks 28 questions related to four families of teaching philosophies, Part B asks three demographic data questions and Part C asks for the participant to add any other comments. The survey will take approximately 10 minutes to complete.

You have been given an envelope with your name on the outside. Please take the survey out and **discard the envelope that has your name on it**. Please do not put your name anywhere on the survey. Your responses are confidential. A list of principals' names and their accompanying school Gallup data was originally used to organize the surveys into each envelope. Once the surveys were matched to the correct envelope, the list of principals' names and accompanying school Gallup data was destroyed. What remains on the survey is an E for elementary and S for secondary, M/F for male or female and the Gallup student engagement data. This remaining list of abbreviations (M/F, E/S) and Gallup student engagement data will be kept in a locked cabinet at Marshall University in Dr. Edna Meisel's office.

There are no known risks by participating in this study. Your participation is completely voluntary and there will be no loss of benefits if you choose not to participate in this study. You may choose not to answer any question by simply leaving it blank. Completing this survey indicates your consent for use of the answers you supply. If you have questions about the study, you may contact Dr. Edna Meisel (Principal Investigator) at (304) 746-8983 or Lou Maynus (Co-Principal Investigator) at (304) 348-7787. If you have questions about your rights as a research participant you may contact the Marshall University Office of Research Integrity at (304) 696-4303.

By completing this survey and returning it to the designated box at the front of the room, you are also confirming that you are 18 years of age or older. You may choose to keep a copy of this letter for your records. Your participation is greatly appreciated.

Sincerely,

Lou Maynus, Ed.S.
Co-Principal Investigator

Appendix E: Panel of Experts

1. Ron Duerring, Ed.D. Superintendent, Kanawha County Schools, 200 Elizabeth Street, Charleston, WV rduerring@mail.kana.k12.wv.us

2. Tom Williams, Ed.D. Deputy Superintendent, Kanawha County Schools, 200 Elizabeth Street, Charleston, WV twilliams@mail.kana.k12.wv.us

3. Elaine Gayton, Ed.D. Director of Professional Development, Kanawha County Schools, 200 Elizabeth Street, Charleston, WV egayton@mail.kana.k12.wv.us

4. Jane Roberts, Assistant Superintendent of Elementary Schools, Kanawha County Schools, 200 Elizabeth Street, Charleston, WV jroberts@mail.kana.k12.wv.us

5. Mark Milam, Assistant Superintendent of High Schools/Technical/Adult Education, Kanawha County Schools, 200 Elizabeth Street, Charleston, WV memilam@mail.kana.k12.wv.us

6. Melissa Ruddle, Assistant Superintendent Curriculum and Instruction, Kanawha County Schools, 200 Elizabeth Street, Charleston, WV mruddle@mail.kana.k12.wv.us

7. Bob Calhoun, Director of Elementary Schools, Kanawha County Schools, 200 Elizabeth Street, Charleston, WV jcalhoun@mail.kana.k12.wv.us

Appendix F: Approval Letter from Kanawha County Schools

200 Elizabeth Street, Charleston, West Virginia 25311-2119 • (304) 348-7732 • Fax: (304) 348-7735
Ronald Duerring, Ed.D, Superintendent

7/20/15

Dr. Edna Meisel
Marshall University
100 Angus E. Peyton Drive
South Charleston, WV 25303-1600

Dear Dr. Meisel,

We are pleased to support Marshall University and Lou Maynus with her doctoral study "Investigating Principals' Instructional Philosophical Orientation – A Case Study". This study will further support our efforts to analyze our Gallup data and thereby continue to increase student engagement.

I will support the implementation of this study in Kanawha County Schools.

Sincerely,

Ronald E. Duerring

Ron Duerring, Ed.D
Superintendent

Appendix G: Permission Letter for Graphic Figure 1

LOU L MAYNUS

From:	Peter Hill
Sent:	Wednesday, April 01, 2015 10:14 AM
To:	Lou Maynus
Cc:	Carmel Crevola
Subject:	Re: Permission to use your graphic "General design for improving learning outcomes"

Dear Lou

Carmel Crevola and I are pleased to give you permission to reprint our graphic from "General design for improving learning outcomes" (Hill & Crevola, 1997) in your literature review.

With best wishes for your doctoral program.

Peter Hill

Dr Peter W Hill
Educational Consultant
Passage du Marché
04320 Entrevaux
France

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pwhill@mac.com

Appendix H: Permission to use Survey

LOU L MAYNUS

From: Gregson, James (jgregson@uidaho.edu)
Sent: Sunday, March 22, 2015 9:11 PM
To: Lou Maynus
Cc: Meisel, Edna; University of Idaho - Institutional Review Board (irb@uidaho.edu); Gregson, James (jgregson@uidaho.edu)
Subject: RE: Permission to use survey

Lou,

Congratulations on successfully having gained your committee members' approval for your proposed doctoral study. To me you are now entering one of the most exciting and yet challenging phases of your doctoral studies.

Know that I have reviewed the materials you have provided and feel comfortable with you using Dr. Armstrong's survey instrument in the way in which you have proposed. In fact, knowing Terry as I did, I know that he would be pleased and honored with your use of his survey. I have Cc'ed the University of Idaho IRB as I committed to them that I would keep them informed of when I gave permission for the use of Dr. Armstrong's survey. Regardless, I value the ground work you have done and have provided me.

Please know that I wish you much continued success in your doctoral studies. If you need a formal letter from me in which I grant you approval, just let me know and I will provide you with one.

Best,

Jim

Dr. James Gregson
Associate Dean and Professor
University of Idaho
College of Education
875 Perimeter Drive MS 3080
Moscow, Idaho, USA 83844-3080
jgregson@uidaho.edu
Phone: (208) 885-6366
Fax: (208) 885-6761

Appendix I: Permission to Use Gallup Survey Items

From: "Hodges, Tim" <Tim_Hodges@gallup.com>
Date: May 8, 2015 at 4:34:47 PM EDT
To: Lou Maynus <lmaynus@mail.kana.k12.wv.us>
Cc: ELAINE GAYTON <egayton@mail.kana.k12.wv.us>
Subject: RE: permission to copy in dissertation

...

Hi Lou,

As long as you include the copyright statement referencing that the items are copyrighted and used with permission at the bottom of the table, it should be fine.

Sounds like good progress!

Tim

From: Lou Maynus [mailto:lmaynus@mail.kana.k12.wv.us]
Sent: Thursday, May 07, 2015 5:54 PM
To: Hodges, Tim
Cc: ELAINE GAYTON

Appendix J: Comments from Part C of Survey

Comments by Topic	
Teaching and Learning	Reminds me of expeditionary learning. I like it.
	Depends on the grade level. Not practical.
	Direct instruction with traditional practice is still best.
	I taught in the 70's and 80's. I have been out of the classroom too long.
	Classroom environment is too controlled by mandates, standards, tests, and non-academic requirements.
	Our classes are too crowded for many of the strategies – students choosing their own learning plans and curriculum.
Student Engagement	Student engagement depends on the culture in the school.
	Parents and students must have some accountability for student engagement in the classroom.
	We engage students when we educate the whole child – not just addressing common core standards.
Accountability	While the professional system of education is a large component of learning success, we cannot deny that there are factors that are out of our control. For example, environment and ability. We keep ignoring these facts.
Survey	Too many yes but…in order to respond.
	Good teaching is good teaching. This survey is too restrictive.

APPENDIX K: Research Question Six Table 24 – Table 42

Table 25

Student Engagement and the Interaction of Social and Years of Experience

Years of Experience	Social Level	Student Engagement	F	p
Early	H	73%	.047	0.829
	L	60%		
Late	H	73%		
	L	59%		

$p < 0.05$

Table 26

Student Engagement and the Interaction of Social and Years of Experience at Current School

Years of Experience Current School	Social Level	Student Engagement	F	p
Early	H	73%	.838	0.364
	L	75%		
Late	H	61%		
	L	50%		

$p < 0.05$

Table 27

Student Engagement and the Interaction of Social and Subjects Taught

Subjects Taught	Social Level	Student Engagement	F	p
Elementary	H	78%	.811	0.373
	L	80%		
Secondary	H	58%		
	L	51%		

$p < 0.05$

Table 28

Student Engagement and the Interaction of Personal and Gender

Gender	Personal Level	Student Engagement	F	p
Male	H	65%	1.788	0.186
	L	52%		
Female	H	78%		
	L	75%		

$p < 0.05$

Table 29

Student Engagement and the Interaction of Personal and Years of Experience

Years of Experience	Personal Level	Student Engagement	F	p
Early	H	74%	.023	.880
	L	65%		
Late	H	73%		
	L	66%		

$p < 0.05$

Table 30

Student Engagement and the Interaction of Personal and Years of Experience at Current School

Years of Experience at Current School	Personal Level	Student Engagement	F	p
Early	H	73%	.960	0.331
	L	66%		
Late	H	88%		
	L	62%		

$p < 0.05$

Table 31

Student Engagement and the Interaction of Personal and Subjects Taught

Subjects Taught	Personal Level	Student Engagement	F	p
Elementary	H	78%	.013	.909
	L	79%		
Secondary	H	54%		
	L	56%		

$p < 0.05$

Table 32

Student Engagement and the Interaction of Informational and Gender

Gender	Informational Processing	Student Engagement	F	p
Male	H	61%	1.817	0.183
	L	55%		
Female	H	75%		
	L	78%		

$p < 0.05$

Table 33

Student Engagement and the Interaction of Informational and Years of Experience

Years of Experience	Informational Processing	Student Engagement	F	p
Early	H	69%	0.400	0.529
	L	72%		
Late	H	79%		
	L	68%		

$p < 0.05$

Table 34

Student Engagement and the Interaction of Informational and Years of Experience at Current School

Years of Experience at Current School	Informational Processing	Student Engagement	F	p
Early	H	69%	1.207	0.276
	L	71%		
Late	H	73%		
	L	60%		

$p < 0.05$

Table 35

Student Engagement and the Interaction of Informational and Subjects Taught

Subjects Taught	Informational Processing	Student Engagement	F	p
Elementary	H	77%	3.242	0.078
	L	80%		
Secondary	H	61%		
	L	51%		

$p < 0.05$

Table 36

Student Engagement and the Interaction of Behavioral Systems and Gender

Gender	Behavioral Systems	Student Engagement	F	p
Male	H	61%	0.135	0.715
	L	55%		
Female	H	78%		
	L	75%		

$p < 0.05$

Table 37

Student Engagement and the Interaction of Behavioral Systems and Years of Experience

Years of Experience	Behavioral Systems	Student Engagement	F	p
Early	H	73%	1.960	0.167
	L	67%		
Late	H	65%		
	L	72%		

$p < 0.05$

Table 38

Student Engagement and the Interaction of Behavioral Systems and Years of Experience at Current School

Years of Experience at Current School	Behavioral Systems	Student Engagement	F	p
Early	H	71%	---	---
	L	70%		
Late	H	None		
	L	67%		

$p < 0.05$

Table 39

Student Engagement and the Interaction of Behavioral Systems and Subjects Taught

Subjects Taught	Behavioral Systems	Student Engagement	F	p
Elementary	H	77%	3.653	0.062
	L	79%		
Secondary	H	63%		
	L	51%		

$p < 0.05$

Table 40

Student Engagement and the Interaction of Full IPO and Gender

Gender	Full IPO	Student Engagement	F	p
Male	High	67%	2.887	0.064
	Equal	55%		
	High/Low			
	Low	48%		
Female	High	77%		
	Equal	77%		
	High/Low			
	Low	77%		

$p < 0.05$

Table 41

Student Engagement and the Interaction of Full IPO and Years of Experience

Years of Experience	Full IPO	Student Engagement	F	p
Early	High	73%	0.101	0.904
	Equal	70%		
	High/Low			
	Low	64%		
Late	High	72%		
	Equal	68%		
	High/Low			
	Low	66%		

$p < 0.05$

Table 42

Student Engagement and the Interaction of Full IPO and Years of Experience Current School

Years of Experience at Current School	Full IPO	Student Engagement	F	p
Early	High	72%	0.602	0.551
	Equal	70%		
	High/Low			
	Low	66%		
Late	High	88%		
	Equal	66%		
	High/Low			
	Low	60%		

$p < 0.05$

Table 43

Student Engagement and the Interaction of Full IPO and Subjects Taught

Subjects Taught	Full IPO	Student Engagement	F	p
Elementary	High	78%	1.509	0.233
	Equal	79%		
	High/Low			
	Low	79%		
Secondary	High	63%		
	Equal	50%		
	High/Low			
	Low	52%		

$p < 0.05$

APPENDIX L: Research Question Six Figure 6 – Figure 24

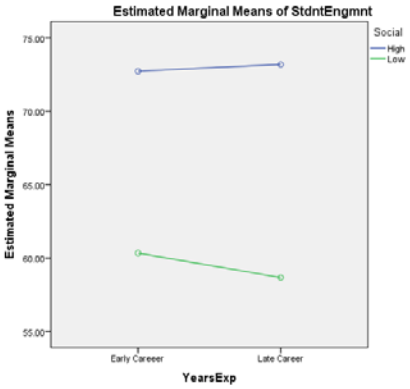

Figure 6. *Student Engagement and the Interaction of Social and Years of Experience*

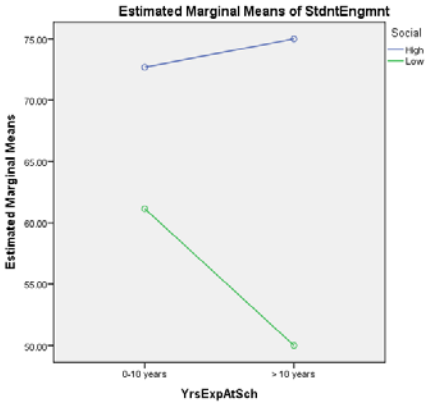

Figure 7. *Student Engagement and the Interaction of Social and Years of Experience at Current School*

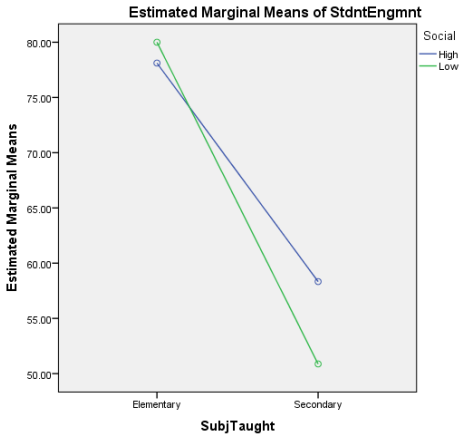

Figure 8. *Student Engagement and the Interaction of Social and Subjects Taught*

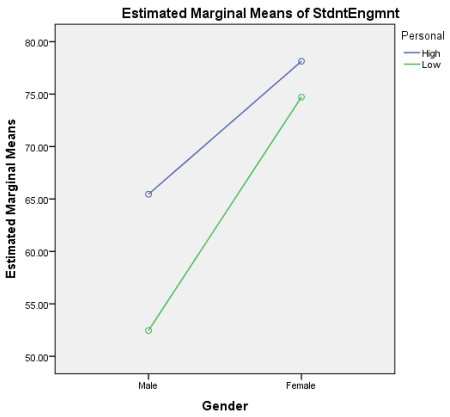

Figure 9. *Student Engagement and the Interaction of Personal and Gender*

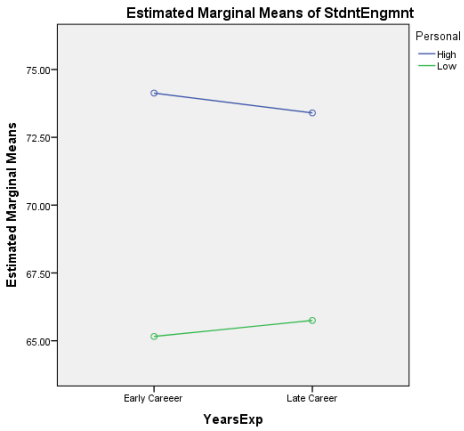

Figure 10. *Student Engagement and the Interaction of Personal and Years of Experie*nce

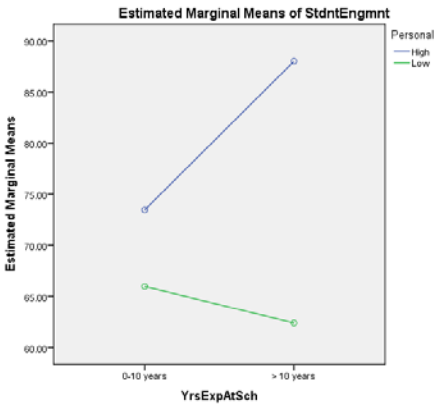

Figure 11. *Student Engagement and the Interaction of Personal and Years of Experience at Current School*

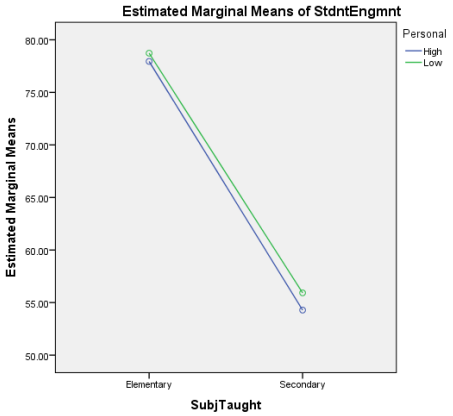

Figure 12. *Student Engagement and the Interaction of Personal and Subjects Taught*

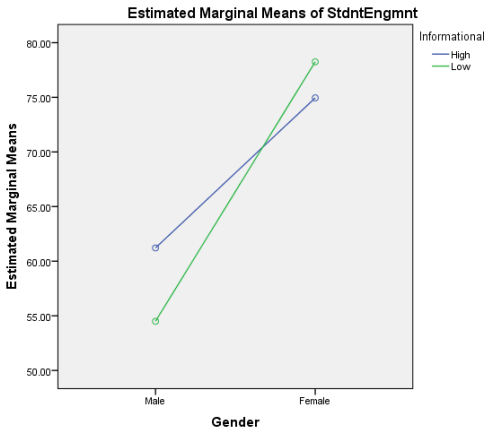

Figure 13. *Student Engagement and the Interaction of Informational and Gender*

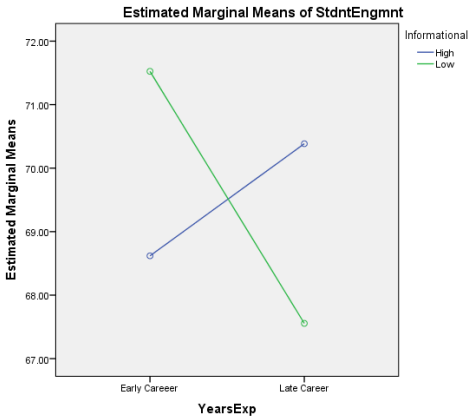

Figure 14. *Student Engagement and the Interaction of Informational and Years of Experience*

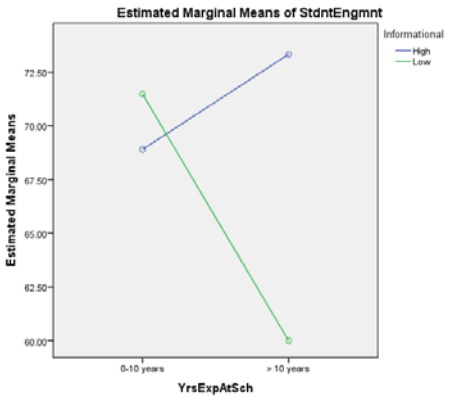

Figure 15. *Student Engagement and the Interaction of Informational and Years of Experience at Current School*

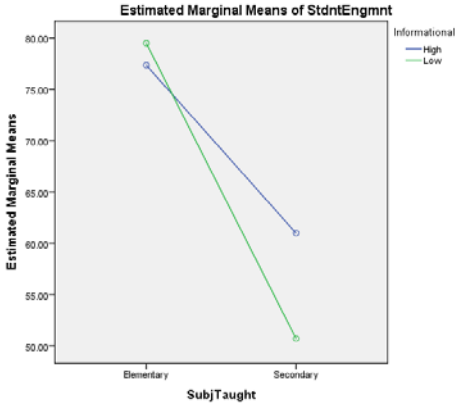

Figure 16. *Student Engagement and the Interaction of Informational and Subjects Taught*

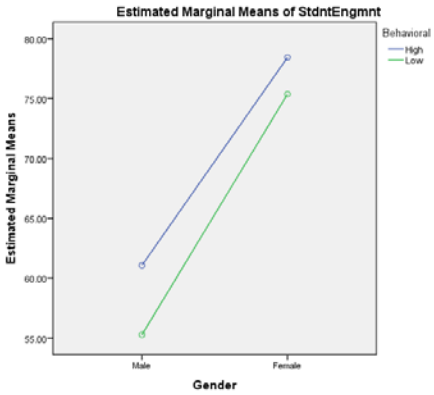

Figure 17. *Student Engagement and the Interaction of Behavioral Systems and Gender*

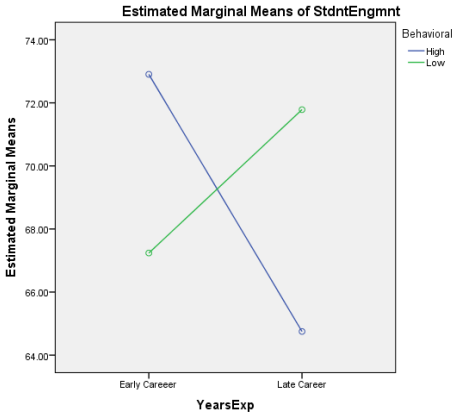

Figure 18. *Student Engagement and the Interaction of Behavioral Systems and Years of Experience*

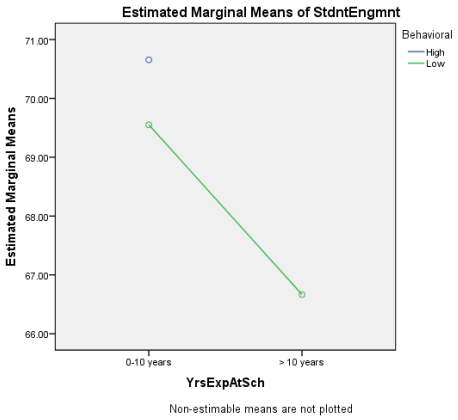

Figure 19. *Student Engagement and the Interaction of Behavioral Systems and Years of Experience at Current School*

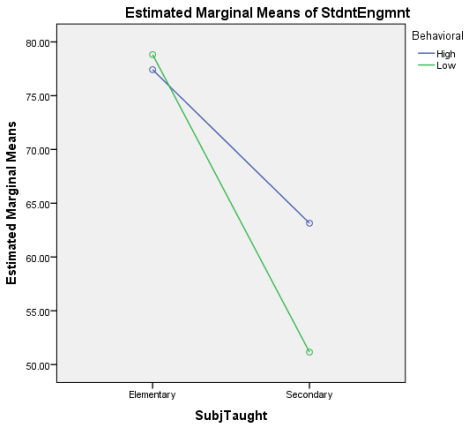

Figure 20. *Student Engagement and the Interaction of Behavioral Systems and Subjects Taught*

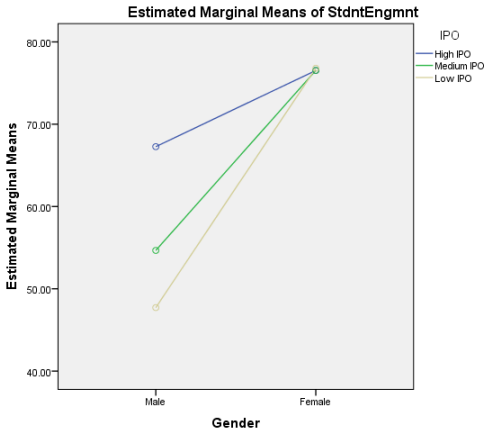

Figure 21. *Student Engagement and the Interaction of Full IPO and Gender*

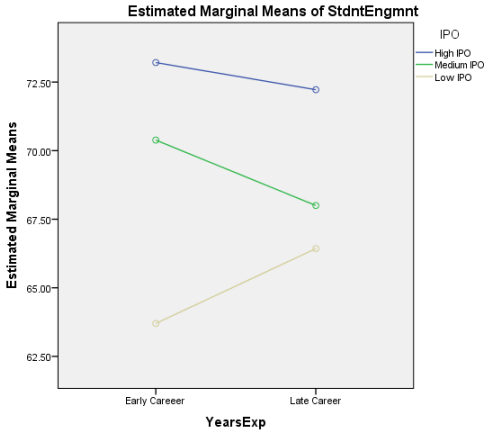

Figure 22. *Student Engagement and the Interaction of Full IPO and Years of Experience*

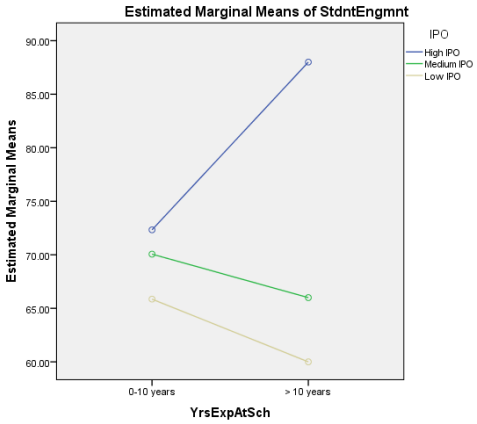

Figure 23. *Student Engagement and the Interaction of Full IPO and Years of Experience Current School*

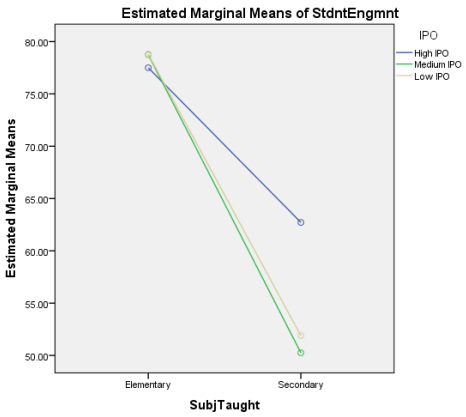

Figure 24. *Student Engagement and the Interaction of Full IPO and Subjects Taught*

Appendix M: Curriculum Vitae

Lou Maynus

2023 Greenbrier Street
Charleston, WV 25311
lmaynus@mail.kana.k12.wv.us

Res: 304-550-4424 Mobile: 304-550-4424

Education

Marshall University	Ed.D Curriculum & Instruction – 12/2015
	Ed.S Leadership Studies – 5/2015
	Master of Arts Degree Leadership Studies – 8/2015
Western Maryland	Master of Science Degree
	Deaf/Hard of Hearing Special Education – 8/1988
Concord College	Bachelors of Science Degree Elementary Education – 6/1984

Certification/Licensure

Superintendent Certificate, K-12 Principal Certification
Mathematics 5- Adult Certification
National Board Certification Adolescence (Middle Level) Mathematics
Elementary Education 1-6 Certification
Special Education Deaf/Hard of Hearing K- Adult

Employment

Kanawha County Schools - *Assistant Superintendent, Middle Schools and Alternative Schools, July 2013 - present*
West Virginia Department of Education – *Lead Coordinator Mathematics and Middle Level Education* Office of Instruction July 2012 – July 2013.
West Virginia Department of Education – *Coordinator* Office of Instruction 8/2007 – 7/2012.
West Virginia Department of Education – *Math Science Partnership Grants Coordinator* Office of School Improvement 12/2005 – 8/2007.
Fayette County Schools – *Department Chair* Collins Middle School, Middle School *Mathematics Teacher* Collins Middle School – August 1998 – December 2005, *Elementary Teacher* Oak Hill Elementary – *Special Education Case Manager* June 1984 – 1998
College of West Virginia – Adjunct Faculty Member – Mathematics, Sign Language
Marshall Graduate College – Adjunct Faculty Member – Sign Language

Sample Publications and Presentations

Strategic Planning Aligning County and School Plans to *One Voice One Focus All Students Achieving- Root Cause Analysis.* County Principals Institute, July 30-31, 2015

Teacher Perspectives of Professional Development Designed to Support Implementation of Common Core State Standards in Middle Level Mathematics: A Model for Program Evaluation and Guidelines for Administrators: Presenting to the Southern Regional Council on Educational Administration (SRCEA) Oklahoma City, Oklahoma. October 2013

Middle Level Education Research Collaborative, West Virginia Department of Education: Presentation Curriculum and Assessment. December 2013

Educator Enhancement Academy for West Virginia Teachers: Presented in Six RESAs. Summer 2013

Next Generation State Standards: Higher Education Policy Commission: April 4, 2013.

Common Core State Standards: National Association of State Supervisors of Mathematics Annual Meeting Philadelphia, Penn. April 2012

Implications for Next Generation Standards Content and Practices: What Does It Mean for the Instructional Leader? Presenting to WV Chief Instructional Leaders, Waterfront Place Morgantown, WV March 2012

Leadership Series Professional Development for County and School Administrators: Next Generation Content Standards - Common Core: RESA I Beckley-Raleigh County Convention Center. February 2012

Implementing the Common Core State Standards Transitional Courses for High School Seniors: Presenting at the San Diego, CA. Council of Chief State School Officers Meeting December 2011

Intervention as Prevention – The Broader View of RTI: WVCTM Executive Committee March 2011.

Getting to Know the Common Core State Standards for Mathematics – WV Stakeholders meeting. February 2011.

Awards/Honors

SMARTER Balanced Assessment Consortium – Linda Darling-Hammond's Performance Task Work Group Member
West Virginia Council of Teachers of Mathematics Distinguished Chair, 2009
Presidential Award for Mathematics and Science Teaching, 2005
Middle School Mathematics Teacher of the Year Fayette County, 2002
RESA IV Carla Sweet Special Educator of the Year Award, 1998