Supervision of cyber teachers:
Examining U.S. based cyber school policy and practice

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SUPERVISION OF CYBER TEACHERS:

EXAMINING U.S. BASED CYBER SCHOOL POLICY AND PRACTICE

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This study extends the body of knowledge in the field of K-12 teacher supervision through an investigation of contemporary literature on supervision in traditional and cyber schools; an inventory of current cyber school supervisory practices, procedures, policies, needs, and issues; and a review of related supervisory documents. The results of the outreach effort yielded an effective response rate of 9% resulting in an unintended, but important finding, in that a better mechanism is needed for identifying, categorizing and reaching cyber schools.

The study supports contemporary beliefs related to the necessity and importance of a quality supervisory program and that multiple considerations and approaches are available. Participating schools report substantially lower teacher to supervisor ratios than the national average and that supervision practices have a positive impact on quality of instruction. Respondents indicate that the principal is primarily responsible for supervision however; many call upon other individuals such as peer mentors, instructional supervisors, and team leaders to assess and support the teacher. Most participating schools incorporate the use of classroom observations using archived data and report that email is most widely used and most useful supervisory tool. Student work/test scores, input from students, teacher self-reflection, and input from parents are reported to be the most widely used sources of data. Professional development needs and a lack of time for supervision are reported to be the biggest supervisory challenges facing cyber school administrators.

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1.1   OVERVIEW OF THE STUDY

This study extends the body of knowledge in the field of K-12 teacher supervision through an investigation of cyber school supervisory practices, procedures, policies, needs, and issues. The researcher surveyed cyber schools across the United States to inventory current policy and practice. The study highlights interesting and innovative sites engaged in exemplar practices establishing a foundation for future research in the realm of supervision of cyber teachers.

Chapter 1 outlines the background of the study including the problem statement, purpose, research questions, limitations of the study, and definition of terms. Chapter 2 provides a review of the literature and subsequent discussion regarding the nature of supervision from a traditional perspective, the nature of technology in K-12 education in general, the nature of distance learning in K-12 education, and the nature of supervising from a distance. Chapter 3 outlines the specifics of the design of the study including the methodology, a description of the population, outreach efforts, data collection, data analysis, descriptions of the instruments, and study procedures. Chapter 4 reports on the findings from the study. Chapter 5 presents the researchers interpretations of the data and Chapter 6 contains implications and recommendations. Appendices, including all instruments, letters to participants, and a reference list are located at the end of the document.

1.2 BACKGROUND OF PROBLEM

Today's generation of students is often referred to as Generation Y or the Millennial Generation. Generation Y, as one high school student describes, has "technology in [their] blood" (Vasquez, 2004). These students do not know life without computers and the Internet. According to one study, 94% of these students use the Internet for school-related research (Lenhart, Simon, & Graziano, 2001). Student access to the Internet at school has grown dramatically over the years. According to a 2006 study, nearly 100% of U.S. public schools have Internet connections and the student to Internet-connected-computer ratio has risen to a measure of 3.8 to 1 (Wells & Lewis, 2006). Millennial teens spend more time using the Internet than watching television (Harris Interactive and Teenage Research Unlimited, 2003) and this new generation of students seeks a new type of education. An education conveyed in a medium to which they are accustomed: the Internet.

Education via the Internet is a mode of distance learning and is synonymous with e-learning (Watson, Winograd, Kalmon, & Good, 2004). The United States Distance Learning Association defines e-learning as "the acquisition of knowledge and skills through mediated information and instruction" (2005, p. 1). It is a set of instructional experiences facilitated through the use of electronic resources and designed to support the development, exchange, and application of skills, knowledge, attitudes, aspirations, and behaviors (Any time any place any path any pace: Taking the lead on e-Learning policy, 2001). E-Learning includes forms of learning, roles for learners, structures for constructing knowledge, and relationships among learners facilitated by current and emerging technologies that may not be available face-to-face. It can range from a single episode to a complete virtual schooling experience. As technology becomes more readily available in schools, the Internet as a means of delivering instruction is

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becoming even more popular. A recent report of online learning statistics shows that 63% of all K-12 schools in the United States currently have students taking either online or blended courses (Picciano & Seaman, 2007).

This mode of instruction is also gaining acceptance with educators and policy makers responsible for the education of Generation Y and they are endorsing the power of the Internet as an educational resource (DeBell & Chapman, 2003; Hassel & Terrell, 2004; Northwest Education, 2004; Research info and statistics, 2005; Setzer & Lewis, 2005; Vail, 2002). The United States Department of Education (USDE) urges educators to embrace e-learning solutions, as they believe "e-learning offers flexibility in the time, place and pace of instruction… [and that] it provides teachers the opportunity to create an instructional environment that adapts to students wherever and however they need to learn at home or school" (USDE, 2004, p. 35). It is said that e-Learning will revolutionize the way schools deliver instruction, especially for students who struggle to overcome barriers such as geographical location, physical impairment, or scheduling conflicts (Watson et al., 2004).

The USDLA (2005) reports that research on Pre-K-12 distance-learning applications strongly suggests distance learning is an effective means of delivering instruction. The USDE cites that distance-learning classrooms report similar effectiveness results as their traditional classroom-based counterpart. However, they acknowledge that these results were gained by teachers and administrators who are accustomed to e-learning, thus illustrating the need for mechanisms to ensure quality. Proper supervision and evaluation of cyber teachers may be one mechanism used to achieve this goal.

The children of this new generation, Generation Y, acquire knowledge and skill in a vastly different environment. This environment consists of a virtual world where people are connected via a plethora of tools for exploration and knowledge creation that allows for

collaboration on a global scale. McConney, Schalock and Schalock (1997) explain, "The purpose of teaching is learning, and the purpose of schooling is to ensure that each new generation of students accumulated the knowledge and skill needed to meet the social, political, and economic demand of adulthood" (p. 162). Schools, attempting to meet the needs of our 21st Century students have created blended model school designs, cyber schools, virtual high schools, and other virtual academies elevating e-learning issues to the highest level of priority. It is the belief of the researcher that an investigation of supervision of cyber teachers is a necessary and important step in the evolution of research in the area of K-12 teacher supervision and evaluation.

1.3   PROBLEM STATEMENT AND PURPOSE

Research in the area of supervision in the traditional school environment has been a primary area of concentration for many years. Researchers and school administrators have sought out and tested many systems in an effort to provide oversight and coaching to improve teachers' ability to deliver quality instruction. This has been a difficult journey that is being made even more complex by requiring adjustments for an online world where you may not even see the teachers (Managing teachers you can't see. Instructional oversight in a virtual school, 2006). Due to the expansive growth in the field of e-learning (Long, 2004; Murray, 2004; Northwest Education, 2004; Payne, 2002), the unique characteristics of teaching online (Essential principles of high-quality online teaching: Guidelines for evaluating k-12 online teachers, 2003), and the recent developments of blended model school designs, cyber schools, virtual high schools, and other virtual academies, it has now become evident that we should extend this line of inquiry to the

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virtual school environment (Cavanaugh, Gillan, Kromrey, Hess, & Blomeyer, 2004; Watson, 2005).

Alfonso (1997) contends that an organization cannot exist with out supervision and asserts that schools require a solid supervisory foundation in terms of "skills, knowledge, and ongoing, regular involvement with those they supervise" (p. 13). Alfonso also reports that the strong instructional leadership of principals and other supervisors are essential elements for creating successful schools. Cavanaugh et al. (2004) advocate this same position for virtual schools and specifically state that supporting and assessing the effectiveness of virtual teachers, those who teach at a distance using Web-based environments, is an area warranting special consideration. To date, there is very little research to guide and support the policy and practice of supervising cyber teachers (Tobin, 2004) and therefore, "scientific evidence is needed to guide the growing numbers of online school developers and educators" (Cavanaugh et al., 2004, p. 8).

This study was designed to examine current supervisory practices of U.S. based cyber schools to develop a more extensive understanding of current strategies and practices to help supervisors assess (fulfill the competence and reporting objective) and assist (help teachers improve their teaching abilities) the teachers in their schools. More specifically, the researcher used the current literature to describe best practices for supervision in the traditional school environment and suggested best practices for supervision of online teachers. Data were gathered to describe current supervisory practices of U.S. cyber schools and identified needs and issues facing cyber schools resulting in a summary of interesting and innovative practices. This summary and reflection serve to establish a baseline of supervision of teachers in a cyber environment that can be used to direct future research.

1.3.1 Research Questions

1. What are the recommended practices of supervision in U.S. based traditional and cyber schools?

2. What is the nature of current supervisory practices in U.S. based cyber schools?

3. What is the difference between supervision in a traditional environment and supervision in a cyber environment in U.S. schools?

4. What needs and issues regarding supervision of teachers are identified by U.S. based cyber schools?

5. What are the implications for future supervisory policy and practice in U.S. based cyber schools?

1.4   LIMITATIONS OF THE STUDY

The primary hindrance for conducting a study on cyber schools ensued from the challenges surrounding the foundation for establishing/defining the population of the study. This difficulty is based on two separate but equally important factors; the lack of consistency in terminology and the non-existence of a comprehensive list of U.S. based cyber schools. The following section describes the general underlying issues and offers a rational for the selection process.

1.4.1 Definition of Cyber School

Without clearly defined terms used to describe online learning it is difficult to establish consistency of data and this can cause problems that result in confusion rather than adding to our knowledge. Consistency of terminology is important and since generally accepted definitions of online learning have not been established and ambiguity related to definitions and terms such as fully online, blended courses, virtual courses, e-learning, hybrid courses, mixed-mode, asynchronous learning, Web-facilitated, and Web-enhanced abound; it is useful to establish the boundaries for this study.

Since 2003, Allen and Seaman (2006) have conducted annual surveys of the status of online learning in U.S. higher education. Through this work they have refined three general descriptions of online learning courses: Online – course where most or all (at least 80%) of the content is delivered (synchronously and/or asynchronously) online; Blended/Hybrid – course that blends face-to-face and online delivery where a substantial proportion (30 to 79%) of the content is delivered online; and Web-Facilitated – course that uses Web-based technology (1 to 29%) to facilitate what is essentially a face-to-face course (i.e., uses a course management system to post course syllabus and assignments) (I. Elaine Allen & Seaman, 2006). To be consistent with this previous work, the researcher has adopted the definitions distinguished and defined by Allen and Seaman (2006) and will specifically explore supervision and evaluation models in the online environment of U.S. based cyber schools that offer synchronous and/or asynchronous courses.

1.4.2   List of Online Schools

The significant growth in the number of public, private and for-profit providers of online services and the fact that there are few states that require data collection for online programs regarding the delivery of online content (Picciano & Seaman, 2007) seems to have prevented the existence of an authoritative list of schools that offer fully online programs as described by Allen and Seaman (2006). For this study, the researcher consulted with the North American Council for Online Learning (NACOL), the International Society for Technology in Education (ISTE), the National Center for Educational Statistics (NCES), the United States Department of Education (USDE), the State Educational Technology Directors Association (SETDA), the Southern Regional Education Board (SREB) and Dr. Cathy Cavanaugh of the University of North Florida to develop a list of cyber schools. Although every effort was made to include all U.S. based cyber schools that offer online courses, some may not have been included.

1.4.3   Other Limitations

An additional limitation of the study involves survey issues such as reliability, validity, bias, and response rate. Due to the relative newness of the topic, instruments with proven reliability and validity results do not exist. The researcher followed the general rules of survey creation and data collection to help ensure reliability, validity and to control for bias.

Moreover, a third limitation of the study pertains to the evolution of technology. Rapidly evolving technology is likely to have some affect on e-supervisory practices of the future and therefore such technological advances may limit the relative usefulness of the findings.

1.5   CONCEPTUAL DEFINITIONS OF TERMS

Throughout this study, the reader will come across many common terms that are used in specific ways. In order to improve the quality and clarity of the study, some key definitions are provided here. Due to the technical elements of the study, key terms used to describe the online component of the study are provided first.

Education that occurs via the Internet is a mode of distance learning and is synonymous with online learning, e-learning and virtual learning (Smith, Clark, & Blomeyer, 2005; Watson et al., 2004). An *online course* is one in which most or all (at least 80%) of the content is delivered online (I. Elaine Allen & Seaman, 2006). One place online courses are offered is in a cyber school, also known as a virtual school. For the purpose of this study, a *cyber school* is defined as an entity that offers online courses (as defined above) "in which students enroll and earn credit towards academic advancement based on successful completion of the courses (or other designated learning opportunities) provided by the school. Cyber schools enroll students full time" (Watson, 2005, p. 20). *Cyber school students* are taught by *cyber teachers*, those who use the Internet in conjunction with a variety of synchronous (participants share the same time and place) and asynchronous (participants interact in varied space and time) communication tools and strategies to deliver instruction. Cyber teachers are in turn supervised by an e-supervisor. An *e-supervisor* is defined as one who supervises cyber teachers.

Because the concepts of supervision and evaluation are primary elements of the study, it is necessary to define the researcher's perspective on these complicated topics. First, in direct alignment with the literature (Acheson & Gall, 2003; Danielson & McGreal, 2000; Fink & Resnick, 2001; Glatthorn, 1990) and for the purpose of this study, evaluation is subsumed within the concept of supervision. Chapter 2 provides a detailed review of supervision and evaluation,

however, the term *supervision* is sometimes used throughout the study to refer to both issues of (a) competence and quality performance (generally equated with evaluation) and (b) professional growth and support (generally equated with supervision) of teachers.

As the literature suggests, multiple considerations and approaches are available for classroom supervision and there is no one best model (Anderson, 1993; Costa & Garmston, 1994; Danielson & McGreal, 2000; Eisner, 1983; Glickman, 1985; Instructions for use of PDE 426 427 and 428, 2003; Kaye, 2004; Lieberman, 1995; McQuarrie & Wood, 1991; Nolan & Hoover, 2005; Pajak, 2002; Tucker & Stronge, 2005). Consequently, the researcher, using the literature review as his guide, developed his own description of supervision for use in this study. He describes a *good supervision model* as a collaborative, on-going, effective, and efficient process that improves the instructional practice of teachers and the educational experience of their students. This model incorporates multiple sources of data collected over time to create an individualized instructional improvement program that melds together competence and quality performance with professional growth of teachers. When properly constructed and implemented, it will assist teachers in becoming more resourceful, informed, and skillful. Hence, a *good cyber-supervision model* is defined as a good supervision model conducted in a virtual environment.

2.0   REVIEW OF THE LITERATURE

2.1   SUPERVISION AND EVALUATION

Supervision and evaluation are extremely complex in nature and have been the focus of study for many years. In an effort to focus and guide the exploration of this complicated subject, subtopics centered on essential questions geared to breakdown the elements of supervision and evaluation have been formulated to present an overview of supervision and evaluation. The first question, what is the history of supervision and evaluation, is posed to gain perspective on the roots of supervision and evaluation. The logic is to learn from experiences: ultimately helping to guide and direct current practice and to help make better-informed decisions about the future. The next several questions concentrate on the purpose of supervision and evaluation, the relationship between supervision and evaluation, the aim of supervision, whether supervision promotes effective teaching or increases student achievement, and whether or not teachers should be evaluated based on student achievement.   The final question, how should supervision be conducted, is posed to guide the exploration of current supervision and evaluation models.

2.1.1   History of Supervision and Evaluation

Throughout the history of education, supervision and evaluation have been defined and redefined. Sometimes the roles have been described synonymously being equated with the

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notion of inspector, helper, evaluator and counselor (Garman, 1982). Conversely, other experts have maintained that the two roles should be separated (Waite, 1997). Agreement, however, can be found in purpose. Historically, supervision and evaluation have served to enhance the professional practice of teachers thus improving student achievement (Nolan & Hoover, 2004). Many differing opinions exist on the means to achieve these ends and the following paragraphs provide an overview of supervision and evaluation outlining their similarities, differences, and unifying characteristics.

2.1.1.1 Supervision

In the field of education, the definition and methods of supervision have changed over the many years of interaction between the supervisor and the supervised. The Oxford English Dictionary (1989) associates supervision with watching, directing, and overseeing. Early on, supervision models followed this basic notion and were bureaucratic in nature: focusing on mandates, rules, and regulations. The bureaucratic inspection-type of supervision was a function of the centralization of schooling during the early part of the 20th century. Supervision during this period addressed the need for inspection of physical plant and ensured that teachers offered consistent programs and instruction.

After 1900, American education became increasingly influenced by the many technological advances of the industrial age. Using the time-motion studies of Frederick Winslow Taylor (1911) and Frank and Lillian Gilbreth (1914) as their guide, school administrators of this time sought to reduce waste by streamlining or reducing the number of steps and the amount of time required for the inspectional processes. The goal was to bring a high level of efficiency to the practice of supervising in schools. This era was marked by the ideas of Franklin Bobbitt (1913). Bobbitt, a professor at the University of Chicago, published

the article "Some General Principles of Management Applied to the Problems of City-School Systems". This article introduced 11 major principals of scientific management as applied to education. Bobbitt maintained that school supervisors were to find the best methods of instruction and enforce them for all teachers.

Realizing the faults inherent in such an autocratic system of supervision, educational theorists of the 1920s turned their attention to more democratic supervisory methods. Largely influenced by the work of Hosic (1920) and Dewey (1929), supervisors began to cooperate with teachers and curriculum coordinators to improve instruction. In the 1930s and 1940s, proponents of scientific supervision began to influence supervisory practice. In an attempt to provide for a more scientific and objective approach to the practice of supervision, writers such as Burton (1930) and Barr (1931) began publishing their writings emphasizing that the methods of science be applied to the practice and study of supervision. Barr (1931) contended that instruction could be broken down into smaller parts. He stressed the necessity for the systematic collection of objective, authentic, and valid data from a variety of sources. Once isolated, the data could then be studied to find standards that supervisors could use when evaluating the quality of teaching. Scientific supervision was thought to be different from the social efficiency practices described by Bobbitt and entirely compatible with the more democratic models of supervision proposed by Hosic and Dewey (Sullivan & Glanz, 2005). The 1960s brought a more clearly defined and expanded version of the scientific and democratic supervisory models in the form of supervision as leadership. This new perspective, expressed in the writings of Harris (1969), emphasized leadership as showing the way and guiding the organization in definitive directions.

During the 1970's experts struggled with much confusion and ambiguity that plagued the world of supervision and developed what is widely known as clinical supervision (Markowitz, 1976). Clinical supervision, first conceptualized by Goldhammer (1969), and Cogan (1973)

developed out of the desire to fit collegial ideas into theoretical practice. Proponents of the clinical supervision model viewed the supervisor as a colleague. The supervisor became a trusted friend of the teacher who provides intellectual services designed to improve teacher practice. Clinical Supervision relies heavily on the interpersonal relationships developed between the teacher and administrator and focuses on a team approach to help improve student achievement. The systematic approach is extremely time-consuming. The clinical supervisor uses a pre-observation conference to discuss focal points of improvement, an observation in which the supervisor collects data, and a post-observation to discuss, in a nurturing, deliberative, improvement-oriented environment, ways to work toward the goal of improving teaching and learning.

Sullivan and Glanz (2005) describe the 1980s and the era of "Changing Concepts" (p. 10). They explain that during this time, school administrators granted teachers more formal responsibility for setting school policy and supervisors continued to explore alternative approaches of supervision to extend democratic practices. This era is marked by the collective pursuit to counter the effects of supervision's oppressive legacy and many models such as developmental supervision, which based supervision on various levels of teaching ability gained in popularity. Other writers of this period wrote of teacher empowerment, peer supervision, and cognitive coaching: all developed to improve supervision by shedding its autocratic tendencies and seeking involvement from other sources.

Supervision models continue to be refined. The most current trends in supervisory practices are "democratic in nature and encourage participation and support" (2005, p. 24) and are "concerned with promoting teacher growth, which in turn leads to improvement in teaching performance and greater student learning" (Nolan & Hoover, 2004, p. 26). To achieve these lofty ideals, supervisors have begun to employ a differentiated approach to supervision, and

many states are developing alternative forms of assessment because they recognize differentiated assessment as an essential component of school improvement (J. G. Claudet, 1999; C. D. Ellett, Teddlie, C., 2003; Howard, 2001; Milanowski & Heneman III, 2001; Olebe, 1999; Sawyer, 2001). Differentiated supervision is primarily based on the beliefs that (a) teachers are at different levels and stages of development, and those teachers should have some choice about the kind of supervision they receive (Zepeda, 2002) and (b) adults are more intrinsically motivated to learn when they take ownership in the process (Nolan & Hoover, 2005). As Marczely (2001) explains it, "Just as an Individualized Education Plan is designed to address the performance needs of the individual student, so a Differentiated Supervision Plan should be developed to address an individual teacher or employee's professional development needs" (p. 23). Today's supervision models stress balance between the needs of the district and the needs of the teacher to provide a high quality education for all students.

2.1.1.2 Evaluation

Closely associated to supervision is the concept of evaluation. Evaluation is often thought of as the accountability portion of supervision and is equated with the action of appraising or determining value (Oxford English dictionary, 1989). Nolan and Hoover (2005) describe evaluation as an "organizational function designed to make comprehensive judgments concerning teacher performance and competence for the purpose of personnel decisions such as tenure and continuing employment" (p. 26). Nolan and Hoover (2005) further clarify the notion of evaluation as (a) being ultimately aimed at a summative judgment about quality of performance, (b) concerned with data collection, (c) standardized and criterion driven, (d) broad in scope, (e) designed in the interest of the state to protect students, (f) state mandated, and (g) conducted only by those certificated by the state to carry out such activities. Nolan and Hoover

also assert that the responsibility of supervision ultimately lies with the superintendent of schools and is a method used to provide some assurance that every teacher in the district is performing at least at a minimal level of competence.

Over the years, researchers and practitioners have developed many models of evaluation and although these systems employ different strategies, they remain focused in purpose: judging the effectiveness of teaching. Evaluation strategies vary mostly on the details of who does the evaluation, what is measured, what tool is used to measure, how often are measurements taken and what criterion is used to measure. For instance, McGreal (1983), in his book *Successful Teacher Evaluation,* describes several models of evaluation including the Common Law Model, the Goal Setting Model, and the Product Model: each of which has unique characteristics, strengths and weaknesses. Table 1 is provided as an overview to simplify the comparison of the key features. This chart helps to illustrate that the differences between and among teacher evaluation systems does not lie in the final outcome of the evaluation process (to raise student achievement levels), but in the details of who does the evaluation, what is measured, what tool is used to measure, how often are measurements taken, and what criterion is used to measure.

This point is further demonstrated as one continues to examine additional evaluation models. For instance, Ellett (1997), in his chapter of *Evaluating Teaching: A Guide to Current Thinking and Best Practice* a book edited by James H. Stronge, discusses a Classroom-Based Assessment Model. The discussion is based on his years of experience as an evaluator of teachers. He contends that "the primary source of information useful for improving teaching and learning in classrooms stems from direct, systematic observation and assessment of teaching and learning using multiple, classroom-based methodologies" (p. 108). In another example, Wolf, Lichtenstein and Stevenson (1997) speak about another model for collecting and assessing teacher performance data: the Portfolio Evaluation Model.

Table 1. Models of Evaluation

	Common Law Model	Goals Setting Model	Product Model
Overview	Relies on simplified definition of evaluation and on process and procedures. Characterized by high supervisor-low teacher involvement, considered synonymous with observation, little difference in procedures for veteran and novice teachers and utilizes standard formalized "trait" criteria for summative assessment used to compare teachers.	Primarily concerned with "cutting out the dead wood". Often equates with not doing something wrong with good teaching. Goals are set, monitored periodically, and an assessment is made as to if the goals were met.	Rates teacher competence on how well their students perform, emphasis not on methods, styles, or processes but on the results of achievement tests.
Strengths	Easily implemented in situations of high teacher/supervisor ratios, requires little training, minimizes disruption, and allows supervisors to visibly meet accountability demands.	Promotes professional growth, interaction between supervisor and teacher, focuses on unique needs and integrates performance objectives with that of the goals of the district.	Emphasis on student achievement.
Weaknesses	Promotes "watchdog" attitudes, low teacher involvement and allows for little supervisor /teacher interaction, heavy emphasis on standardized instruments measuring administrative rather than teaching criteria and forces comparison of teachers when comparison is not necessary.	Cannot be used for ranking teachers, places too much emphasis on attainment of goals, time requirements not realistic, and force administrators to make judgments in areas in which they are not qualified.	Tests may not be aligned to content.

Note. From Successful Teacher Evaluation (pgs. 8-25), by T.L. McGreal, 1983.

Wolf, Lichtenstein, and Stevenson state the portfolio system offers a more accurate picture of the teacher because it provides an authentic collection of evidence of learning over time. Two other models that further illustrate the many variations of available evaluation systems used to improve teacher performance include the Artistic Naturalistic Model and the

Self-Evaluation Model. According to McGreal (1983), the Artistic Model is characterized by a heavy emphasis on the idea that teaching is at least as much of an art as it is a science, and as such, observation and evaluation techniques and instruments should account for expressive and unanticipated outcome of activities the teacher feels is right for the situation. This model of evaluation relies heavily on the perceptivity and knowledge of the supervisor to appreciate the subtleties of the teacher's *performance* and then bases quality judgments on the variety of benefits that avail from the artistic or naturalistic decisions that unfold during the course of a lesson. Airasian and Gullickson (2006) describe the Self-Evaluation Model as a necessary and important *part* of an evaluation system in which "teachers make judgments about the adequacy and effectiveness of their own knowledge, performance, beliefs, and effects for the purpose of self-improvement" (p. 186). They report that the self-evaluation model recognizes teachers as responsible professionals whose expertise is valued, encourages collaboration that in turn enriches professional growth and development, and gives teachers a stake in and control over their own practice.

In each example, the strategy for evaluation differs but the desired outcome remains steadfast: improve teacher performance to raise student achievement.

2.1.1.3 How are supervision and evaluation related?

Supervision is often equated with evaluation, whereby evaluation is a formalized way of documenting supervision. Sometimes the administrator's supervisory role is described as being in charge of teacher assessment, and evaluation is considered a necessary part of supervision because it provides for accountability (1997). The supervisor, by performing frequent informal/formal visits and by interacting with the teachers in a formative/summative function provides guidance and support (supervision) and, when necessary, redirects the teacher to

improve his/her instruction (evaluation). Others, like Nolan and Hoover (2005), believe that teacher evaluation and teacher supervision are complementary but separate organizational functions. They believe that while the functions are different, the same person can conduct supervision and evaluation so long as the processes are separate. Still, some such as Waite (1997) insist that supervision should be removed from formal evaluation completely as it is not possible for one person to advocate for the students and the teacher at the same time.

While the relationship of the supervisor and evaluator remains uncertain, the evidence from the literature clearly indicates supervision and evaluation are related in the purpose of ensuring high quality instruction for all learners (Alfonso, Firth, & Neville, 1981; Duke, 1990; Haefele, 1993; Iwanicki, 1990; McGahie, 1991; Scriven, 1995; Stoldowsky, 1984). The differences lie in the manner one chooses to answer many other complex questions like who gives us the authority to say what is or is not good teaching, who does the supervising, what is the purpose of supervision, what is assessed and what tools are used to make the assessment, and what criteria are used to judge success.

2.1.2 Legitimacy of Supervision and Evaluation

What makes the supervision of teachers a legitimate practice? In other words, what right does an administrator have to evaluate teachers? The argument of the legitimacy of supervision and evaluation can be clarified upon further analysis of important questions such as who conducts the supervision and evaluation, what is the purpose of supervision and evaluation, what is assessed, and how is it done. Perhaps the best place to start is with the question: Is supervision and evaluation necessary and important?

2.1.2.1 Is supervision and evaluation necessary and important?

What can we learn about the legitimacy of supervision and evaluation from experts in the field? Some authorities on the subject argue that supervision is important and necessary for structure and focus of the organization as well as accountability for competence and quality assurance (Alfonso, 1997; Danielson & McGreal, 2000; Darling-Hammond, 2000; Duke, 1990; McLaughlin, 1988; Nolan & Hoover, 2005; Rice, 2003; Starratt, 1997). Alfonso (1993) claims that the strong instructional leadership of principals and other supervisors are essential elements for creating successful schools. In a later publication, Alfonso asserts that an organization cannot exist without supervision and stresses that schools require a solid supervisory foundation in terms of "skills, knowledge, and ongoing, regular involvement with those they supervise" (1997, p. 13). Supervision of teachers is thus legitimized because a school cannot function well without.

However, some refute this argument. Herbert and Tankersley (1993) suggest there is ample evidence to imply that some teachers have benefited from supervision, however, they qualify their assertion by stating there is no evidence that good supervision is widely practiced. In support of this argument Robert J. Starratt (1997) states that supervision, if conducted like 80% to 90% of what he sees as the current practice of evaluation of classroom teaching, it is not necessary and should be abolished. He claims that to his knowledge, there is no research that shows supervision, as it is generally practiced, results in substantial and sustained changes in teachers' teaching. The legitimacy of supervision is further debunked by reports that indicate teachers do not find supervision to be helpful (1998) and it has little impact on student achievement (1990; Wise, Darling-Hammond, McLaughlin, & Berstein, 1985) and thus the legitimacy of supervision stands refuted.

If teachers do not find supervision helpful and it cannot be tied to raising student achievement, how can it be a legitimate practice? Alfonso (1997) contends an organization can not exist without supervision. He asserts that without it, there is no direction; there is no sense of goal or purpose. In addition, experts contend that the number one factor affecting student achievement is the teacher and thus we should have a system in place to ensure quality performance (Starratt, 1997). Although Starratt and Alfonso argue opposite points of view in their piece titled, "Should Supervision be abolished?" they share a common message. Alfonso and Starratt recognize supervision is essential, and that when done well, creates a trusting community where teamwork and professionalism thrive making teachers work "efficient, effective, and personally rewarding" (Alfonso, 1997, p. 13).

Therefore, a primary indicator for deciding the legitimacy of supervising teachers may rest with factors regarding the quality of the system in practice. Embedded in Nolan and Hoover's (2005) fundamental beliefs about supervision are the underpinnings of what they believe are the primary concepts that constitute a successful supervision and evaluation system. In chapter 1 of their book, *Teacher Supervision and Evaluation: Theory into Practice*, they state, teaching is a difficult and complex process that requires a tremendous amount of knowledge and skill. Consequently, all educators (supervisors, evaluators, coaches and teachers) should have a comprehensive understanding of the system of supervision and evaluation and have the expertise necessary for them to carry out their responsibility. Nolan and Hoover (2005) further explain that a quality supervision and evaluation system should be structured in a fair collaborative manner that addresses the separate but complementary functions of both supervision and evaluation. To be considered a legitimate practice, a supervision and evaluation system should be "capable of remediating or eliminating poor performance as well as nurturing excellent performance" (Nolan & Hoover, 2005, p. 7).

2.1.2.2 What is the purpose of supervision and evaluation?

As Alfonso (1997) indicated, the legitimacy of supervision is strongly connected with purpose and "The most basic purpose of both supervision and evaluation is to enhance the educational experiences and learning of all students" (Nolan & Hoover, 2005, p. 4). Purpose is also associated with the supervisor's dual role in that they are to assess (fulfill the competence and reporting objective) and assist (help teachers improve their teaching abilities). Sullivan and Glanz (2005) describe this as the "supervisors' role conflict" (p. 27). The conflict lies between the requirement to evaluate and the need to support teachers in their efforts to improve.

According to Duke (1990) the purpose of teacher *evaluation* is to improve performance and document accountability. Garman (1982) suggests that the evaluator assumes the role of a neutral observer who's job it is to protect the interests of the state. This person must maintain a degree of distance to make a fair assessment and cannot be on the side of the teacher as that might imply failing to be on the side of the children. Haefele (1993) in his journal article "Evaluating Teachers: A Call for Change" indicates that the primary functions of evaluation are to (a) screen out unqualified persons from certification and selection process, (b) provide constructive feedback to individual educators, (c) provide evidence that will withstand professional and judicial scrutiny, and (d) aid institutions in terminating incompetent or unproductive personnel. Similarly, McGahie (1991) succinctly states that evaluation is the accountability function of supervision and reflects a commitment to competence and quality performance. In his view, accountability is typically viewed as summative and is related to judging the effectiveness of educational services.

The performance function of evaluation (assessment) is related to the personal growth dimension (support) and is most often associated with the term *supervision*. The purpose of supervision is usually linked with helping teachers learn about, reflect on, and improve upon

their practice. Supervision is a separate process from evaluation in that it is formative in nature and promotes continuous professional growth and development (Iwanicki, 1990). According to Starratt (1997) supervisors should be concerned with generating trust, building community, facilitating teamwork, networking teachers, building a culture of professionalism, working with teachers on curriculum development and helping to shape faculty development programs. Supervision should be viewed as a course of action for improving instruction. When supervision is practiced as it should, it is possible to reach what Garman (1982) described as organic reciprocity, in which teachers and supervisors work as partners to share expertise and engage in instructional dialogue for the purpose of improving teaching and increasing student achievement.

Teacher supervision and teacher evaluation are essential functions that share the common purpose of improving the educational experiences of students, yet, they are separated by distinct and fundamental differences. Zepeda (2002) explains:

> Evaluation and supervision are two different sides to the same coin…. In many practical situations, however, the intentions of supervision and evaluation become blurred and indistinct when summative evaluation *is* supervision. Ideally, the processes of instructional supervision, staff development, and evaluation should be linked. (p. 83)

Glatthorn (1990) in, *Supervisory leadership: Introduction to instructional supervision*, points out that in effective schools, supervisors see their role as both monitoring and supporting thus forming the link suggested by Zepeda (2002). Danielson and McGreal (2000) and Nolan and Hoover (2005) also support the idea of linking supervision and evaluation through one person. Nolan and Hoover (2005) specifically state supervision and evaluation, so long as the process are separated, "can be used together as powerful, complementary components" (p. 35). They suggest that the supervisor is the link that codifies the relationship between supervision and evaluation, thus eliminating the "role conflict".

2.1.2.3 Who gives us the authority?

Another issue worth exploring when investigating the legitimacy of supervision and evaluation involves the question of authority. One source of authority that can be used to validate the legitimacy of supervision and evaluation comes from the abundance of educational research conducted on the effects of the teacher on student learning. Researchers have revealed the single most important factor affecting student achievement is the quality of the teacher (Darling-Hammond, 2000; Rice, 2003; Stronge, 2002; Whitaker, 2003). The main variable in the classroom is the teacher (Whitaker, 2003) and the effects of teachers on student achievement have been found to be both additive and cumulative (Rice, 2003). Additional reports such as the 1993-94 Schools and Staffing Surveys (SASS) and the National Assessment of Educational Progress (NAEP) suggest that policy investments regarding the quality of teachers may be related to improvements in student performance (Darling-Hammond, 2000). It is also reported that certain teaching practices have been found to positively effect student achievement (Brophy & Good, 1986) and as parents and lawmakers become aware of such findings regarding teacher quality, they apply political pressure. This pressure results in a third example of authority: the community. As the community applies political pressure on local representatives, state departments of education are compelled to enact accountability measures. Using the current research as their guide, the states develop alternative forms of assessment (J. G. Claudet, 1999; C. D. Ellett, Teddlie, C., 2003; Howard, 2001; Milanowski & Heneman III, 2001; Olebe, 1999; Sawyer, 2001) and mandate the public schools carry out the new policies.

Furthermore, the question of authority is closely tied to responsibility. Historically, the school committees of the 18th century who appointed local ministers, selectmen, and other distinguished members of the community, conducted the supervision of schools (Nolan & Hoover, 2005). During the 19th century it became "the legitimate right of the state to protect

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children from harm owing to incompetent, immoral, or unprofessional teacher behavior" (Nolan & Hoover, 2005, p. 28) and the responsibility for administration of the schools was handed over to the professionally trained school superintendent. The superintendent of schools is then accountable to the community and must ensure the proper education of the students within the boundary of the school district. The superintendent will typically designates personnel to conduct the supervision and evaluation on his/her behalf, thus leading to the next issue regarding the legitimacy of supervision: Whose expertise counts?

2.1.2.4 Who carries out the function of the supervisor/evaluator?

Goldsberry (1997) indicates that the *who* is important but does not specify who: just someone. The superintendent of schools is charged with the responsibility of ensuring the proper education of the students within the boundary of the school district (Nolan & Hoover, 2004). Although the superintendent has the final authority, they delegate this responsibility. Should it be the principal? Whitaker (2003) would argue yes. He contends that the principal is ultimately responsible for the school and thus, should assume an active role in supporting and evaluating teacher performance and student achievement. Nolan and Hoover (2005) concur, stating that only individuals who are "properly certified by the state are allowed to carry out the process of teacher evaluation" (p. 33) as certification implies a level of expertise required to fulfill the role. Fink and Resnick (2001) echo this view. They report how an effective change in the classroom came about through a strong focus on instructional leadership. Fink and Resnick (2001) researched the effects of a cognitive apprenticeship model that was used to coach principals in the development of good interpersonal skills and the acquisition of content knowledge. Fink and Resnick (2001) cite that the model proved effective in cultivating a staff of effective teachers. As a result of this performance development model Fink and Resnick (2001) report principals

were better able to judge the quality of teaching and had the skills to address specific areas of weakness with individual teachers. The overall results of the study were positive and ultimately resulted in higher student achievement.

2.1.2.5 Is anyone else qualified?

Nolan and Hoover (2005) take an affirmative position. While they maintain that evaluation must be left to the state certified expert, supervision by contrast "relies on shared expertise" (p. 34) and can be successfully carried out by multiple individuals in multiple roles. The supervisor and the teacher work together collecting information, discussing teaching strategies, the needs of students, and subject matter. They then corroborate to develop, test, and refine classroom instruction that best meets the needs of the students. The supervisor in some instances can be a peer or a variety of other individuals. Overall, teacher supervisors have been dedicated to the professional growth of teachers, the development of curriculum, and the support of instruction (Glanz & Neville, 1997) and are not responsible for making summary judgment about the quality of teaching. Therefore, the *who* becomes a person, or group of people, that have the skills to serve the needs of the students, teachers, and district.

2.1.3   Characteristics of Supervision and Evaluation Systems

A stated purpose of teacher supervision and evaluation is to promote individual teacher growth beyond current levels of performance. Embedded in this description lies the assumption that one is able to describe quality teaching and effectively "measure, and analyze the complex, rapidly occurring, array of cognitive, behavioral, and setting events which characterize live instruction"

(Eisner, 1983, p. 4). The next several sections explore these issues by investigating three interrelated questions. What is quality teaching? What is assessed? What tools does one use?

2.1.3.1 What is effective teaching?

Historically, the question of what constitutes quality teaching has been a topic of great debate to which the answers have been elusive and ever evolving. Noddings (1974) suggests there has been little to no agreement on what constitutes quality teaching or how one might educate individuals to acquire it even if its definition were universally agreed upon. Conversely, others assert common traits are evident and certain teaching practices can have a positive effect on student learning (Brophy & Good, 1986; Mendro, 1998; Sanders & Rivers, 1996; Tucker & Stronge, 2005; Wright, Horn, & Sanders, 1997). One such example can be found in the work of Marzano, Pickering, and Polock. Marzano, Pickering and Polock (2001) conducted a meta-analysis that examined over 100 research reports on instruction involving more than 1.2 million subjects. In the course of the analysis, they found nine strategies that are prone to have a high probability of enhancing academic achievement for all students across all grade levels and subject areas. These strategies include identifying similarities and differences, summarizing and note taking, reinforcing effort and providing recognition, homework and practice, nonlinguistic representations, cooperative learning, setting objectives and providing feedback, generating and testing hypotheses, and cues, questions, and advance organizers. Marzano, Pickering and Polock (2001) cite statistical evidence for each strategy and illustrate how teachers can effectively incorporate them into their daily lesson to positively effect student achievement. Similarly, Stronge (2002) cites that there is a continually expanding body of knowledge regarding teacher effectiveness. Like Marzano, he has found certain teaching behaviors and characteristics promote student achievement. Stronge (2002) contends that after a careful review of the

research, one is bound to find inconsistencies in defining what constitutes good teaching. However, by examining a variety of elements such as the characteristics of a teacher as an individual, teacher preparation, classroom management, and the way a teacher plans lesson, teaches, and monitors student progress, one can begin to piece together a portrait of an effective teacher. Additionally, Tucker and Stronge (2005) assert studies have shown that a range of personal and professional qualities are associated with good instruction. Their findings indicate that quality teachers:

> have formal teacher preparation training; hold certification of some kind and are certified in their field; have taught for at least three years; are caring, fair, and respectful; hold high expectations for themselves and their students; dedicate extra time to instructional preparation and reflection; maximize instructional time via effective classroom management and organization; enhance instruction by varying instructional strategies, activities, and assignments; present content to students in a meaningful way that fosters understanding; monitor students' learning by utilizing pre- and post assessment, providing timely and informative feedback, and re-teaching material to students who did not achieve mastery; and demonstrate effectiveness with the full range of student abilities in their classrooms, regardless of the academic diversity of the students. (p. 2)

Although there are varying definitions for what constitutes quality instruction, the research findings are consistent with regard to the effects of teachers on students. Wright, Horn and Sanders (1997) assert that the key to affecting student learning is the teacher and that the evidence strongly suggests that more can be done to improve education by improving the effectiveness of the teacher than by any other single factor. This research is confirmed by the findings reported by Mendro (1998), Rivers and Sanders (2002) and Tucker and Stronge (2005) and are echoed by Whitaker (2003) in his book, *What Great Principals do Differently*. Whitaker

repeatedly stresses that the number one influence on student behavior is teacher behavior. From lesson planning, to assessment, to discipline, teachers do "the best they know how. If we [principals] want them to do better, we must help them improve their skills and master new ones" (Whitaker, 2003, p. 35). He asserts that the principal's primary role is to teach teachers. The principal, working collectively with teachers, continue to refine the definition of quality instruction and together, strive to find strategies to achieve a higher level of effectiveness.

2.1.3.2 What is assessed?

What criterion does one use to assist and assess? Given that "Personnel evaluation is a complex process that takes place in a complex social context" (Scriven, 1995, p. 111) the best answer may be, "It depends." It depends on content, context, and experience of the teacher, experience of the evaluator, politics, time, and many other criteria. The supervisor should establish a wide array of tools and techniques and work in a collaborative manner to get others involved in the supervision process. Traditionally, teacher evaluation has been based on the act of teaching and documented almost exclusively through the use of classroom observations (Tucker & Stronge, 2005). Sullivan and Glanz (2005) believe that the "judicious use of reliable and easy-to-use observation techniques can increase a teacher's awareness of classroom behavior" (p. 75) and suggest that the use of these observation tools and techniques enable supervisors and teachers to work together, in a reflective process, to improve instruction. The answer to the questions of what is assessed and what tool should be used should be based on the needs of the teacher.

Observation tools assume good teaching can be described in words and instruments often list these exemplary traits of best teaching practices and simply indicate their presence or absence (Marczely, 2001). Stronge (2006) offers suggestions for criteria that ought to be

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included in and evaluation instrument. He lists six essential elements that make up the foundation of an evaluation tool. The list consists of what teachers are doing, what administrators want the teacher to do, what research says good teachers should do, what theories of teaching and learning say teachers should do, what the outcomes of the teaching are, and what the role and responsibilities of the teachers are. Stronge and Ostrander (2006) further develop these essential elements by suggesting key features including the need for mutually beneficial goals, an emphasis on systematic communication, a climate for effective evaluation, the need for a technically sound evaluation system (legally and ethically acceptable, useful, informative, timely and influential, efficient and easy to use, accurate, valid and reliable), and the use of multiple data sources (i.e., classroom observation, client feedback, student performance data, portfolios, self-evaluation).

Many observation tools are in existence and can typically be lumped into the two main categories of quantitative and qualitative. Quantitative methods count teacher-student behaviors reducing data into pre-defined categories. Qualitative approaches describe classroom events revealing common themes. Sullivan and Glanz (2005) discuss 26 observation tools (some quantitative, other qualitative) that they have found to be useful. The various observation tools provide a "different and unique lens to view a situation or a classroom… - just a different, not better, perspective" (p. 84) of student-teacher interactions. The tools were designed to collect very specific data and supervisors should identify and use the tool that most closely matches the current need. For instance, frequency tools count pre-defined behaviors at time intervals; performance indicator tools list actions or activities and the supervisor marks the instrument according whether or not the event occurred; visual diagramming tools paint a picture of classroom activity; open-ended narrative tools script every person, event or thing the observer considers to be significant to the instruction; and open-ended observation child-centered tools

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focus on the learner and the observer records data in an attempt to answer learner centered questions. In any case, the supervisor becomes a neutral observer whose task is to collect data. This information is then used as an element in the supervision/evaluation system.

Classroom observation represents one way to gauge teacher quality. Evaluation systems also collect data that are not observable by sitting in a classroom and watching student-teacher interactions. A comprehensive system will also examine criteria regarding professionalism and lesson planning and preparation. Other systems include the collection and analysis of data from parent and student surveys. Tucker and Stronge (2005) suggest the use of the learning gains of students as an additional way to assess teacher effectiveness. They report that "an evaluation approach that examines both the *act* of teaching and the *results* of teaching provides a more balanced and realistic appraisal of teacher effectiveness" (Tucker & Stronge, 2005, p. 11). Tucker and Stronge promote the use of student data as a tool that has the potential to improve the teacher evaluation process, however, they caution administrators to be sure the data collected on student performance are fair and realistic. Realizing the difficulties in reaching a consensus on how to best measure student learning, Tucker and Stronge caution administrators to account for what Schalock (1998) describes as collective and conditional accountability. Collective accountability should be thought of as collective responsibility, whereby all stakeholders (parents, administrators, teachers, and students) share the burden of educating our young people. The conditional nature of accountability involves external variables such as available resources (textbooks, computers, and other instructional supplies), class size, and specific special needs of students that are beyond the control of the teacher. To ignore any of these factors and hold the teacher solely responsible is blatantly unfair.

To a high degree, what is assessed is also dependent upon who is being assessed. Alfonso (1997) argues that teachers want feedback on their performance. Teachers, like

professionals in any organization, seek validation for a job well done as well as constructive criticism on how to improve. Novice teachers and teachers new to the district have different needs than the marginal to the exceptionally able teachers who have been with the district for years. What is assessed should be focused on the individual needs of each teacher. By differentiating the supervisory techniques and incorporating multiple forms of data to make judgments on quality performance, the system is more likely to be compatible with individual learning styles thus, helping teachers grow in ways that are beneficial personally and professionally (Nolan & Hoover, 2005; Sullivan & Glanz, 2005).

2.1.3.3 How should supervision be conducted?

Does one size fit all? What tools are available? Large collections of writings are dedicated to responding to these elusive and complicated questions. Many experts (Alfonso, 1984; Cogan, 1973; Danielson & McGreal, 2000; Downey, Steffy, English, Frase, & William K. Poston, 2004; Garman, 1982; Nolan & Hoover, 2005; Ramlow, 2005; Sullivan & Glanz, 2005; Tucker & Stronge, 2005; Whitaker, 2003) have established guidelines for conducting supervision and evaluation. Today, popular models and techniques such as Clinical Supervision, Differentiated Supervision, Developmental Supervision, Cognitive Coaching, Reflective Practice, Reflective Teaching, Reflective Coaching, Portfolio Assessment, Peer Coaching, Peer Assessment, Peer Supervision, Mentoring, Walk-Throughs, Action Research, Trait Model, Teaching Process Model, Instructional Objectives Model, Teacher Performance Objective Model, and Client Supervision are being implemented in multiple variations throughout k-12 schools. One will also find lists of how to observe, lists of things to observe, lists of observation tools, lists of criteria to include in the observation tool, lists of effective ways to listen and offer feedback and suggestions of how often to visit the classroom. The most recent writings in

supervision and evaluation share common themes of: (a) individualizing/differentiating the supervision/evaluation process to promote active involvement; (b) using multiple sources of data that are systematically collected over time; (c) collaborating to create a system where ideals such as trust, sharing, and reflection are combined with tools that are aligned to the strategic goals of the district; (d) linking supervision with staff development and evaluation to assist teachers in becoming more resourceful, informed and skillful; (e) using the most appropriate and skilled person(s) to act as coach, mentor, supervisor and evaluator; and (f) using time creatively and efficiently (Anderson, 1993; Costa & Garmston, 1994; Danielson & McGreal, 2000; Eisner, 1983; Glickman, 1985; Instructions for use of PDE 426 427 and 428, 2003; Kaye, 2004; Lieberman, 1995; McQuarrie & Wood, 1991; Nolan & Hoover, 2005; Pajak, 2002; Tucker & Stronge, 2005).

One example of an evaluation system that incorporates the recommendations of current supervision and evaluation research is the recently developed Pennsylvania Department of Education (PDE) teacher evaluation plan. To ensure that all public school teachers in Pennsylvania are able to offer high-quality instruction to their students and also meet the Pennsylvania Code requirements, Chapter 49, 49.18(a), (2) (iii) and 49.81 (b)(1-10), the PDE requires the use of the PDE 426, PDE 427 and PDE 428 teacher evaluation forms. The forms, modeled after the work of Charlotte Danielson, are separated into four broad categories of planning and preparation, classroom environment, instructional delivery, and professionalism. Each category contains several indicators for which the supervisor is to reference a rubric for determining a rating of satisfactory or unsatisfactory. Before the evaluation, the supervisor is required to meet with the teacher to review the categories, performance indicators, and scoring rubric. Key features of the evaluation system include (a) a differentiated process based on experience level and other individual needs of the teacher, (b) a requirement to use multiple

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forms of evidence to justify the evaluation, (c) a requirement for multiple classroom visitations, and (d) strong ties to professional development opportunities. The design is comprehensive yet flexible and was designed with the intent of providing a shell whereby districts could create an instructional improvement program that melds together competence and quality performance with professional growth of teachers, the fostering of curriculum development, and the support of instruction.

The most important people in a school are the students and "The best way to provide an exceptional learning environment for students is to give them outstanding teachers" (Whitaker, 2003, p. 35). We also know that the effects of teachers on student achievement are both additive and cumulative (Rice, 2003) and therefore we continue to search for supervision and evaluation models to help create great schools.

Acknowledging that providing the best learning environment changes over time, supervisors should be aware of the various change agents affecting our schools. Schooling, and therefore teaching, is in a constant state of flux and a major change agent is technology. The next section of this paper describes the nature of technology in k-12 brick-and-mortar schools.

2.2   NATURE OF TECHNOLOGY IN EDUCATION

2.2.1   Generation Y

The current generation of students is often referred to as Generation Y or the Millennial Generation. Generation Y includes anyone born after 1980, meaning, those who do not know life without computers and the Internet. Marc Prensky refers to this group of students as *Digital*

Natives. Digital Natives "think and process information fundamentally differently from their predecessors" (Prensky, 2001, p. 1). According to Dr. Bruce D. Berry of the Baylor College of Medicine, the Digital Native's brain has physically changed because of the different kinds of experiences they have encountered throughout their lives. They have grown up in a world that requires them to be flexible, adaptable synthesizers of information (Livingston, 2006). This is a group of students who use the Internet as a means of controlling what they learn (Harris Interactive and Teenage Research Unlimited, 2003). They are discerning users of technology tools, hunter-gatherers of information and "native speakers" of the digital language - fluent in the interconnected, collaborative workspaces. The Internet is their fountain of information; and their digital *toys* are their knowledge creation *tools*. This new generation of students seeks a new type of education, one that occurs on a platform to which they are accustomed: an Internet-connected gadget. Educators, in an effort to provide effective instruction for this new type of student should strongly consider creating new models of teaching and learning grounded in authentic communication, collaboration and investigation (Johnston & Cooley, 2001). Personal computers and the Internet are just two of the primary technologies that are being used to support these new models that are increasingly viewed as essential to raising student achievement to the levels demanded by 21st century society (School Technology and Readiness Report, 2001).

2.2.1.1 Technology Use in Schools

Technology in education is on the rise. An estimated 14,000 public schools have 1-to-1 laptop programs (Livingston, 2006). In 2005, Internet access in U.S. public schools was reported to be nearly 100%, an increase of 65% since 1994. A recent annual federal survey reported 92% of schools have Internet access in their instructional rooms—which include classrooms, computer labs, libraries, and media centers—compared with 77% in 2003 and only 3% in 1994

(Wells & Lewis, 2006). In fact, the number of Internet-connected computers reported in 2005 reached a 3.8 to 1 ratio as compared to a 12.1 to 1 ratio in 1998 when the statistic was first measured (Wells & Lewis, 2006). In addition, more and more schools are using the Abilene Education and Research Network, known as Internet2 (Internet2 k20 initiative connectivity survey, 2006). Over 46,000 K-12 schools, community colleges, libraries, and museums in 35 U.S. states are now connected to Internet2. The survey also cites that 37% of all U.S. K-12 schools use this technology to provide students with broadband access to world-class learning experiences like master music classes taught by world-renowned musicians using DVD-quality videoconferencing or science experiments with advanced electron microscopes found at research labs using remote imaging instruments (Internet2 k20 initiative connectivity survey, 2006). Through Internet2, students also participate in programs like Megaconference Jr., a project that brings together thousands of students in elementary and secondary schools from around the world using advanced multi-point IP based video-conferencing. The survey found that since 2004, the number of K20 organizations, which connect at speeds above 10 megabits per second (Mbps), has nearly tripled from 2,178 in 2004 to 6,068 in 2006. In addition, the vast majority of performing arts centers, science centers, and planetariums now also connect to the network at rates above 10 Mbps (Internet2 k20 initiative connectivity survey, 2006).

2.2.1.2 Technology and Student Achievement

Students want to use technology to learn and, as indicated above, the amount of technology at school is on the rise. However, as Lisa Bartles (2000), in her article, "Gathering Statistics, Is Technology Doing What You Want It To?" asks the tough questions. She asks her readers to reflect on whether or not technology is making a difference in student achievement. This is a fair question being asked by critics, parents, and policy makers. These stakeholders

have high expectations for technology in schools. They expect it to be available and working, facilitate the management of administrative tasks, promote higher achievement by engaging students in meaningful ways, and give students a head start for the future, thus, preparing them for the 21st century workforce. However, does technology do any of this? How do we know?

Research reports and journal articles detailing the effectiveness of technology on student achievement reflect a range of opinions and conclusions. On one end of the spectrum, advocates cite literature showing the positive impact of technology on student learning. On the other end, critics present strong arguments that there is little, if any, evidence from research to support the claim that the use of technology in classrooms is worthy of the resources it requires (Kimble, 1999). Due to the complex relationship between instructional technology and student achievement Kimble (1999) cautions readers to be wary of making overgeneralizations (pro or con) when citing the effects of the use of technology in the classroom. An examination of the studies in the field of instructional technology reveal evidence of the positive impact of technology on student learning under specific conditions and therefore require careful interpretation if used to support broad decisions about technology integration (Kimble, 1999). This caution is echoed by Bartles (2000) as she suggests that the answers might reside in a compilation of studies that have addressed specific uses of technology in specific instances but have not been aligned to yield more useful generalizations (Bartles, 2000). Another factor to consider when reviewing the research on technology in education is the rigor in which the technologies are examined. Guiney, addressing the deficiency of formal research on instructional technology states, "the effectiveness of technology programs and technology-integrated lessons is rarely assessed formally" (1999, p. 34). Johnston and Cooley (2001) in their book, *Supporting New Models of Teaching and Learning Through Technology*, provide a rationale for this deficiency. They cite factors such as the lack of clarity about the learning

outcomes, the lack of data on total cost of technology ownership, the lack of district data linking technology to the evaluation of student achievement and the use of traditional research paradigms that were never intended to capture the newer learning outcomes promoted through technology. Moreover, research efforts regarding the use of technology in education are made more difficult because controlling variables is next to impossible. In the imperfect research environment of schools, longitudinal studies are difficult to conduct, teachers sometimes need several years to become comfortable with the technology, and the teachers often change their instruction in the middle of an intervention. In addition, implementation strategies frequently differ from evaluation strategies and standardized tests are remarkably insensitive to the impact of many technology projects (Herman, 1994). The complexities of assessing the effectiveness of technology in education are further compounded because research methods used to determine technology's impact on student learning are changing due to rapid changes in the technology itself and the ways teachers and students engage with the technology (Kimble, 1999).

Early research, which tried to correlate students' standardized test performance with a particular technology intervention, illustrates the methodological problems with the experimental research designs often used. However, despite these complexities, "as our knowledge of human learning and our technological capabilities grow, researchers and practitioners are designing new methods of evaluating the effectiveness of technology" (Johnston & Cooley, 2001, p. 5). Cooley (2001) suggests that the evaluation question should not be "Does technology work?" but rather the questions, "When does technology work, and under what circumstances?" Cooley (2001) believes that if educators investigate the latter questions, the focus of evaluation will shift from the technology itself to how the teachers and students are applying it to teaching and learning. Thus, the types of technology integration that influence student achievement may become more evident.

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In order to demonstrate the effectiveness of technology on student achievement clear goals and objectives must be articulated. Once these goals and objectives are established, a consensus about the outcomes that technology is expected to promote will arise and thereby, provide a standard for measuring the program's effectiveness (Johnston & Cooley, 2001; School Technology and Readiness Report, 2001). In addition to clear goals and objectives, improved data collection, reporting, and analysis are required for districts to determine the return on investment the technology provides. In an effort to develop a better understanding of the impact of technology on student achievement, schools should be careful to plan a cost-benefit framework to compare the relative cost of attaining a certain level of student achievement through a variety of technologies. When research (a) accounts for the paradigm shift; (b) focuses on the new models of instruction that promote active engagement, real-life tasks, communication, collaboration, problem solving, critical thinking, and independent exploration; and (c) aligns assessment strategies it becomes evident that "technology can enhance student learning" (Johnston & Cooley, 2001, p. 3).

Anyone serious about technology implementation should give careful consideration to the research from both the skeptic and the champion. Critics have provided some valuable insight into the problems that face instructional technology. For instance, Oppenheimer (1997) called for different instructional strategies and more extensive professional development for teachers in order to make instructional technology more successful. Ravitch (1998) criticized the use of computers at the expense of other instructional programs like art and music citing that using computers to replace teachers is not an effective or desirable practice. Furthermore, Jane Healey voiced several concerns, one of which in part echoed Ravitch. She questioned the effectiveness of allowing students unlimited access to computers for skill-and-drill wondering if it was helping or hurting the students. She suggested reducing the skill-and-drill math and phonics activities

and replacing them with exercises that contained more open-ended, interactive, and authentic problem solving tasks (1998).

Further complicating the question of the effectiveness of technology in education is teacher readiness. According to a 2005 study, most teachers are not integrating technology into daily instruction and the professional development that is supposed to prepare them is not sufficient (Teachers talk tech 2005, 2005). Today's teachers are Digital Immigrants, or those who speak an outdated language of the pre-digital age (Prensky, 2001). These teachers are struggling to meet the needs of their digital native students. To fully realize the benefits of educational technologies districts should strongly consider providing extensive teacher training on new curricular materials and educational models that address the learning styles of the digital native students.

Technology alone is not going to improve education (Reinhardt, 1995). Good teaching is good teaching with or without the technology. A well-designed lesson is going to have successful results if technology is present or not just as a poorly designed lessen has no hope, no matter what technology is called upon. However, when technology is coupled with "well-defined educational objectives, and integrated into the curriculum by trained teachers, [it] can produce dramatic results for students" (1998, p. 6). The ensuing text illustrates a few of the positive effects of instructional technology.

Instructional technology provides students and teachers assistance in individualizing learning, encouraging group interaction, managing and coordinating learning, fostering student expression, and assisting knowledge production (Hopkins, 1991). In the words of Pamela Livingston, "Computers empower students to get to the thinking faster" (Livingston, 2006, p. 5). In her book, Livingston describes the difference of comparing a laptop computer to a *tool* versus the term she prefers *digital assistant*. She explains how a tool is used for the completion of a

task (e.g., a hammer drives a nail) and a digital assistant as something that can support learning in a much broader sense. Livingston (2006) provides details how the laptop as digital assistant can assist students with many learning activities including "writing, reading, studying, learning, researching, organizing, making assumptions, solving problems, publishing, presenting, connecting ideas, and creating new ways of understanding" (Livingston, 2006, p. 1-2). Similarly, Alan Kay, a former Xerox PARC computer engineer and accomplished jazz guitarist, expresses the spirit of the notation of computer as assistant very well in an interview about the Dynabook. He stated,

> More and more, I was thinking of the computer not just as hardware and software but as a medium through which you could communicate important things. I was thinking about the aesthetic relationship people have with their musical instruments and the phrase popped into my mind: an instrument whose music is ideas. (Ryan 1991, p. 1)

Experts in the field of instructional technology argue that students who have access to digital assistants have a distinct advantage over students who do not (Hopkins, 1991; Livingston, 2006; School Technology and Readiness Report, 2001; Wenglinsky, 1998). They concur that the evidence from the research in the field indicates students who use digital assistants (computers) can (a) expand on their studies through improved access to and processing of information and (b) communicate their understanding and learning more precisely through presentations and products of greater substance and style. These advantages then lead to improved scores on standardized tests and increased application and production of knowledge for the real world. For example, West Virginia experienced widespread increases in statewide assessment scores in basic skill areas with the implementation of a technology-enhanced curriculum. They reported that 11% of the gain directly correlates to the Basic Skills/Computer Education technology implementation program that taught students how to incorporate the technology into their studies

(Mann, Shakeshaft, Becker, & Kottkamp, 1999). The results experienced by Mann et al are not isolated occurrences. James Kulik (2003) from the University of Michigan completed a literature review for SRI International to determine the effects of using instructional technology tools such as integrated learning systems, reading management systems, writing programs for teaching reading, word processing and Internet resources, microcomputer-based laboratories, and science tutoring and simulations in the K-12 environment. He conducted a search of the ERIC database of the U.S. Department of Education's Office of Educational Research and Improvement; the Dissertation Abstracts International (DAI) of Bell and Howell Information and Learning; and the Road Maps database of the National Science Foundation's Division of Science Resources Statistics. Kulik (2003) found 61 controlled evaluation studies. From these studies, he asserts instructional technology has an overall positive effect on student achievement.

More recently, the International Society for Technology in Education (ISTE) published a report detailing how teachers and students may benefit from technology enhanced instruction. Brabec, Fisher and Pitler (2004), in their article, "Building Better Instruction: How technology supports nine research-proven instructional strategies" discussed how teachers can use computer hardware and software tools to support the research-based instructional strategies developed by Marzano, Pickering and Pollock. The article provided concrete examples of readily available technology teachers could use to support the nine instructional strategies and made the argument that building lessons on a solid, research-based foundation of effective strategies, consistently applying those strategies and adding technologies where appropriate would help ensure high-quality education that has the potential of maximizing student success. Instructional technologies have also been shown to be a powerful tool for assisting at-risk students, such as students with learning disabilities or those bordering on academic failure (Interactive Educational Systems Design, 1993; Power on: New tools for teaching and learning, 1998;

Weiss, 1994). By incorporating educational technology tools, educators and policy makers can expect noteworthy improvement in student behavior and absenteeism (Dwyer, Ringstaff, & Sandholtz, 1991), dropout rates (Braun, 1993), employability (Means, 1993), classroom interaction, independent learning, collaboration, and the quality of students' products (Interactive Educational Systems Design, 1993). In the book *Teaching Every Student in the Digital Age: Universal Design* for Learning by Rose, Meyer, Strangman and Rappolt share what they have come to know about the power of using digital media as an instrument to help all students. In their words "digital media surpass traditional media in their ability to meet diverse students' varied needs in a variety of instructional contexts" (2002, p. 60). Digital media is flexible – meaning it can be manipulated almost infinitesimally and then set back to the original form with the click of a button; versatile – in that it can present text, images, sound, graphics, video or any combination, allowing users to work in a style the is preferred and beneficial to how they process and learn information; and transformable – allowing the content to be displayed in multiple variations of size, color, volume, with graphics on or off, speech fast or slow at a high or low pitch. Furthermore, digital media can be "marked up" with HTML code to tag different structural components such as the title, subheading, or main body allowing teachers to provide greater flexibility to alter content to meet the needs and preferences of diverse learners. Digital media is also networkable, allowing the linkage of bits of data for sharing ideas and fostering collaboration and to create connections between words with definitions in the form of text, audio, or pictures. Educators can even link paintings connecting them with writing prompts and cognitive maps spurring greater collaboration, knowledge creation, and depth of investigation.

Further supporting the use of digital material in the classroom are two separate studies that investigated the use of integrating digital video into the curriculum. The first study conducted by Cometrika showed improvements in third and eighth grade science and social

studies scores when video content was integrated into the science and social studies curriculum (F.J. Boster, Meyer, Roberto, & Inge, 2002). The random assignment design used a pretest followed by a month of incorporating at least 30 content-relevant digital video segments. Subsequently, the research administered a posttest. (Both pre-and posttests assessed the Virginia Standards of Learning taught at schools.) The study included random assignment of classes to either an experimental group, those receiving instruction incorporating the digital video application, or a control group, those receiving instruction without exposure to the digital video application. The results of the study reveal that the experimental group students' improvement exceeded control group students' improvement by an average of 12.6 %. The second study, conducted in the Los Angeles Unified School District between January and March, 2004, showed substantial academic improvement in mathematics in both sixth and eighth grade (Frank J. Boster, 2004). Approximately 2,500 sixth and eighth grade students participated in the study. A pre- and post-test that measured comprehension of specific California state education standards for math was used to gauge student achievement for both the experimental and control groups. Throughout the quarter teachers assigned to experimental group classes incorporated approximately 20 standards-based core-concept video clips into their daily lessons while teachers in control group classrooms continued with their traditional lessons. The results showed a statistically significant improvement of 3-5% greater for experimental group students versus those not exposed to the digital video content.

Although technology integration is a difficult, time-consuming, resource-intensive endeavor, "With a better understanding of new and traditional media and how individual brains interact with each, teachers can reevaluate how they teach, how students learn, and how best to use various tools and techniques to individualize these processes" (D. H. Rose et al., 2002). The outcome then being improved learning and teaching (Teachers and technology: Making the

connection, 1995). Prensky (2001) provides a concrete example of how this new understanding of how students learn and the role of technology can be applied to Generation Y students. He cites how a computer-aided design software developer created a *first person shooter* style game to teach mechanical engineers (predominantly males between the age of 20 and 30) to use a highly sophisticated software package. The game titled "Monkey Wrench" was very successful at teaching the engineers how to use the new software largely because they took advantage of the digital native's *natural language*. Prensky (2001) challenges all educators at all levels to rethink and retool their curriculum to map to the strengths of this new breed of students.

A growing body of literature embraces a mode of delivering instruction via the Internet suggesting that it "has made possible the creation, delivery, and management of learning environments that provide textual, audio, video and graphical stimuli to the learner over which he or she has control" (Barbee & Ofeish, 1990, p. 17). According to Lehman, Richardson, Bai, and White (2003) the Internet is arguably one of the most important educational developments in the past fifty years. Dr. Kyle Peck, in a lecture presented at the 2004 Principals' Technology Leadership Academy, illustrated this phenomenon quite well when he likened the effect of the machine on the industrial age to the effect of the Internet connected computer on the information age. His message, as the machine gave us the strength and power to go faster and build taller, the Internet connected computer gives us the cognitive power to access, process, and think faster.

In addition to using technology in a physical space, (i.e., the classroom) educators are adjusting to the needs of the students and are moving to a new arena known as *virtual education*. Virtual education combines a number of educational technology tools to deliver instruction over the Internet. It is a mode of distance learning and is synonymous with e-learning and virtual learning (Watson et al., 2004). Virtual education experiences capitalize on the power of many instructional technology tools and has been found to be an effective means for delivering

instruction (Research info and statistics, 2005). The next section investigates the nature of distance learning.

2.3   NATURE OF DISTANCE LEARNING

2.3.1   Distance Learning Defined

The USDLA defines distance learning as "the acquisition of knowledge and skills through mediated information and instruction" (2005). The NASBE (2001) in a report titled "Any Time, Any Place, Any Path, Any Pace: Taking the Lead on e-Learning Policy" describes e-learning as a set of learning experiences facilitated through the use of electronic resources and designed to support the development, exchange, and application of skills, knowledge, attitudes, aspirations, and behaviors. The strategies employed by educators and students to engage in distance learning vary. Technology offers many options for delivering and receiving education over a distance including written and verbal text, other audio, video, and learning objects such as interactive flash files. e-Learning includes forms of learning, roles for learners, structures for constructing knowledge, and relationships among learners facilitated by current and emerging technologies that may not be available face-to-face. It can range from a single episode to a complete virtual schooling experience. Among some of the primary applications of online learning are providing courses and electronic field trips, supporting rural and inner city classes with student enrichment, student courses, and providing staff development and in-service training for teachers and administrators (Research info and statistics, 2005).

2.3.2   A Growing Trend

Digital Natives are turning to e-learning for a variety of reasons. Students are seeking out this new form of education not only because they are tech savvy, but also because they feel it offers significant advantages over classroom-based programs.   Among the benefits of distance education for elementary and secondary education students are (a) increases in enrollment or time in school, (b) broader educational opportunities, (c) access to resources and instructors not locally available, and (d) increases in student-teacher communication (Cavanaugh et al., 2004). Students who have health issues and those who are threatened by bullies or negative peer pressure find comfort and experience success in cyberschool (Cavanaugh et al., 2004). Some students use e-learning because it is their last chance to complete high school, and others are using it to move ahead and take accelerated courses and earn college credit. Elite athletes and performers find e-learning useful because they travel and need to study wherever they are and students from rural settings see it as a way to reduce the number of hours per day spent on a bus (Chute, 2005; Hadderman, 2002). According to national statistics, e-learning is on the rise and is "among the fastest growing trends in education" (McGraw, 2005, p. 1).

The students are not the only ones championing this remarkable transformation. Parents, educators, and policy makers responsible for the education of Digital Natives have endorsed the power of the Internet as an educational resource (Hassel & Terrell, 2004; Northwest Education, 2004; Research info and statistics, 2005; Setzer & Lewis, 2005; Toward a new golden age in American education: How the Internet the law and today's students are revolutionizing expectations, 2004; Vail, 2002). Parents are seeking additional control and choice for their students (Bauman, 2001; Carr-Chellman & Sockman, 2006; Clark, 2001), teachers are excited about the potential of e-learning to help them meet the individual needs of their students and

policy makers see the promising benefits of virtual learning and school reform, economic development, and equity of access.

A Phi Delta Kappa/Gallup Poll reported that 35% of parents approve of their children earning high school credits online (L. C. Rose & Gallup, 2000). While no single reason exists as to why parents choose virtual schooling, school safety, flexibility, control, and the ability to choose alternatives to the traditional public classroom are among their top motives (Cox, 2004; Hadderman, 2002). Parents are demanding a more personalized approach to education (Cox, 2004) and some, who have tried home schooling to assert more control over their child's education, find virtual charter schools attractive because of the academic support and materials they offer (Cook, 2002; Cox, 2004).

Teachers find the virtual classroom rewarding. Barron (1999) found that through the new and increased interactions accessible through e-learning, teachers feel they can better meet the individual needs of the students. Blair (2002) reports teachers find it easier to develop a strong relationship with the students and parents of the cyber school than they were able to in the traditional brick-and-mortar environment. Undoubtedly, teachers' perspectives vary. Factors such as the lack of face-to-face interaction, the fear of losing control over the content, and the extra work associated with online teaching are detractors, and teachers wonder if online environments can ever overcome these inherent weaknesses (Blair, 2002; Zucker & Kozma, 2003). However, as schools are being asked to tailor more and more to the individual needs of their students, the majority of teachers believe online learning is another way to help children achieve academic success. As pointed out by several authorities, online delivery (a) enhances communication and time management for students and teachers (Barron, 1999; Cavanaugh et al., 2004; Hassel & Terrell, 2004), (b) allows teachers to assume new roles such as mentor or facilitator (Zucker & Kozma, 2003), and (c) is flexible enough to cover the academic spectrum

from remediation to enrichment. The virtual environment provides a combination of flexibility, variety, and one-to-one attention needed for a diverse population of students in a time where adaptability is a necessity not a choice. Another benefit recognized by online learning teachers is that e-learning environments have the potential to transform not only their professional lives, but in some ways, their personal lives. For instance, a teacher working for a virtual school is not bound by the same constraints as those who teach in a traditional brick-and-mortar environment. They are not required to be in a specific classroom, at a specific time, which changes the possibilities not only for where they teach, but also how they teach (Technology counts '02 e-defining education, 2002). Further developing a strong case for virtual environments, teachers report that its potential to support staff development and in-service training as another advantage to adopting distance learning (Research info and statistics, 2005): once again expanding the boundaries of time, space and pace.

Students, teachers and parents have the backing of the local, state and federal government when it comes to virtual learning environments (Technology counts '02 e-defining education, 2002). Sparked by the millennial generation's desire to learn online, and coupled with the school districts' need to be more responsive to students' needs and the requirements of the No Child Left Behind legislation to deliver a quality educational experience for all students, e-learning has been growing at an explosive rate (Long, 2004; Murray, 2004; Northwest Education, 2004; Payne, 2002; Watson & Ryan, 2006). This explosion is occurring on a local, regional, and national level. The National Educational Technology plan calls for states to develop virtual programs because it is their belief that, "e-learning will improve American education in valuable ways and should be universally implemented as soon as possible" (Any time any place any path any pace: Taking the lead on e-Learning policy, 2001, p. 6). The USDE states that educators must embrace e-learning solutions if they want to ensure that every student has a quality

educational experience (Collins, 2004). Their belief is that "e-learning offers flexibility in the time, place and pace of instruction, [and that] it provides teachers the opportunity to create an instructional environment that adapts to students wherever and however they need to learn at home or school" (Toward a new golden age in American education: How the Internet the law and today's students are revolutionizing expectations, 2004, p. 35). The number of states with online programs and policies is one indicator that state-level support for online learning exists. As of the fall of 2006, "38 states have either state-led online learning programs, significant policies regulating online education, or both" (Watson & Ryan, 2006, p. 6). A second indicator, and in a first of a kind, Michigan lawmakers recently passed a bill requiring all students, beginning with the 2007 eighth graders, to have an online experience to graduate from high school (eSchool News Staff, 2006).

In addition to federal and state government support, experts with heavy ties to education are stepping up to tout the benefits of technology in education. John Seely Brown, former Chief Scientist at Xerox and director of its Palo Alto Research Center, wrote about the power of the Web in the USDLA Journal article, "Growing Up Digital". Brown describes the Internet as a transformative learning technology that honors the notions of multiple intelligences, creating knowledge, distributed intelligences, sharing knowledge, and open learning ecology (Brown, 2002). Online learning is changing the way education is delivered, especially for students whose choices are limited due to where they live, physical challenges, or scheduling conflicts (Watson et al., 2004).

2.3.3   Effectiveness of e-Learning

As mentioned above, the rationale for this big push is that they believe "e-learning offers flexibility in the time, place and pace of instruction. [and] It provides teachers the opportunity to create an instructional environment that adapts to students wherever and however they need to learn at home or school" (Toward a new golden age in American education: How the Internet the law and today's students are revolutionizing expectations, 2004, p. 35). The USDE contends that programming for distance learning provides the receiver many options in both technical configurations and content design. However, not all are convinced of its effectiveness. As the number of courses offered online grows, so too grow the concerns associated with online education, particularly those related to the quality of online instruction (I. E. Allen & Seaman, 2003). Just as it is difficult to ascertain the effectiveness of technology integration in the traditional classroom, researchers have difficulty coming to an agreement regarding the educational benefits of distance learning. The text below illustrates the work of various researchers.

2.3.3.1 Evidence that e-learning Does Not Work

Various researchers indicate e-learning programs do not work. For instance, Bond (2002) concluded that distance education could be detrimental to an online instrumental program. Among the findings, he reports that online learning negatively affected student engagement, performance quality, and the development and refinement of skills and knowledge. Bond cited student readiness, teacher readiness, and problems associated with time on logistics as the major barriers to success. Another study conducted by Conzemius and Sandrock (2003) studied distance learning efforts to teach world language programs in elementary grades. It is their

contention that "the optimal learning situation still involves the physical presence of a teacher" (p. 47). They cite many of the same concerns as Bond. According to Twigg (2001), many problems that arise from online education, as it relates to quality, include but are not limited to (a) the requirement of separate quality assurance standards, (b) programs having low (or no) quality standards, and (c) there being no consensus on what constitutes learning quality. Manzo reports that the ineffectiveness of e-learning is due to the lack of quality of online instructional materials (2002). She cites that many courses consist of traditional curriculum copied to the Web, building the "text-and-talk format" that one finds in traditional environments and that this does not constitute good virtual instruction (Manzo, 2002).

Additionally, the tech savvy, Digital Natives may not even be ready for virtual education. Cyber schools are popular with students, parents, teachers and policy makers but test results for 2003 show students at many cyber schools are not measuring up to state standards or to their peers who attend brick-and-mortar schools (Gartner, 2004). For example, according to the Pennsylvania System of School Assessment (PSSA) test results, "of the 11 cyber charter schools in Pennsylvania, only three are meeting or exceeding federal "No Child Left Behind" standards" (Hicks, 2007, p. 1). A review of the state's Adequate Yearly Progress (AYP) Website revealed 90% of the states' school districts met AYP while only 30% of their cyber school counter parts reached the goal (Pennsylvania department of education academic achievement report: 2005-06, 2006). The problem is not isolated to Pennsylvania or even to the United States. Schollie (2001) found that Alberta Canada virtual school students' scores on end-of-year exams in mathematics at grades 3, 6, 9, and 12, and the sciences at grades 6 and 9 lagged significantly behind scores of non-virtual school students.

Scholarly forums across the globe are debating the reasons for the lack of success. Cavanaugh et al. (2004) cite several barriers preventing the success of distance learning in the K-

12 arena. Their research indicates factors such as (a) the limited educational expertise focused on distance education as an area of study, (b) a short-sighted view of the purpose of distance learning, (c) a lack of consensus about the goals of distance learning, (d) a failure to account for the enormous complexity of virtual learning environments, and (e) a lack of sufficient details being collected and reported to conduct in-depth research hinder advances in distance learning. Other researchers have identified similar challenges facing online learning including (a) the change of roles and responsibilities for instructors (Muirhead, 2000; Zheng & Smaldino, 2003), (b) the practicality of teaching subjects that require physical demonstration (i.e., Music, physical education, foreign language) (Cavanaugh et al., 2004), (c) the use of technology (Berge, 1998; Palloff & Pratt, 2000; Valentine, 2002; Volery, 2000), (d) changes in interpersonal relations and interaction with students such as student feelings of isolation and social development issues (Cavanaugh et al., 2004), (e) and the challenges associated with academic dishonesty and authenticating students' work (Huerta & Gonzalez, 2004; Muirhead, 2000).

2.3.3.2 Mixed Reviews

Throughout the literature, one can find mixed reviews concerning the effectiveness of online learning. For instance, Kozma (2000) reports that there is no significant difference between K–12 distance education and traditional education when comparing student levels of academic achievement. Barker and Wendel (2001), while studying Canada's virtual secondary schools, found mixed results when comparing virtual school (VS) students to conventional school (CS) students in grade 9 and 12 across the core subjects areas of English, Mathematics, Science and Social Studies. Overall, Barker and Wendel (2001) report VS students perform as well as their CS counterparts with the exception of math and science. However, they cite students in virtual learning environments performed better than their brick-and-mortar school

counterparts in critical thinking, researching, using computers, learning independently, problem-solving, creative thinking, decision-making, and time management.

2.3.3.3 Evidence That Distance Learning Works

Researchers are exploring everything from the reasons for and methods used to develop online learning environments to ways to incorporate teaching and learning theory to best suit the needs of the virtual student. Barron (1999) lists four broad categories of the benefits of distance learning including convenience, flexibility, effectiveness, and efficiency. In her online book titled, *A Teachers Guide to Distance Learning* she develops the categories into seven components: convenience of location for both the student and the teacher/facilitator; flexibility of time and pace allowing for the individualization and customization of instruction; effectiveness – citing that many research studies have found the distance learning is just as effective if not better than traditional instruction when done appropriately; affordability - indicating that the infrastructure already exists in that 99% of homes in the United States have televisions and are sufficiently equipped with phone lines and have access to voicemail and audio-conferencing; multi-sensory - pointing out one of the major benefits to distance learning is the ability to leverage a variety of multi-modal materials to meet everyone's learning preferences; interactivity - citing that contrary to popular opinion, e-learning environments offer increased interactivity particularly when working with introverted students because they are more likely to participate due to the anonymity of the learning environment; and equity - referring to the great potential for distance learning programs to alleviate inequity issues such as the lack of qualified teachers. In summary, researchers have found: distance learning classrooms are just as effective as their traditional counterparts (Any time any place any path any pace: Taking the lead on e-Learning policy, 2001; Barker & Wendel, 2001; Barron, 1999; Calderoni, 1998; Cavanaugh et al., 2004;

Kleiman, 2004; Koory, 2003); students attitudes toward distance learning are positive (Research info and statistics, 2005); distance learning has the potential to enhance the curriculum, draw home-schooled students back to the classroom, decrease dropout rates, and help retain teachers (Vail, 2002); and distance education is the key to expanding educational opportunities to rural areas (Clarken, 1993; Gamble & Fischer, 1993; Hodder & Carter, 1997; Ludlow, 1992).

One current example of the positive effect of online learning can be found in the non-published work of Meyer and Wijekumar (2006). In their study titled "A Web-Based Tutoring System for the Structure Strategy: Theoretical Background, Design, and Findings" Meyer and Wijekumar (2006) substantiate the usefulness of a Web-based intelligent tutoring system to teach middle school students the *structure strategy*. The structure strategy is a research proven strategy to improve reading comprehension. It teaches readers of all ages to recognize the overall top-level organization of expository text (such as, comparison, problem and solution, cause and effect, sequence, description, and listing) and to use that structure to organize their reading comprehension. The structure strategy provides students a process that helps them recognize these commonly used structures and the signaling used to identify them. Once proficient in the identification of the various strategies, the students learn to use a pattern to write the main idea of a text. The students are then prompted to use the main idea and selected structure to organize their reading thus, improving comprehension and recall. Meyer and Wijekumar (2006) took the strategy one step further and developed the Intelligent Tutoring of the Structure Strategy (ITSS). ITSS is a Web-based tutoring program that utilizes a multi-media animated environment to teach the structure strategy. Meyer and Wijekumar (2006) report positive results citing that "struggling seventh grade readers demonstrated over two grade-level increases during six months working no more than twice a week for 40 minutes with ITSS" (p. 11).

If the proper supports are in place and teachers and students are ready, the literature suggests *well-designed* online learning can be successful. As educators continue to grapple with the effects of virtual education, the trend in online learning continues to grow, and we are witness to the development of a variety of e-learning models, learning theories and instructional strategies.

2.3.4   e-Learning Models

To produce quality online instruction one must begin with an analysis of what students need (Laurillard, 1994). Adaptability is a major benefit of e-learning and as such, educators are making use of it to meet a variety of students' needs. For this reason, several models or applications of distance learning have emerged: each having its own unique characteristics and grounds for existence. Barron (1999) identified eight forms of distance learning which she categorized by application. Her list includes: (a) instruction for homebound students – which the instructor uses a complete set of synchronous and asynchronous tools to deliver instruction to students who physically can not attend the traditional brick-and-mortar school; (b) virtual high schools – where the instructors use similar tools as with the homebound students but seek a virtual education due to other circumstances such as to make up a failed course or to take college credit; (c) instruction for distributed classes – in which the same tools and techniques are used to create more educational opportunities for students who live in rural areas that can not afford to hire a full-time teacher; (d) interactions with outside experts – which utilizes video conference, chat and discussion board tools to afford students the opportunity to discuss critical issues with professionals in the field; (e) mentoring and tutoring programs – that use technology to provide students access to certified tutors and intelligent tutoring software programs; (f) collaborative

projects – that incorporate Web 2.0 tools such as wikis, blogs and social networking sites that facilitate cooperative learning; (g) access to remote resources – that capitalize on I2 high-speed networks to bring valuable resources into the school that would otherwise be unavailable; and (h) staff development programs – that use technology to broaden the professional development opportunities available to teachers and administrators. Each model is designed to fulfill a specific purpose and requires the use of a variety of technologies and teaching strategies.

2.3.5   e-Learning Theory

Marc Prensky provides an interesting opinion about how our children learn. According to Prensky (2001) today's students have been programmed to learn in a vastly different manner than their parents before them. In his *On the Horizon* journal article, "Do they really think differently?" he cites research that explains how the brains of our Digital Natives are "physically different as a result of the digital input they received growing up" (Prensky, 2001, p. 1). Based on the research of neuroscience or "the study of the human nervous system, the brain, and the biological basis of consciousness, perception, memory, and learning" (Engaging kids, 2001) he states:

> Digital Natives accustomed to the twitch-speed, multitasking, random-access, graphics-first, active, connected, fun, fantasy, quick-payoff world of their video games, MTV, and Internet are *bored* by most of today's education, well meaning as it may be. Worse, the many skills that new technologies *have* actually enhanced (e.g., parallel processing, graphics awareness, and random access)—which have profound implications for their learning—are almost totally ignored by educators.

The cognitive differences of the Digital Natives *cry out* for new approaches to education with a better "fit". And, interestingly enough, it turns out that one of the few structures capable of meeting the Digital Natives' changing learning needs and requirements is the very video and computer games they so enjoy. This is why "Digital Game-Based Learning" is beginning to emerge and thrive. (p. 5)

One hurdle identified by researchers in the field is being able to keep the attention of the students. Current learning theory suggests that kids are most engaged when they are actively involved in a meaningful activity. For our digital immigrants this means "going faster, less step-by step, more in parallel, with more random access, among other things" (Prensky, 2001, p. 4). Prensky suggests schools adopt this new learning theory and use it to build what he calls "Future" content. *Gaming* is an example of future content that incorporates this new theory of learning. Prensky (2001) cites research that indicates *gaming,* when properly designed and implemented, improves academic achievement. Lightspan PlayStation games for language arts and math, Scientific Learning's Fast ForWard game-based reading software, and the U.S. Military's mission simulators have all reported positive learning gains when studying the effects of learning games and simulations on learning outcomes (Prensky, 2001).

Another way in which current teaching practices and learning theory can be applied to the virtual learning environment can be extrapolated from an article explored earlier. Brabec et al. (2004) in "Building Better Instruction: How technology supports nine research-proven instructional strategies" focused their writing on providing practical advice for teachers on how to use technology as a tool to help students increase their capacity for learning. They suggested ways in which technology can be implemented to support the nine research-proven instructional strategies reported on by Robert J. Marzano. Although the article concentrated on strategies for the conventional classroom, one could easily apply them to the development of online

instruction. For example, in an online learning environment one could take advantage of the natural match between Marzano's instructional practice of *providing nonlinguistic representations* and Brabec's strategy of *incorporating multi-media tools*. In alignment with the learning styles theory[1], online learning facilitators could design the lesson to include still pictures, audio files, and video files that present topics in a learning style most appropriate for the student. Continuing to build on the ideas of Brabec et al. students could develop multimedia projects, which draw upon Gardner's Multiple Intelligences theory[2] and the constructivism philosophy[3], to demonstrate *similarities and differences* (Marzano practice) or to *summarize* (Marzano practice) the main idea of a unit of study. These types of activities provide a systematic way for students to *analyze information* (Marzano practice) at a deep level thus enhancing their understanding of the content.

In addition, Cavanaugh et al. (2004), in their meta-analysis of K-12 distance learning, also discuss teaching and learning theory as applied to the virtual school environment. They too indicate online learners can benefit from instruction designed from a constructivist's perspective. They explain that each of us generates our own rules and mental models. These models are then used to understand the events occurring around us. Therefore, creating knowledge becomes a process of adjusting our current mental maps to accommodate new experiences. Furthermore,

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[1] The learning styles theory emphasizes the fact that individuals perceive and process information in very different ways [and] implies that how much individuals learn has more to do with whether the educational experience is geared toward their particular style of learning than whether or not they are *smart* (Funderstanding, 2001, Learning Styles)

[2] According to Howard Gardner there are at least seven methods individuals use to perceive and understand the world, each labeled with a distinct "intelligence" that is defined as a set of skills allowing individuals to find and resolve genuine problems.

[3] Philosophy of learning grounded on the premise that, by reflecting on our personal experiences, we construct our own understanding of the world in which we live.

Cavanaugh et al. (2004) explain that according to Piaget, learning should be "holistic, authentic, and realistic" (p. 7) with less emphasis placed on isolated skills aimed at teaching individual concepts. They cite that students are more likely to learn skills while engaged in authentic, meaningful activities and that online learning can be used as a catalyst, helping students to expand their conceptual and experiential background. In addition, they reflect on the work of Vygotsky and other Neo-Piagetians and how they assert that social interaction plays an important role in developing critical thinking skills, communication skills, and problem solving skills. According to Vygotsky, we use input gained through social interaction with others to refine our cognitive abilities to think, communicate and solve problems (Engaging kids, 2001, Vygotsky and Social Cognition). Cavanaugh et al. emphasize that online learning communities can help facilitate these social processes.

2.3.5.1 What is Good Online Instruction?

Experts in online learning have been debating this question since the inception of using the Internet for instructional purposes and are applying research methods to develop an understanding of what constitutes good online instruction. In a Madeline Hunter-like style[4], Margaret Driscoll, an online learning consultant for business, author and keynote speaker on the topic of online learning, recommends ten research-based elements that make up good online instruction. They include (1) a four phase approach to instruction (presenting information, guiding the student, student practice, assessment of student learning), (2) clear objectives, (3) relevant problem-centered experiences, (4) structure and limited learner control, (5) providing meaningful feedback, (6) testing what has been taught, (7) opportunities for adequate practice,

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[4] Madeline Hunter outlined a general seven-step process or method for developing a direct instruction style lesson plan.

(8) active and engaging learning exercises, (9) the use of appropriate multimedia, and (10) dedication and hard work on the part of the learner (Driscoll, 2000). Sarah Haavind, an online instructional designer, and her colleagues from the Concord Consortium created a nine-point model for effective online curriculum design. Like Driscoll, they emphasize collaborative, relevant, project-based, and self-paced learning (Manzo, 2002). Similarly, a University of Penn State Website, designed to provide a quick reference guide to research-based online instructional strategies, identifies many of the same characteristics for quality online instruction. They cite uniform high expectations for all students, a thorough understanding of the different possibilities available in a Web-based environment, and a balance of teaching styles to match the various learning styles are essential elements of creating successful online learning environments (2005). Other studies that researched elements of online instruction found that the quality of human interaction (Quitadamo & Brown, 2001), interactivity, especially timely feedback to student assignments (Phipps, Merisotis, & Harvey, 2000) and providing tools for collaboration, and research (Phipps et al., 2000) are essential ingredients for quality online instruction.

In a more recent study, Cavanaugh et al. (2004) cite several key characteristics of an online teacher. First they suggest there is a necessity for the virtual school teacher to use proper tools and strategies, making effective and efficient use of the power of the technology, to assist the students in acquiring "the skills of autonomous learning, including self-regulation" (p. 6) and collaboration while working "within the students' zone of proximal development" (p. 8). They also suggest that online teachers need to provide students with more supervision, fewer and simpler instructions, and reinforcements that are more extensive. Furthermore, they cite that successful online teachers provide frequent contact with students and parents and design lessons divided into short segments, mastery sequences, and multi-media rewards for learning. Their research also suggests scaffolding or mediated learning is an essential component of Web-based

learning experiences for children and found that an online teacher who designs online instruction that incorporates these elements have more successful students. Additionally, Cavanaugh et al. (2004) have found that high quality online teachers incorporate the many communication tools technology has to offer, making the virtual learning environment more active, constructive, and cooperative than the traditional brick and mortar classroom.

The most recent literature regarding the development of standards for designing quality online instruction builds on the work of Cavanaugh and others. Relying on the "knowledgeable, experienced resource persons from K-12 and postsecondary education, drawn from national and regional organizations, SREB state departments of education, and colleges and universities" (Standards for quality online courses, 2006, p. 2), the SREB developed standards, listing essential elements to include in the creation of quality online instruction. The standards address the five broad areas of course content, instructional design, student assessment, technology, and course evaluation and management. Each standard is sub-divided into smaller areas of concentration that are further refined by a checklist of indicators. The indicators concisely summarize the key points of quality online courses and highlight that:

Quality online courses must include clearly defined curriculum content, effective and easy-to-use ways for students to interact with and learn the content, and be designed to attract student interest. The courses must utilize technology that enables the teacher to customize each student's learning experience through tools and formats such as video, interactive features, resources, and links to related information. A quality online teacher, working with students in a well-designed and well-developed course, is also essential to success. (2006, p. 1)

Like the SREB, Darling-Hammond (2000) stresses the importance of a quality teacher. Darling-Hammond (2000), when reporting on the need for quality teachers for the traditional

classroom, draws from educational research that indicates teacher effectiveness plays a primary role in student learning. After investigating the similarities in student outcomes between distance and classroom learning, one could suggests that teacher preparation is equally critical. However, very little attention has been paid to formally preparing educators for the unique nature of virtual education allowing little time for teachers to develop the necessary skills to be effective in a distance learning environment (Cavanaugh et al., 2004). Therefore, supervision and evaluation tied to professional development become critical components for ensuring the quality of virtual teachers. The next section provides a review of research related to the supervision and evaluation of cyber teachers.

2.4   NATURE OF SUPERVISING CYBER TEACHERS

How does one supervise cyber teachers as, "they can't walk out of their offices, stroll into the classroom, and take a seat at the back to observe the day's lesson? But they can go online and get megabytes of vital information about the teacher" (Evaluating online teachers is largely a virtual task, 2005, p. 1). Dr. Kyle Peck, a Professor of Education and Associate Dean for Outreach, Technology, and International Programs at Pennsylvania State University, expressed similar comments in an email exchange discussing the topic of supervising cyber teachers. He stated it was a topic worthy of further exploration and offered the following elaboration.

> While it is true that some information is not there (how the teacher dresses, classroom management, and other things you mentioned), it is also true that there is in fact *a lot more* [italics added] information for anyone who wants to do a thorough evaluation. Just about *everything* [italics added] that happens in an online class is available. You can see

every communication between a teacher and a student, every assignment given, every student response, and so forth. So, if you look at it from that perspective, there is the possibility to do a much better job of evaluating and of improving teacher performance. (K. Peck, personal communication, October 29, 2003)

As Dr. Peck stated, there is a plethora of information available, but how does one sift through to what is important? Similar to the supervision and evaluation models of the traditional classroom, cyber models are laden with complex questions. Who does the supervision? What perspective is supervised, (i.e., does one watch the teacher at his/her computer), or watch from the student perspective (i.e., is the student in the same physical space as the supervisor?), or would it be best to watch a pre-recorded lesson (and is the teacher in the same physical space as the supervisor?). Does any one style or combination of styles lend themselves well to the world of cyber supervision? How does one manage their time to evaluate effectively? Are there any tools developed to conduct a "cyber walk-through?" Essentially, how does the cyber supervisor develop a supervision model that takes the shape of an instructional improvement program that melds together competence and quality performance with professional growth of teachers, the fostering of curriculum development, and the support of instruction?

Supervision and evaluation of cyber teachers is an important topic. Cavanaugh et al. (2004) specifically state that assessing the effectiveness of virtual teachers is an area warranting special consideration. During recent times, we have witnessed an explosion in virtual schools (Long, 2004; Murray, 2004; Northwest Education, 2004; Payne, 2002). Nearly three-fourths of public school districts in the United States plan to offer or expand distance-education programs in the near future (Setzer & Lewis, 2005) and 90% of children between ages five and seventeen use computers (Young children's access to computers in the in home and at school in 1999 and

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2000, 2003). For these reasons, Cavanaugh and her colleagues believe "scientific evidence is

needed to guide the growing numbers of online school developers and educators" (2004 p. 8).

2.4.1 Technology in Conventional Supervision Models

Before one begins contemplating how to supervise people from a distance one may find it

beneficial to reflect on how technology is being used in conventional supervision models. Alan

November[5] posed a very low-tech, low-cost augmentation to enhance the supervision practices

of principals in a conventional school. During the 2002 Pennsylvania Superintendents

Technology Leadership Academy (STLA) keynote presentation, he suggested that teachers use a

VHS camera to record themselves during a lesson. He went on to say that principals should

encourage the teacher to videotape their teaching as many times as it would take to come up with

a lesson that they wanted the principal to view for evaluative purposes. After suggesting this

intervention to the audience, he paused, and then asked, "Don't you think this would help

improve instruction?" Amodeo and Taylor (2004) co-authored a piece for the *Technology*

Horizons in Education Journal (THE Journal) entitled "Virtual Supervision' Model Tips the

Scales in Favor of Instructional Leadership" that echoes November. The benefits of

asynchronicity, time shifting, and flexibility afforded by the VHS solution posed by November

were taken to a higher level due to advances in digital video technology and IP-based video

conferencing. The article discusses a possible solution to the ever-so-common complaint by

administrators of not having enough time for proper supervision and evaluation of their teachers.

Their solution involves IP-based videoconferencing technology. IP-based video conferencing

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[5] Alan November is a renowned author and conference keynote-speaker on promoting the
effective use of instructional technology to support and enhance learning for children.

equipment can be used anywhere an Internet connection is available. The content can then be digitally archived thus providing the capacity for advanced searches and remote access, providing enhanced flexibility over its VHS and ISDN cousins. Amodeo and Taylor (2004) speculate that streaming video (to a password protected storage device) of teachers interacting with their students offers several advantages to a more traditional approach including (a) greater flexibility in the scheduling and reviewing of teacher lessons because the principal needs not be present for the lesson and the archived video can be reviewed at the convenience of the principal, (b) greater validity of a lesson as the lesson is not compromised by the presence of the supervisor (as is likely to happen with the traditional observation), and (c) archival of the lessons creating a database of information that could be used to enhance the teaching skills of the teachers throughout the district.

In addition to video technologies discussed above, Kuralt (1987), Sharpe (1997), and Englert (2004) found the use of written transcripts and software checklists completed on laptop and hand-held computers to have a positive effect on synchronous face-to-face supervisory practices. Kuralt (1987) in an *Educational Leadership* journal article titled, "The Computer as a Supervisory Tool"*,* described how he used a small lap-top computer to record teacher and student classroom behavior to assist in providing teachers with an objective record of the lesson. The transcript was then independently reviewed and analyzed by the teacher and principal. After the analysis period, a post observation conference was set up for the teacher and principal to discuss the lesson and collaborate to developed recommendations and goals. Similarly, Sharpe (1997) describes a software instrument for use with physical education teacher training. The software, once loaded onto a laptop computer, allowed the supervisor to observe, report, and provide immediate feedback to the student teacher directly from the field. The computer-mediated instrument was designed to collect quantitative as well as qualitative data. Sharp

found, with proper training of supervisors on the system and the definitions of the terms used in the instrument, supervisors were able to (a) render a more accurate description of the highly interactive physical education class and (b) provide ongoing evaluation and feedback in a timely and friendly manner.

Directly aligned with Kuralt and Sharpe, Dr. William J. Englert, Jr., then, Principal of Peters Township High School in the Peters Township School District, devised a similar method of using hand-held computer technology to assist in the teacher observation process. Dr. Englert participated in the 2003 Principals' Technology Leadership Academy (PTLA) where he learned of a FileMaker Pro program called the Tech Lesson Rubric. This program was created by Dr. Kyle Peck to facilitate the observation and evaluation of technology integrated lessons.

Dr. Peck designed and built the Tech Lesson Rubric to run on a Palm Handheld Computer to assist principals with the observation of technology-integrated lessons. The system leads the observer through a series of look-fors or statements about the lesson. Directly under each statement appeared a dropdown menu that contained a Likert type scale of appropriateness. The dropdown menus allowed the observer to quickly select a rating for each aspect of the lesson. Through the FileMaker Pro database program, each rating selection was associated with a more detailed narrative describing the lesson attributes. The narratives were then joined to form the final observation summary. The transcript of the lesson could then be exported into a text editor for final comments and then emailed to the teacher for review. Later, it could be recalled for the post-observation session for review, comment, and goal setting.

Dr. Englert, frustrated as many principals are over the lack of time for classroom observations, decided to create the "General Lesson Rubric". The General Lesson Rubric was modeled after Dr. Peck's original program and was designed to follow the Pennsylvania Department of Education's official observation and reporting forms PDE426, PDE427, and

PDE428. He presented his experiences with the tool at the 2004 Pennsylvania Educational Technology Expo and Conference (PETE&C) in a session titled Teacher Evaluation Tools for the Palm Handheld Computer. In his presentation he stated that the General Lesson Rubric was useful in (a) helping to organize observations and to provide consistent information and feedback, (b) recording observational information in an effective and efficient manner, (c) helping him and his teachers quickly identify areas of strength and areas of needed improvement, and (d) helping him articulate goals.

Two additional studies investigated teacher support and mentoring programs via electronic medium. In 2000 Kovaric and Bott studied the use of electronic mailing lists as a virtual community (VC) to support in-service teachers. They point out that the physical restraint of time is one of the most troubling realities of today's schools [as cited by Lortie, 1975] and that with the advancement of information and telecommunications technologies the concept of the VC can help alleviate some of the problems associated with time, thus improve teacher support systems. Overall, they conclude that their results "indicate that there may be real potential to develop teachers' operational and intellectual lives via VCs" (p. 20). The second study conducted by Heath and Yost (2001) also investigated the use of VC's in the form of a virtual mentorship program, or *telementoring*. The program represents a partnership between the MASTER Teacher organization from the Professional Development Center at the University of South Dakota and the North Central Association Commission on Accreditation and School Improvement (NCA CASI) and the Southern Association of Colleges and Schools, formally known as the Teacher Training Academy (TTA). Through the use of a virtual community concept (group interaction via Web-based discussion bulletin boards and email), they sought to provide beginning teachers with the necessary assistance they seldom receive in a traditional environment. Heath and Yost (2001) report that the telementoring is not as good as face-to-face

interaction but the teachers who participated in the program indicated the topics offered were timely and interesting, the interaction among the wide variety of participants was beneficial, colleague contributions could quickly be put into practice, and the VC allowed them to take the course at a time of their choosing.

A common hurdle presenting difficulty to supervisors of all types is a lack of time. To keep up with the ever-increasing demands placed upon them, supervisors have engaged a variety of technologies such as word processors, databases, laptops, hand-held computers, VHS tape, digital video, virtual classroom software, and IP-based video conferencing to help them to complete tasks more efficiently, allow them to be more flexible through time-shifting, and enable them to provide more relevant and useful professional development opportunities to their staff. As the focus shifts from the use of technology to supplement conventional supervision models to the use of technology to supervise from a distance, one will notice similarities in rational and practice.

2.4.2   Distance Supervision Models

2.4.2.1 Distance Supervision in Higher Education Environments

Much like the work of Heath and Yost (2001) and Kovaric and Bott (2000), Walker (1998) examined VCs in a higher education environment to support the process of supervising and advising graduate research students from a distance. They used First Class, a text-based conferencing software with the intent of creating a virtual community that engaged students, faculty, and the broader research community in open dialog about important issues. Among the topics discussed, Walker (1998) speaks of the differences of the process and product of research. He tells us that while the product of research is textual, the process of research is both verbal and

textual. He postulates that the First Class virtual community environment, as a text base communication and collaboration vehicle, should enhance the graduate student's ability to create the final product. Walker (1998) noticed that in a similar fashion to a brick-and-mortar classroom, two types of responders exist: those that are spontaneous and immediate and those that are more cautious and considered, and, at times, the dialogue moved their thought processes and new learning and understanding occurred. Unlike the face-to-face environment, conversations were recorded and semi-public; hence, they were more open to scrutiny and challenge; and, it facilitated the oral/written culture of research. Walker (1998) discovered that, through the virtual community, the students were working in a medium in which they would ultimately be assessed and it was having a positive impact on outcomes. Graf and Stebnicki (2002) also studied the use of a text based system for supervising students from a distance. Their study investigated the use of email as a primary mode of communication to supervise rehabilitation practicum students enrolled in a master's degree program. Some of the trainees reported that communicating via email forced them think on a higher more complex level and allowed them the opportunity to be more reflective and insightful. According to Graff and Stebnicki (2002), students were able to adequately reflect through email communications upon many significant issues. They commented:

> Unlike journaling or even electronic journaling, this use of the medium allows for a two-way system of communication as well as individualized, reflective thought- processing. It offers a way to know students' thought processing and development at a level not before practically feasible. Additionally, it offers continual student monitoring and support. (p. 9)

Graff and Stebnicki (2002) concluded that email supervision could enhance counselor training because it provides written accounts of student development that can be used by the

supervisor to plan future training. However, other researchers who investigated the use of email as a distance supervisory approach have noted some challenges. Most notably, researchers indicate text-based distance supervisory approaches require more standardized procedures and structure, increased time for planning, frequent and ongoing technical training, and better communication between the practica and internship site supervisors (Janoff & Schoenholtz-Read, 1999; Kauppi, 1999; Kiesler & Sproull, 1992; Smart, 1999). Mindful of the complex nature of supervision, Graff and Stebnicki (2002) suggested that while email supervision alone could not replace face-to-face supervision (because of the lack of visual and auditory cues), advances in video conferencing put quality distance supervision well within reach.

Early on, social networking sites, collaborative communities and other text-based Internet and email systems offered low cost solutions for supervisors who were separated by distance from their supervisee. Technological advances and reduced costs associated with digital video and IP-based video conferencing have allowed educators to begin to contemplate how the use of these virtual face-to-face environments could enhance supervisory practice. One example of virtual supervision via video conferencing was studied at the College of Education at Indiana University of Pennsylvania (IUP). The College of Education at IUP was awarded a three-year grant to conduct research and evaluate video conferencing as a tool for supervising student teachers whose placements were in remote locations. The goals were to determine if quality supervision can be achieved and to maintain high levels of student teacher achievement. Interactive video equipment was used to connect one school district over 100 miles away to the university campus and was used to facilitate the supervision of 24 student teachers (Dudt & Garrett, 1997; Garrett & Dudt, 1998). They reported preliminary findings suggesting video conferencing for student teaching supervision is effective, supervision via video conferencing works across grade levels and subject areas, little preparation was necessary to start using video

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conferencing in student teacher supervision, and current technology is sufficient to provide effective supervision of student teachers in distant locations (Dudt & Garrett, 1997; Garrett & Dudt, 1998).

Other studies are closely related to the one conducted at IUP. For instance, Armstrong Atlantic State University in Georgia experienced similar positive results when they used interactive distance education technologies at a professional development school to expand the time observing student teaching (Cosgrove, 1997). Another example of research related to supporting student teachers was performed by Hodder and Carter (1997). In their study, university supervisors observed student teachers remotely. They reported that technologies, when appropriately applied to support practicum objectives, enhanced the experiences of everyone involved. Likewise, the use of audio/video conferencing as a vehicle for enabling the interaction between student teachers and their field supervisor was explored by Venn, Moore, and Gunter (2000) of Valdosta State University (Georgia). They also used video conferencing to enhance their teacher education program. They found the technology provided a low-cost alternative to travel; enabled student teachers to interact more frequently with their supervisor; allowed supervisors to observe student teachers more frequently further enabling the data collection process which lead to more appropriate evaluations; facilitated a greater number of simultaneous interactions between supervisor, student teacher, and mentor, or among student teachers; and more easily enabled outside experts to observe and offer technical assistance. An additional study conducted by Gruenhagen, McCraken and True (1999) sought to find a way to minimize the obstacles associated with long commutes to remote sites to supervise student teachers in a special education program. Gruenhagen, McCraken, and True (1999) report that the two-way, live, audio, and visual communication technology enables such placements and benefits everyone involved. Student teachers reported the biggest benefits are the exposure to

the distance learning technologies and the fact that they get experience teaching in their hometown where they may wish to continue their carrier. The partner schools felt the most positive gains came from the additional collaboration with the university and the exposure to the most current educational technology and research-based teaching methods. The student-teacher supervisors realized a substantial reduction in time spent traveling and were therefore able to spend more time with the student teacher. And, the university benefited from the increased visibility in the rural areas of the state (Gruenhagen et al., 1999).

As new technology becomes available, educators pioneer these advances in their field of study. The following research examines the use of IP-based Web cams, also known as personal video conferencing. This type of technology significantly reduces the costs associated with traditional IP-base videoconference systems.

In an article titled "Virtual Supervision – is it really here?" Carberry, Mitchell, Spurgeon, Akehurst, and Trott (2002) reported their findings on the influence of Web cams, virtual class group discussion systems, and email as a possible solution for supervising postgraduate dissertation students. Overall, the researchers found that even though the students' preferred method of supervision was face-to-face, the students did not feel it was difficult to learn the new technology and were prepared to take the virtual dissertation supervision classes. Carberry et al. (2002) also reported that the students preferred the Web cams to email only and hoped that the use of the personal videoconference system would give them better support and motivation. Similarly, Coursol (2004) in "Cybersupervision: Conducting Supervision on the Information Superhighway" discusses the positive effects of Internet or IP-Base Personal Videoconferencing on supervision of student counselors. She also reports that IP-based personal videoconferencing is useful when supervising students at remote sites or when student counselors are in broadly dispersed geographical areas. She states that IP-based personal

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videoconferencing has a variety of applications including individual supervision, group supervision, and case study. Additionally, Coursol (2004) found that personal video conferencing is good for observing both verbal and non-verbal clues thus affording the supervisor a clearer understanding of the counseling skills and capabilities of the students. Another study by Lehman et al. (2003) investigated the use of electronic supervisory mediums with pre-service teachers at Purdue University. As part of their Preparing Tomorrows Teachers to use Technology (PT3) initiative, the researchers sought to use electronic portfolios to monitor student progress. The team also explored videoconferencing as a means to provide their students with a more diverse pre-student teaching experience. Lehman et al. (2003) found strong evidence that the electronic portfolio system and the videoconference portion of the initiative improved teachers' classroom observation skills and that the shared observational experiences led to better class discussions. The researchers also concluded that because the pre-service teachers were exposed to a variety of classrooms via the videoconference system, the pre-service teachers had a better understanding of school related diversity issues.

2.4.2.2 Distance Supervision in Professional Development Programs

The Miami-Dade County Public Schools (M-DCPS), Miami, Florida implemented a Web-based professional development and evaluation tool to support their Professional Assessment and Comprehensive Evaluation System (PACES) (C. D. Ellett, Annunziata, & Schiavone, 2002). Administrators and teachers used the Website to assist with communication of project goals, administration of project requirements and dissemination of professional development materials. The Website is reported as being the first of its kind and as a success. The Miami-Dade County Public School officials base the success of the program on the quality design of the professional development plan not on the fact that is it found on the Web. The

school administrators view the technology as a support to enhance the program making it that much more effective.

Another example of a successful professional development program enhanced by technology is described by David Lepard (2002). Lepard, recognizing the decline in the population ready to serve as school leaders, saw the need for an efficient and effective process to assess and train new administrative candidates and created the Professional Enhancement Program (PEP). PEP is grounded in the research of the NASSP Principal Assessment Center, the NPDEA Domains, and Dimensions, and in the Interstate School Leader Licensure Consortium's (ISLLC) Standards. Throughout the program, facilitators used digital camcorders to record leadership simulation activities and used the playback features to enhance the analysis efforts. The authors reported that the playback features of the technology increased accuracy and performance analysis. The data from the simulated activities were recorded in a software program that was used to analyze the information collected during the observations. The software proved to be beneficial as it allowed the reports to be printed and used to help in establishing goals and objectives for personal growth plans. Lepard (2002) postulates that this program would be good for improving the performance of teachers and attributes the program's success to the manner in which "it bridges theory and practice with peers and technology" (p. 22). It is important to note that the success of the program was based on a sound plan founded on solid research. The technology served as a tool to make a good program great.

In a similar study, Joseph Claudet (2002) reports on the seven-year history of the Administrator Case Simulation (ACS) program that studied school leadership and the use of multimedia technology to enhance the professional development practices of school administrators. They conclude that the technology-integrated case design and case simulation technology have potential for "creatively invigorating the career-long, reflective thinking,

leading and organizational learning of school leaders" (p. 1). He contends that the CD, DVD, and World Wide Web have created a new set of enabling tools. The simulation programs created by the ACS team were produced using interactive, multimedia computer technology to involve school principals and other school leaders in the study of their own reflective thinking processes and the leadership decisions they make. Claudet states that because of the availability, accessibility, authenticity, and functional integration of technology-integrated case simulation, ACS enhances performance assessment and career-long professional learning.

To this point, a number of technologies used to enhance the supervisory programs and professional development opportunities for student teachers and counselors, in-service teachers, school administrators, and graduate level students have been explored. The focus will now shift to investigating the supervision and evaluation of k-12 online teachers.

2.4.2.3 Distance Supervision in K-12 Environment

Addressing k-12 online learning competence and quality performance issues, *Education Week* published an article highlighting the evaluation practices of cyber school supervisors. The article is a summary of a series of interviews with organizational leaders, administrators, and teachers in the business of cyber schooling. *Education Week* reports some online schools have addressed the area of supervision and have implemented a plan, while others are still working on their evaluation processes (Evaluating online teachers is largely a virtual task, 2005). They also indicate evaluation models adopted by virtual schools seem to be more comprehensive than the ones most traditional schools use because the virtual schools are being watched closely by all stakeholders and therefore must be meticulous in their accountability practices (Evaluating online teachers is largely a virtual task, 2005).

Although few studies have specifically investigated e-supervision models in the K-12 arena, preliminary data suggest: technology could be used to facilitate personnel evaluation in that it can be used to unobtrusively observe instruction (Amodeo & Taylor, 2004; Burke, 1993); e-learning environments, by their very nature, offer "megabytes of vital information about the teacher" (Evaluating online teachers is largely a virtual task, 2005, p. 1) that is simply not available to the traditional supervisor conducting the occasional walk-through (Amodeo & Taylor, 2004; Berg & Smith, 1996; Burke, 1993; Nolan & Hoover, 2005); technology can help alleviate time pressures in that "it provides a viable alternative to canceling a scheduled observation when something unexpected comes up that necessitates a principal's immediate attention (Amodeo & Taylor); technology enables the observation to be archived and then retrieved for subsequent review; and computer software, if used properly, can be used to free supervisors to spend time on professional development efforts (Glanz & Neville, 1997).

In addition to the evaluative component, supervisors in e-learning environments must address the support function of supervision and develop strategies to enhance the professional growth of teachers over the wire. Earlier it was noted that computer technology provides students and teachers tools for addressing five broad outcomes individualizing learning, encouraging group interaction, managing and coordinating learning, fostering student expression, and assisting students in knowledge production (1991). One could argue that technology can work for e-supervisors in the same manner, thus saving them valuable time and allowing them to provide a more through, efficient, and meaningful educational experience for their teachers. This argument is substantiated in the literature. For instance, technologies such as videotaping (W. S. Thompson, 1992), emailing (Hodder & Carter, 1997; Nabors, 1999; Souviney & Saferstein, 1997; W. S. Thompson, & Hawk, P. O., 1996; Wittenburg & McBride, 1998; Zimmerman & Greene, 1998), and program-specific professional development Websites (Wittenburg &

McBride, 1998) have been found to have a positive effect when supporting student teachers from a distance. In addition, Capraro (2003), when studying the use of electronic portfolios with pre-services teachers, determined that the digital videos of the candidates teaching experience were considered to be valuable to administrators in determining teacher candidate effectiveness an thus may be an effective strategy to support the professional development of cyber teachers.

Schools are implementing varied approaches to online teaching and are using regular K-12 instructors, virtual school instructors, or contracting out online teaching to other course providers (Clark, 2001) and only a few authors have begun to specifically investigate how these teachers are supervised. "The basic purpose of supervision and evaluation is to enhance educational experience and learning of all students" (Nolan & Hoover, 2005, p. 4) and in alignment with this notion, one early study recommends online schools provide extensive training and mentoring systems with online monitoring and feedback capabilities to ensure the success of their virtual learners (Clark, 2001). Furthermore, Clark (2001) recommends that the schools develop essential data elements to monitor progress and effectiveness of the virtual school and to create an internal performance rating structure. Another early study was commissioned by the PDE and conducted by KPMG Consulting. The purpose for the study was to review of the state's cyber charter schools. The report, "Cyber Charter Schools Review" focused on eight accountability methods and systems for each of the seven schools in the analysis. One of the measures of accountability was *Personnel Evaluation.* The Personnel Evaluation section was divided into the subcategories of (a) Teacher Experience/Certification, (b) Method of Performance Evaluation, (c) Frequency of Performance Evaluation, (d) Documentation of Positive Trends in Personnel Attendance and Retention, (e) Personnel Attendance Method, and (g) Professional Development Program and Alignment to instructional approach (Cyber charter schools review, 2001).

Three recurring themes emerged upon analysis of the reported information from the two early reports of Clark and KPMG Consulting. The first was the tendency for the majority of the schools to follow only the state mandated-minimum requirements. Also noted was the fact that in some cases, no state mandated minimum requirements exist for supervision of cyber teachers. According to Robert McGrath of the PDE, the Pennsylvania charter school law only says that, in the charter application, the applicant must provide information about the faculty and a professional development plan for the faculty. The section of the School Code that discusses teacher ratings (1123) is not applicable to Charter Schools, including Cyber Charters (R. McGrath, personal communication, January 26, 2004). The second identifiable theme found in the works of Clark and KPMG was the inclination of the schools to use a previously defined teacher evaluation form. The three schools that mentioned the use of an evaluation instrument chose to implement one designed for evaluating residential teachers and made no reference to any modifications or how they planned to conduct the evaluations of the cyber teachers. The third trend recognized across the two reports was the lack of attention paid to the support function of supervision. Less than 30% of the schools mentioned in the reports described how they intended to address the support function of supervision and that the majority of the plans reported a top-down hierarchy placing little emphasis on self-reflection and teacher growth.

Most recently, the SREB published two documents that address the issue of supervising cyber teachers. The first one was titled "Standards for Quality Online Teaching" and was created to examine the qualifications necessary to be an effective online teacher. Relying on experts in the field from cyber schools and professional organizations, they developed a set of 11 standards grounded in practice and substantiated through the literature (Standards for quality online teaching, 2006). The standards address the three broad outcomes of (a) academic preparation, (b) content knowledge, skills and temperament for instructional technology, and (c)

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online teaching and learning methodology, management, knowledge, skills and delivery (Standards for quality online teaching, 2006). Each major section is then sub-divided into the specific corresponding standards. A checklist of performance indicators then further refines the standards. To summarize the standards, SREB concludes that quality online teachers use a variety of technologies and methods to get to know each student, facilitate student discussions, monitor and evaluate students' academic progress, and respond effectively to students' needs. SREB also indicates the best online teachers use current and available technology to communicate effectively and efficiently, respond to students' questions and provide timely feedback, and create instructional environments that promote active participation and frequent interaction.

The second SREB document titled, "Online Teaching Evaluation for State Virtual Schools" draws from the standards set forth in "Standards for Quality Online Teaching". It describes a rationale for evaluating cyber teachers and includes a checklist designed to help supervisors gauge the quality of online teaching. From their research, they found that the success of the student largely depends on the quality of the teacher and the teaching methods used. Their evaluation form is broken into two parts: a checklist of the 11 standards and corresponding performance indicators and a narrative section where "the evaluator highlights successes and targets any steps the online teacher needs to take to improve" (Online teaching evaluation for state virtual schools, 2006, p. 1)

2.5   CONCLUSION

The popularity of online instruction in the K-12 schools is on the rise and many studies have examined the characteristics, extent, learning outcomes, guiding principles and other issues associated with online instruction (Picciano & Seaman, 2007). Much of this research has revealed unique characteristics of teaching in an online environment and administrators may have questions about the process of supervising online teachers. To ensure a high quality learning experience for students, supervisors of online teachers should be cognizant of these characteristics and incorporate them into their supervisory practice (Cavanaugh et al., 2004; Managing teachers you can't see. Instructional oversight in a virtual school, 2006; Watson, 2005). Through the review of the literature, it is evident that "the most important factor affecting student learning is the teacher" (Southern Regional Education Board, 2006c, p. 1) and to date, there is very little research to guide and support the policy and practice of supervising cyber teachers (Tobin, 2004). The experts agree that proper supervision and evaluation of e-learning teachers is critical: deserving the immediate attention of researchers to guide policy and practice of online teacher evaluation systems. This study extends the body of knowledge in the field of K-12 teacher supervision through an investigation of U.S. based cyber school supervisory practices, procedures, policies, needs and issues: extending the work of others into the virtual arena. The next section of this document details the methodology used to conduct this investigation.

3.0   METHODOLOGY

In this chapter the research design and methodology is explained in detail. The chapter includes a complete description of the study population, outreach efforts, data collection and analysis methods, descriptions of the instruments, and study procedures. The chapter concludes with information about how the researcher adhered to established ethical protocols and practices.

3.1   STATEMENT OF PROBLEM

It has become evident that while online learning is growing in popularity, there has not been an associated increase in research about how administrators can best support and evaluate the performance of online teachers (Cavanaugh et al., 2004; Tobin, 2004; Watson, 2005). As stated in chapter 1, the purpose of this study is to examine current supervisory practices of U.S. based cyber schools to develop a more extensive understanding of current successful strategies and practices to help supervisors assess (fulfill the competence and reporting objective) and assist (help teachers improve their teaching abilities) the teachers in their institution. The researcher used the current literature to describe best practices for supervision in the traditional school environment and suggested best practices for supervising online teachers. Survey data were used to describe current supervisory practices of K-12 cyber schools and identify needs and issues facing cyber schools. Guided discussion data were used to report on interesting and innovative

sites that appear to be engaged in exemplary practice. From these data, a summary and reflection was written to establish a baseline of the nature of supervision in a cyber environment that can be used to direct future research.

3.2   RESEARCH QUESTIONS

1. What are the recommended practices of supervision in U.S. based traditional and cyber schools?

2. What is the nature of current supervisory practices in U.S. based cyber schools?

3. What is the difference between supervision in a traditional environment and supervision in a cyber environment in U.S. schools?

4. What needs and issues regarding supervision of teachers are identified by U.S. based cyber schools?

5. What are the implications for future supervisory policy and practice in U.S. based cyber schools?

3.3   RESEARCH DESIGN

Based on the study's five research questions, the researcher investigated the nature of supervising U.S. based cyber school online teachers using a three-phase process. In phase 1, the researcher used the information from the Review of Literature to define quality supervision in traditional and online environments (Research question 1). To do so, he systematically recorded

the major components of what the literature suggested to be supervisory best practices in the traditional classroom and for the virtual classroom. From there, he used inductive and deductive reasoning to synthesize the data and created a description of supervisory practices.

In phase 2, the data collected from the survey were used to describe current supervisory practices, procedures, policies, needs, and issues of U.S. based cyber schools (Research question 2). Survey data were descriptively reported via frequencies and measures of distribution. Non-numerical data collected from the open ended survey questions were analyzed and reported using qualitative data analysis strategies such as highlighting common words, phrases, themes, patterns and message content. The survey data were then used to examine the correlation between the literature-review based definition of quality supervision and current practices of cyber schools (Research question 3) and to identify perceived hurdles and challenges impeding supervision (Research question 4).

In the third and final phase of the study, the researcher identified five schools that appeared to be engaged in interesting and innovative supervision practices and contacted them for follow-up guided discussions and document review. Finally, the researcher synthesized the data and reflected on implications and recommendations for supervision in the cyber environment and future research (Research question 5). See Figure 1 for a graphic representation of the research design.
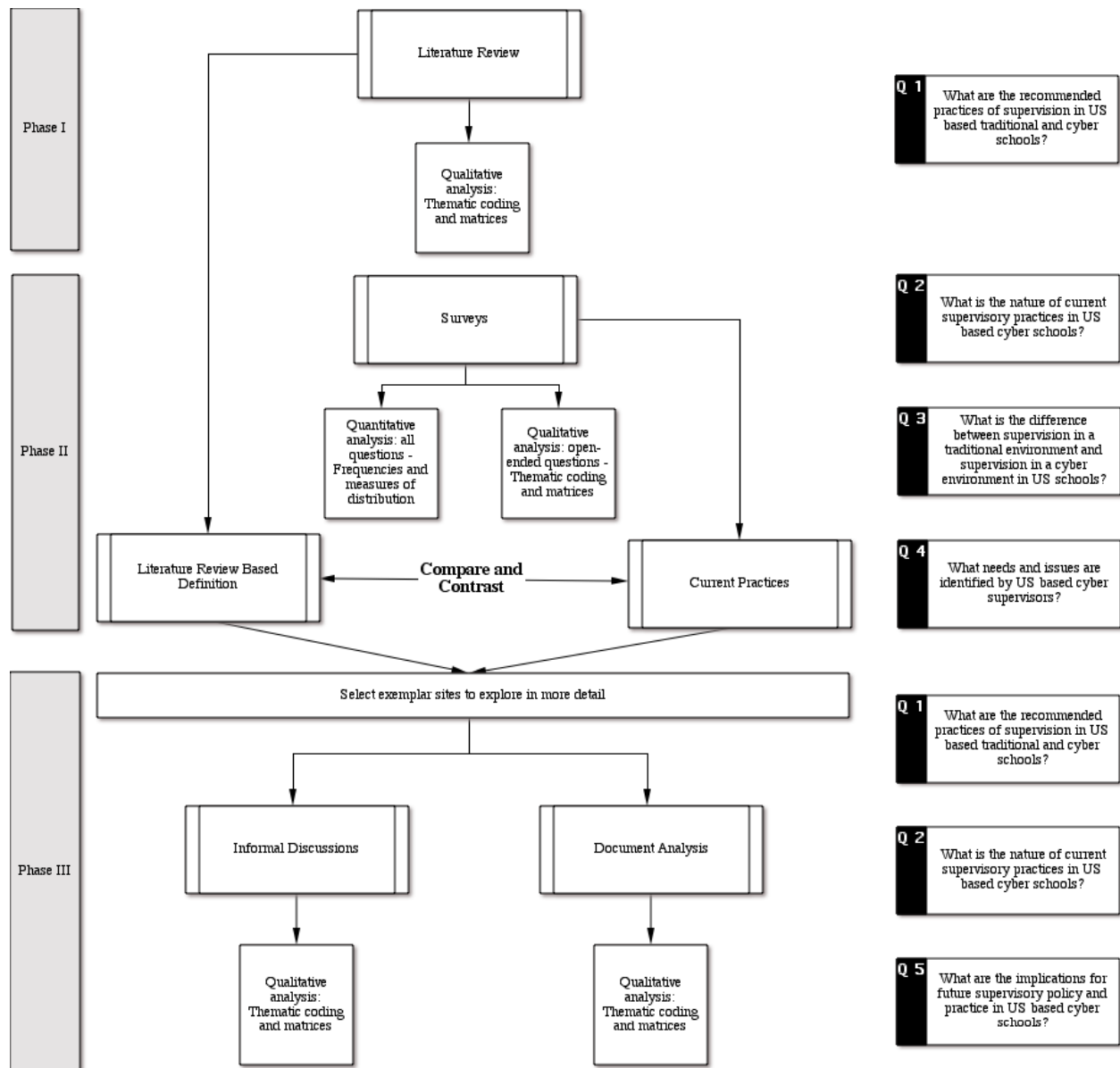
Phase I

Literature Review

↓

Qualitative analysis: Thematic coding and matrices

Q 1 — What are the recommended practices of supervision in US based traditional and cyber schools?

Phase II

Surveys

Quantitative analysis: all questions - Frequencies and measures of distribution

Qualitative analysis: open-ended questions - Thematic coding and matrices

Literature Review Based Definition

Compare and Contrast

Current Practices

Q 2 — What is the nature of current supervisory practices in US based cyber schools?

Q 3 — What is the difference between supervision in a traditional environment and supervision in a cyber environment in US schools?

Q 4 — What needs and issues are identified by US based cyber supervisors?

Select exemplar sites to explore in more detail

Phase III

Informal Discussions

Document Analysis

Qualitative analysis: Thematic coding and matrices

Qualitative analysis: Thematic coding and matrices

Q 1 — What are the recommended practices of supervision in US based traditional and cyber schools?

Q 2 — What is the nature of current supervisory practices in US based cyber schools?

Q 5 — What are the implications for future supervisory policy and practice in US based cyber schools?

Figure 1. **Research Design Model**

3.3.1 Selection of Study Population

The participants for the study were the primary contacts from the self-generated list of online U.S. based cyber schools that offer synchronous and/or asynchronous courses. This list was created after consulting with the North American Council for Online Learning (NACOL), the

International Society for Technology in Education (ISTE), the National Center for Educational Statistics (NCES), the United States Department of Education (USDE), the State Educational Technology Directors Association (SETDA), the Southern Regional Education Board (SREB) and Dr. Cathy Cavanaugh of the University of North Florida. The selection criteria included the following four factors: the type of school, type of courses they offer, delivery method of content, and the availability of school contact data. The first three criteria (type of program, type of course and delivery method) for selecting U.S. based cyber schools were chosen to define the parameters of the population to insure consistency and comparability of the data. Since nationally accepted definitions for types of online learning are just being established, there is often confusion related to the definitions of terms regarding online learning, making it difficult to generate an accurate list of cyber schools. The ensuing text delineates the researcher's logic for the selection of the population.

A few studies have begun the work of defining types of online learning. From this effort, several descriptions have emerged (Watson & Ryan, 2006). Sometimes programs are categorized by how they were created (i.e., state-led (state), charter, private (home school), public (public district-sponsored), university sponsored, or consortium). Other times one will find cyber schools categorized by the various programs offered (i.e., supplemental, full-time, self-paced, teacher-facilitated or blended between cyber and bricks or blended between self-paced and teacher-facilitated) or by delivery method (i.e., synchronous, asynchronous, self-paced, teacher-facilitated, or virtual classroom). Watson and Ryan (2006) describe a method of distinguishing between programs developed by Dr. Susan Lowes of Columbia Teachers College in what she calls Virtual Resources, Virtual Courses, and Virtual Classrooms. Watson and Ryan (2006) describe Virtual Resources as Web-based tools that are used to supplement face-to-face instructional courses. Virtual Courses are described as fully online courses that use the Internet

to deliver primarily asynchronous instruction. Most of the interaction in their definition of a virtual course is self-paced, on-going, one-on-one, teacher-student communication. They describe Virtual Classrooms as a virtual course with the addition of a Web-based virtual classroom. This virtual classroom facilitates mostly synchronous instruction with teacher-student and student-student interaction. In addition to Watson and Ryan (2006), Allen and Seaman (2006) have similar categorizations of online learning. Having conducted annual surveys since 2003 on the status of online learning in U.S. higher education, Allen and Seaman (2006) define the differences according to the percentage of content delivered over the Internet. In their classification system, an *Online Course* is one where most or all (at least 80%) of the content is delivered online be it via a synchronous virtual classroom environment or an asynchronous learning management system (LMS), a *Blended/Hybrid* course blends face-to-face and online delivery and is differentiated by using the Internet to deliver a substantial proportion (30 to 79%) of the content, and a *Web-Facilitated* course uses Web-based technology (1 to 29%) to facilitate what is essentially a face-to-face course (i.e., uses a course management system to post course syllabus and assignments). To be consistent with previous work, the researcher adopted the definitions distinguished and defined by Watson and Ryan (2006) and Allen and Seaman (2006) and selected U.S. based cyber schools that enroll fulltime students in fully online courses.

The fourth criterion for selecting the population for the study is directly related to the availability of the data. The significant growth in the number of public, private and for-profit providers of online courses and the fact that there are few states that require data collection for online programs regarding the delivery of online content (Picciano & Seaman, 2007) results in the non-existence of an authoritative list of schools that offer fully online programs. Therefore, the researcher consulted with the North American Council for Online Learning (NACOL), the

International Society for Technology in Education (ISTE), the National Center for Educational Statistics (NCES), the United States Department of Education (USDE), the State Educational Technology Directors Association (SETDA), the Southern Regional Education Board (SREB) and Dr. Cathy Cavanaugh of the University of North Florida to develop a list of U.S. based cyber school for the purposes of this study.

3.3.2 Outreach Efforts

To initialize the data collection process, the researcher sent the initial correspondence (Appendix A) to the primary contact of the 203 schools on the list. The email introduced the study and solicited his/her cooperation. It explained that a University of Pittsburgh doctoral dissertation student was conducting the study; defined the nature and scope of the project; and outlined the risks, benefits, and rights of participants. The invitation to participate email stated that while online learning is growing in popularity, there has not been an associated increase in research about how administrators can best support and evaluate the performance of online teachers. The letter also stated that this an area warranting special consideration requiring scientific evidence to guide the growing numbers of online school developers and educators and that their assistance would be greatly appreciated. The letter requested that he/she (or his/her designee) complete the online survey by clicking on the link to the survey presented in the body of the email and provided directions for completing a paper based version of the survey. In an effort to increase participation, the initial correspondence pointed out additional benefits of participating in the study such as their participation in the study entitles them to a full report of all findings from the study which could in turn help them justify current practices and improve their present model based on scientific research. Lastly, the cover letter specified the timeline for the study,

participation in this survey was voluntary, all information was to be kept confidential, and submission of the online form was their consent to participate.

3.3.3   Data Collection

The primary vehicle for data collection for this study was an online survey instrument. The survey collected demographic information about the school; information regarding the school's supervision policy and practice; information about the type and usefulness of supervision tools, strategies, and data sources; and the school's general perceptions of supervision. Close-ended response items were downloaded into Microsoft Excel software. The data were prepared for analysis by reviewing for missing or out of range values. All missing data were coded as either not applicable (NA – the question did not apply to the respondent) or as non-responsive (NR – the question did apply, but the respondent did not provide any data). Open-ended survey responses were also collected in Microsoft Excel. Responses were coded and analyzed according to the key elements (see Table 2).

After reviewing the survey data, the researcher selected five Pennsylvania schools that appeared to be engaged in interesting or innovative practices (See 4.4.1 Selection of Interesting and Innovative Schools). A follow up guided discussion conference call was then conducted to clarify questions generated during the initial phase of data collection and to gain a better understanding of the schools more interesting in innovative approaches to supervising their cyber teachers. The guided discussion questions were designed to collect ancillary in-depth data to better understand their supervision processes. Questions were asked to clarify disconnects between responses on the survey and information gleaned from the document review, the methods/rationale used in the development of their policy and practice, why they collect the data

they do, why they use the technologies they do and where they plan to go next. With permission, the researcher digitally recorded each session using a telephone-recording device. In addition, he took notes to capture observations with regard to what was said and how respondents said it and anything else that occurred during the guided discussion. Immediately after the guided discussion, the author reviewed the notes to make additions and clarifications so they made sense when later reviewed. The researcher also created typewritten transcripts of each conversation from the digital recording.

Before the guided discussion, the researcher requested a copy of the school's supervision policy and the checklist/instruments/tools used for supervision and evaluation. Data were gleaned from these documents using the Supervision Model Comparison Chart (SMCC). The SMCC was designed to provide a structured mechanism to compare the relationships between what the literature suggests constitutes quality cyber supervision and what the data from the survey, document analysis, and discussion questions revealed about current supervisory practices found in the schools being studied. The SMCC (Appendix F) was created in Microsoft Excel and engineered to visually organize the complex data to aid the collection/analysis process.

3.3.4   Data Coding

For the purpose of collecting, organizing, analyzing, and reporting, the data were structured into the four main categories of demographic information, current supervision practices, type and usefulness of supervision data sources, and general perceptions of supervision. Each category was further refined into classes. The classes were derived from a prototypical description of supervision developed by the researcher through emerging themes from the literature review. Understanding the importance of using consistent terminology to build a framework for the

study, the researcher fashioned a working description for supervision by recording the key elements of supervision and evaluation as described by major contributors in the field into an electronic concept mapping software package. Using the electronic tools such as word find, sorts, and filters built into the concept mapping software, the researcher organized and analyzed the collected data to find commonalities. From this analysis, the researcher developed a list of characteristics describing quality supervision. This list includes:

- a collaborative, differentiated, on-going, effective and efficient process

- that takes into account the ability and developmental level of teachers

- and improves the instructional practice of teachers and the educational experience of their students

- by using multiple sources of data

- regarding teacher performance, planning and preparation, environment, instructional strategies, and professional responsibilities

- collected over time

- to create an individualized instructional improvement program

- that measures teacher performance against clearly articulated standards

- and melds together competence and quality performance with professional growth of teachers

- to assist them in becoming more resourceful, informed and skillful.

To facilitate the organization, collection, and analysis of the data, the researcher identified and coded 12 uniquely measurable elements from the proposed description. The 12 elements include collaboration, differentiation, ongoing, effective and efficient process, account for ability and developmental level, improves instructional practice, improve educational

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experience of students, multiple sources of data, data collected over time, individualized

instructional improvement program, measures teacher performance against clearly articulated

standards, and melds competence and quality performance. These key elements are presented in

Table 2. Every survey question was then engineered to collect data with regard to at least one of

these 12 elements.

Table 2. Key Elements of Supervision Codes

Key Element	Code
Collaboration	SC
Differentiation	SDIF
On-going	SO
Effective and efficient process	SEEP
Account for ability and developmental level of teacher	SADL
Improves instructional practice	SIIP
Improve educational experience of students	SIEE
Collect multiple sources of data	SMSD
Data collected over time	SDCOT
Individualized instructional improvement program	SIIIP
Performance measured against clearly articulated standards	SCAS
Melds competence and quality performance with professional growth	SCQPPG

Codes for demographic elements (Table 3) such as, name of school, grade levels, years of operation, grade levels served, number of supervisors, number of students, and number of teachers were also assigned to help define the characteristics of the responders and their school.

Table 3. Demographic Data Element Codes

Data Element	Code
Name of school	NOS
Grade levels	GL
Years of operation	YOP
Number of supervisors	NOS
Number of students	NOSt
Number of teachers	NOT

3.3.5 Instruments

The researcher used a five part 23-question online survey for initial data collection (Appendix B). The survey was fashioned in part after a survey first developed by Rizzo (2004) and then later modified by Hickey (2006). Rizzo studied teacher and supervisor perceptions of current and ideal supervisory practices in Massachusetts public, private, and religious schools. Hickey extended the work of Rizzo to include supervisors in Massachusetts's charter schools. For this study, the researcher gleaned questions from both surveys, adding additional questions to account for the specifics of e-supervision. A draft version of the newly designed survey was administered to 27 students enrolled in a University of Pittsburgh principal's certification program for the purpose of testing for face validity. This group was selected because many of

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the students in this class currently work as supervisors in a cyber-charter school environment. Simultaneously, the survey was submitted to the researcher's dissertation advisor. The researcher then made further modifications to the survey items using the feedback from the principal's certification class and his advisor. The survey was then created in an online format and piloted with supervisors from seven local districts who run cyber programs. The survey was edited one final time and was then submitted to the Institutional Review Board to be approved. Based on the data gleaned from piloting the survey, it was estimated that it would take 20 minutes to complete the 23-question instrument.

The online survey instrument contains five sections: Study qualification, Demographic information, Current policies and practices, Supervision data sources, and General perceptions. The first section consisted of a study-qualification filter question. As mentioned in chapter 2, Watson and Ryan (2006) describe Virtual Courses as fully online courses that use the Internet to deliver primarily asynchronous instruction where most of the interaction is self-paced, on-going one-on-one teacher-student interaction. They describe Virtual Classrooms as virtual courses with the additional feature of a Web-based virtual classroom that facilitates mostly synchronous instruction. The virtual classroom allows for teacher-student and student-student interaction. Allen and Seaman (2006) define the differences of online education programs according to the percentage of content delivered over the Internet. In their classification system:

- *Online Course* are courses where most or all (at least 80%) of the content is delivered online be it via a synchronous virtual classroom environment or an asynchronous learning management system (LMS)

- *Blended/Hybrid* course blends face-to-face and online delivery and is differentiated by using the Internet to deliver a substantial proportion (30 to 79%) of the content

- *Web-Facilitated* course uses Web-based technology (1 to 29%) to facilitate what is essentially a face-to-face course (i.e., uses a course management system to post course syllabus and assignments).

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To be consistent with the previous work of others, the researcher adopted the definitions developed by Watson and Ryan (2006) and Allen and Seaman (2006) and surveyed U.S. based cyber schools that enroll students in full time programs that provide online synchronous and/or asynchronous courses. The first section of the survey allowed the respondent to identify their school according to this definition. The participants entered their assigned ID number and answered one Yes/No question based on how their school fits into the definition above. If they answered "no", the survey was terminated, participants were offered a brief explanation regarding the focus of the study, and then they were thanked for their time and consideration. If they answered, "yes" to the question, they were asked to continue on to section 2 of the survey. Section 2 consists of five demographic questions. The data collected in section 2 included the number of years the school has been in operation, the grade levels served by the school, student enrollment, the number of teachers employed by the school, and the number of supervisors employed by the school. The third section of the survey is composed of three open ended items, four closed response items and six five point Likert items designed to collect information about the schools current teacher supervision practice. Section 4 is made up of one multi-line matrix question designed to collect information on the various data sources used in the supervisory process. For each source, the supervisor was to indicate whether they are currently using the data source and that if used, they were to rate the data source according to a usefulness scale. The final section contains two interrogatory statements that sought additional input regarding the schools "next steps" in maintaining/refining their supervision process as well as the supervisor's general perceptions regarding an ideal supervision system.

A second instrument (Appendix E), a document analysis tool, was used to provide the researcher a method for the systematic examination of the documents submitted by the phase 3 schools. The researcher developed this list of common characteristic of supervision policies and

teacher evaluation forms after reviewing the components of these documents as prescribed by the Pennsylvania Department of Education guidelines, the Southern Regional Education Board guidelines, and the Florida Virtual Schools guidelines.

The document analysis phase of the study included the use of a third instrument: a keyword matrix (Appendix D). The instrument was developed by modifying a keyword matrix used by Hickey (2006) in his study of supervision practices in Massachusetts's charter schools. The researcher modified Hickey's original keyword matrix to include terms gleaned from the literature review related to e-supervision. The researcher used the keyword matrix instrument to assist in the examination and analysis of the supervision policy documents and the teacher evaluation forms submitted by the schools that were selected to participate in the third phase of the study. In addition, the keyword matrix was used to organize and analyze the open-ended survey questions and guided discussion notes. The researcher anticipated additional themes and commonalities would emerge. Therefore, the document was designed to allow for the addition of these traits as they became apparent.

A fourth instrument, the Supervision Model Comparison Chart (SMCC), was designed to provide a structured mechanism to compare the relationships between what the literature suggests constitutes quality cyber supervision and what the collected survey, document analysis, and discussion question data revealed about current supervisory practices found in today's cyber schools. The SMCC (Appendix F) was created in Microsoft Excel and engineered to visually organize the complex data to aid the comparison process. The table consists of three sections, each broken into three columns: Model, Source of Evidence, and Details. The first section was designed to compare concepts from the Review of Literature to the data gleaned from survey, document analysis, and discussions about current supervisory practices found in today's U.S. based cyber schools. The first column of section one contains 12 rows that were populated with

the previously described uniquely measurable elements from the proposed definition of supervision (see Table 2). The researcher populated the second column with specific citations of sources of evidence from the surveys, document analyses, and guided discussions that indicated the presence of the element. In the third column, the researcher provided specific details illustrating the context, concepts, or themes. Direct quotes form sources were also included as necessary.

The remaining two sections of the SMCC mirror the first but were used to compare current supervisory practices of U.S. based cyber schools to the specific guidelines established by the Florida Virtual School Supervision Model (Managing teachers you can't see. Instructional oversight in a virtual school, 2006) and the Southern Regional Education Board Supervision Model (Online teaching evaluation for state virtual schools, 2006). The resulting matrix allowed the researcher to conduct a more thorough investigation of the similarities and differences between the various models, helped identify additional trends and prompted additional questions for further research.

3.3.6 Data analysis

The researcher employed methodological triangulation[6] by collecting quantitative survey data from all participating cyber schools and by collecting qualitative data from a few select schools that, through the survey, exhibited interesting and innovative practices. The qualitative data were collected via document analysis and discussion sessions. Survey data were organized into four main categories of demographic information, current practices, supervision data sources,

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[6] Methodological triangulation is a technique whereby researchers use multiple methods, theories, or data in a study to investigate a fact or situation.

and general perceptions. The researcher used Microsoft Excel to analyze responses from the close-ended survey items. Data from section two, demographic information (questions 2-7), section three, supervision policy and practice (questions 8, and 10-48) and section four, supervision data sources (questions 43-56) were descriptively analyzed by frequencies and measures of distribution. Open ended questions from Section three (question 9, and 49-50) and Section six (questions 65-66) along with the document analysis and discussion question data collected from the selected sites were analyzed using qualitative data analysis strategies. Using the concepts established from the literature review (see Table 2) the researcher used the Keyword Matrix, the Document Analysis, and the Supervision Model Comparison Chart (Appendices D, E and F respectively) to begin organizing the qualitative data. As the data were being organized within the aforementioned instruments, the researcher generated clusters of categories, themes, and patterns. He continued seeking to solidify or rebut these themes by testing them against initial and emergent assumptions and searching for supportive information and alternative explanations of the data (Marshall & Rossman, 1995). This iterative process of sifting and comparing continued until major modifications of the themes occurred less often, categories were defined more clearly, and the relationships between and among the categories were made more apparent (Marshall & Rossman, 1995).

3.3.7 Controlling for Reliability, Validity, and Bias

Reliability is the degree of consistency which instances are assigned to the same category either by different people or by the same person on different occasions (Hammersley, 1992). To manage the reliability of a study one must take measures to control the credibility, neutrality, consistency, dependability and transferability associated with data collection and reporting

(Lincoln & Guba, 1985). The researcher attempted to control for reliability by creating a survey instrument with clear and explicit directions and questions. In addition, he took careful notes during the discussion sessions and document analysis stages of the study, was careful to fully explain the process for coding and identifying themes, and specified in detail the characteristics of each category.

Validity is described as the extent to which an account accurately represents the social phenomena to which it refers. One method used to help validity issues in a study is the use triangulation. Gay and Airasian (2000) explain triangulation is "a form of cross validation that seeks regularities in the data comparing different participants, setting, and methods to identify recurring results [in order to]…obtain similar information from different independent sources" (p.252). Methodological triangulation uses multiple qualitative and/or quantitative methods to investigate a problem and if the findings from each method are similar, validity is established. When drawing conclusions the researcher cross-validated data from the surveys, documents analyses, and discussion sessions. In addition, the researcher attempted to establish validity by controlling coverage and sampling errors. All schools on the self-generated list of U.S. based cyber schools were invited to participate as the "population is so small, that sampling part of it [would] not provide accurate estimates of the whole" (Salant & Dillman, 1994, p. 6). Furthermore, the researcher has, to the best of his ability, been careful to control his opinions and reactions during discussion sessions so as not to skew the views of the participants and he took precautions to accurately record the data in the form of detailed notes and electronic recordings.

Bias is defined as prejudice in favor or against one thing, person, or group when compared to another. The researcher did his best to render a fair view of the topic being investigated. The researcher is aware of the inherent risks associated with partiality and favoritism and made every attempt to remove bias from survey and guided discussion questions.

In addition, the researcher followed best practice suggestions on the use of an electronic recording device to capture and transcribe guided discussion notes, sought input from his committee in search of differing opinions and to question the researcher's analysis critically, and recorded written notes from interviewees in their own terms, without assigning priority, importance, interest, or relevance.

3.4 PROCEDURES CARRIED OUT IN THE STUDY

1. Develop database of participants.

A list of U.S. based cyber schools was created by consulting with the North American Council for Online Learning (NACOL), the International Society for Technology in Education (ISTE), the National Center for Educational Statistics (NCES), the United States Department of Education (USDE), the State Educational Technology Directors Association (SETDA), the Southern Regional Education Board (SREB) and Dr. Cathy Cavanaugh of the University of North Florida to develop a list of U.S. based cyber programs. The database entries were coded to protect the identity of the participants. A separate file containing names and a matching query allowed for the generation of a follow-up list to make contact with non-responders.

2. Develop a model of good supervision.

The researcher systematically recorded the major components of what the literature suggested to be supervisory best practices in the traditional classroom and the virtual classroom. From there, he used inductive and deductive reasoning to synthesize the data creating a description of supervisory practices based on the current literature.

3. Conduct survey of current practice in supervision of cyber teachers.

The researcher sent a welcome letter email to the primary contact (as reported in sources listed in step one) of the schools inviting them to participate in the online survey. The welcome message included a brief description of the purpose, goals, and timeline of the study; an outline of their rights as a research participant; and directions for completing both the online and paper versions of the survey[7] (Appendix B).

Due to the nature of the study, it is assumed the participants have a high comfort level with the use of the Internet and since electronic surveys tend to yield faster transmission times, higher response rates, more candied responses, and quicker response times that are generally associated with conducting paper based surveys the primary method to deploy the survey was the Beaver Valley Intermediate Unit's (BVIU) SchoolWires Forms and Survey Tool (SWFST). Permission was obtained from the BVIU's Executive Director, Mr. Thomas Zelesnik, to use their resources for data collection and storage (Appendix G). The researcher is grateful for the generosity of the BVIU, as the use of this tool saved the researcher time and money during the distribution, collection, and data analysis phases of the study.

The SWFST is a secure, password-protected, online data collection and reporting tool that can export records in a comma-delimited format. The researcher used the SWFST to administer, collect, and store the survey data. Because the system is password protected, it was reasonable to expect all data would remain confidential.

The initial plan was to allow two weeks for the participants to submit the online survey and follow-up with non-responders on the 15th day after the initial mailing with a reminder email and after the 30th day via a personal phone call to request their participation one final time.

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[7] A copy of the survey was attached to the welcome letter email to reduce any delays associated with requesting hard copies. The researcher also felt the attached copy would benefit those who wished to respond using the electronic format as it would have allowed them to preview the contents of the survey before going online.

During this follow-up phone conversation the researcher was to briefly re-summarize the goals of the study, stress the importance of participating in the study, and highlight the benefits of the potential results in an effort to persuade them into sharing their experiences. This plan was almost immediately thwarted by bad email addresses and a series of other events that are explained more fully in chapter 4.

4. Analyze the data to find interesting and/or promising practices.

Upon the close of phase 1 of the study, the data were reviewed for completeness. All missing survey data were coded as either not applicable (NA – the question did not apply to the respondent) or as non-responsive (NR – the question did apply, but the respondent did not provide any data). The data were then summarized under the following headings:

a. **Survey Response Rate**
b. **Phase 1 Findings**
    i. Traditional Environment
    ii. Cyber Environment
c. **Phase 2 Findings**
    i. Respondent characteristics
        1. Location
        2. Years of operation
        3. Number of students
        4. Number of teachers
        5. Number of supervisors
        6. Student to teacher ratio
        7. Teacher to student ratio
        8. Grade levels served
    ii. Current supervisory practices
        1. Written procedures
        2. Performance standards
        3. Who is responsible for supervision
        4. Areas of evaluation
        5. Belief regarding improving quality of instruction
        6. Belief regarding raising student achievement
        7. Frequency of supervision
        8. Tools
        9. Strategies
        10. Barriers
        11. Struggles and Challenges
    iii. Data sources

                         1. Input from students and parents
                         2. Observation perspective
                  iv. General Perceptions
                         1. Next steps
                         2. Additional thoughts and concerns

       d. **Phase 3 Findings**
            i. Selection of interesting and innovative schools
          ii. Document review summary
        iii. Discussion session summary
       e. **Supervision Model Comparison**

5. Select schools for follow-up discussion.

Based on the analysis of the survey data, the researcher selected five sites to conduct follow-up discussions and document reviews. The researcher selected the schools by comparing supervisor responses with suggested best practices as determined by the SREB and Florida Virtual School. The researcher also used his professional judgment and factored into the decision *interesting and innovative* responses that others schools may appreciate and that appeared as though they would have a positive impact on teacher effectiveness. The definition of what constitutes interesting and or promising was developed through the analysis, however initial "look fors" included innovative uses of technology to improve supervision and supervision systems that are aligned with current literature. The intent of the discussion was to take a more detailed look at the school's supervision practices including policies, procedures, instruments, data collected, tools used for data collection and how the schools created their current policies and practices.

Once selected, the researcher sought permission from the primary contact to conduct the follow-up discussions and document reviews. The researcher requested that the primary contact or his/her designee be available for a recorded follow-up discussion to *tell their story*. The researcher stressed the importance of the session emphasizing its necessity to strengthen the researchers understanding of the information gathered from the surveys. Being fully aware of

the busy schedules people have, the choice of time and venue was scheduled at the complete discretion of the interviewee. The researcher assured the primary contact that the session would be kept to a minimum amount of time, scheduled at a convenient time for the participant and that the guided discussion setting may be face-to-face with video conferencing, over the telephone, or via an ElluminateLive! virtual meeting space.

Once the primary contact agreed to participate, they were given a choice for the school to be named in the study or to remain anonymous. (All schools chose to remain anonymous.) At this time the researcher also requested that the primary contact review his/her calendar for convenient meeting dates and email them to the researcher along with the school's supervision policies and teacher evaluation forms / guidelines / checklists. In preparation for the discussion, the researcher analyzed the documents as described in the data collection and data analysis sections.

6. Conduct follow-up discussions.

To better understand the hurdles, challenges, policies, and practices facing the schools, and to more fully address the emerging issues identified in the analysis of the survey data; the researcher conducted follow-up discussions the identified schools. At the onset of the interview, the researcher requested permission to digitally record the session. Participants were assured that the only reason for the recording was to facilitate the note taking process and that all interviews would remain completely anonymous to everyone but the researcher.

Using the Guided Discussion Template (Appendix C) the researcher interacted with the primary contact to obtain a deeper understanding of the school's "journey" with regard to developing their supervision policy and practices. Initial questions built into the Guided Discussion Template included interrogatory statements seeking detailed information on how the current practices were working, how the current systems were developed (the history the current

systems is structured after), the data points they felt were most important, and how they intended to advance/improve the system.

Guided discussion data were entered into the password protected project database in three formats. First, the unedited, digitally recorded guided discussion sessions were stored in the database for archival purposes and retrieved at times when further clarification was required. Secondly, written notes of the recorded discussions were stored in the database for the same purposes as the audio recordings. Lastly, the discussion data were entered into the Supervision Model Comparison Chart (SMCC) in a summary format consistent with the key elements used to frame the survey questions and document analysis checklist.

7. Discuss implications.

The researcher revisited the literature, compared, and contrasted the existing information with the findings from the study. The original key discussion points consisted of:

- Hallmarks of good practices and how they are exhibited by the exemplar schools

- Lessons learned with regard to what helped the exemplar schools and what elements they found to be the biggest stumbling blocks

- Key considerations for existing cyber schools

- Future research

3.5   ETHICAL CONSIDERATIONS

Before the submission of the study, the researcher participated in human subjects training as required by University of Pittsburgh Institutional Review Board (IRB) policies and procedures. This minimal risk research proposal received an "Exempt" classification under the Federal

Policy for the Protections of Human Research Subjects as it meets the Basic Exempt Criteria {§46.101b(1) for evaluation of educational strategies, curricula, or classroom management methods of taking place in an established educational setting and involving adults involved with normal educational practices.

The researcher understood his responsibilities pertaining to Federal Policy for the Protections of Human Research Subjects under the IRB policies and procedures and therefore took every precaution to protect research participants by ensuring that all participants understood (a) the purpose and scope of the study, (b) requirements for participating in the study, (c) risks involved with the study, (d) how the study may help participants and the school in general, (e) who paid for the study, (f) that participation was voluntary and the submitted survey served as consent to participate, (g) that they could have elected to withdraw from the study at any time, (h) that the data collected would not be used for any other purposes, and (i) the collection and storage of survey data were conducted in a secure and confidential manner in a password protected database.

There were no anticipated risks associated with this study however; participants could have experienced feelings of discomfort when answering some of the survey and discussion questions. Any discomforts experienced with questions were managed by participants not answering the questions causing the uneasiness. Being audio taped during the interview process may have caused other discomforts, however, participants could have elected not to be recorded.

Participants could not benefit personally from participation in this study other than the experience associated with close introspection of their supervisory experience at their school. There were no payments or incentives for participation in the study. The school as a whole could benefit, as they will be provided with a full report of all findings from the study, which could be

used to help justify current practices and improve present models of supervision based on scientific research.

4.0   RESULTS OF THE STUDY

4.1   SURVEY RESPONSE RATE

As described earlier, the researcher built a database of 203 U.S. based cyber schools from a variety of sources. The database included the following fields: ID code, name of school, state, URL, email, phone number, initial contact date, first follow-up date, final follow-up date and notes. The researcher used the database to track the progress of responses.

Initial contact was attempted by sending an email to the primary contact of each school on the list. A mail merge was created between the database and the researcher's email client to personalize the letter with the name of the school and the ID code. Almost immediately after the mail merge was completed, 63 *email undeliverable* messages were received. At this point, an additional field was created in the database titled undeliverable. The *email undeliverable* information was recorded in the database and a simple query was performed to generate a report of the schools returning the undeliverable messages. The researcher worked to find an alternative email address for each school on the report. The initial contact mail merge was then resent to the newly acquired addresses. The researcher received seven *email undeliverable* messages from the list of new addresses. This information was recorded in the database. One additional attempt was made to contact the schools returning the second undeliverable message. This final attempt at initial contact resulted in the following. One school was removed from the

list because no additional information could be found. A voice mail message briefly explaining the project and requesting that the recipient send an email address to the researcher if interested in participating in the study was left for four schools. A third email address was used to resend the initial correspondence to one school and contact was made with two schools who responded that they were not interested in participating. The database was updated accordingly with the new information. After two weeks, 21 responses had been recorded in the database. Fifteen responses were collected via the online survey, and six responses were received via email.

On the 15th day after the initial correspondence was sent, the researcher used the database mail merge to send a follow-up email. Simultaneously, a message was posted on the International Society for Technology in Education (ISTE) Special Interest Group for Telelearning/Distance Learning (SIGTel) wiki and the North American Council for Online Learning (NACOL) Forum. The message provided a brief explanation of the study and requested cyber school administrators to contact the researcher if they were interested in participating in the study. The second email attempt and Web solicitation for assistance resulted in no additional responses during the 2-week wait time. As planned, a third and final attempt to contact participants was conducted by reaching out to the 176 non-responders with a personal phone call.

The results of the outreach effort yielded 65 total responses for a 32% overall response rate. Thirty responses were submitted via the online survey and 35 responses were submitted through email or reported over the phone. Of the 35 email responses, 19 reported that they are not an online school, 13 said they were not interested in participating, 1 reported that they only do online tutoring, 1 reported that they have no live teachers, and 1 reported that most of the content is delivered in a traditional classroom. Of the 30 respondents who submitted the survey, 26 answered the filter question positively, 4 replied that they did not use the Internet to deliver

80% or more of their instruction over the Internet and 7 did not complete the survey: yielding an effective response rate of 9%.

4.2   PHASE 1 FINDINGS

Phase 1 addressed research question 1: What are the recommended practices of supervision in U.S. based traditional and cyber schools? The researcher used the information from the Review of Literature to define quality supervision in traditional and online environments by systematically recording the major components of what the literature suggested to be supervisory best practices in the traditional classroom and for the virtual classroom. From there, he used inductive and deductive reasoning to synthesize the data and created a description of supervisory practices.

4.2.1   Traditional Environment

One can deduce from the volumes of literature that supervision and evaluation are complex in nature.   Many different models and techniques are discussed (Clinical Supervision, Differentiated Supervision, Developmental Supervision, Cognitive Coaching, Reflective Practice, Reflective Teaching, Reflective Coaching, Portfolio Assessment, Peer Coaching, Peer Assessment, Peer Supervision, Mentoring, Walk-Throughs, Action Research, Trait Model, Teaching Process Model, Instructional Objectives Model, Teacher Performance Objective Model, and Client Supervision) each having their own merits and shortcomings.   Without looking too far, it is also possible to find lists of what supervisors should observe, how to

observe, observation tools, performance indicators to include in observations, approaches to enhance effective ways to listen and offer feedback, and suggestions of how often to visit the classroom. A thorough review of contemporary writings (Anderson, 1993; Costa & Garmston, 1994; Danielson & McGreal, 2000; Eisner, 1983; Glickman, 1985; Instructions for use of PDE 426 427 and 428, 2003; Kaye, 2004; Lieberman, 1995; McQuarrie & Wood, 1991; Nolan & Hoover, 2005; Pajak, 2002; Tucker & Stronge, 2005) suggests that multiple considerations and approaches are available and that the most successful strategies:

- Promote active involvement through individualizing/differentiating the supervision/evaluation process

- Use multiple sources of data that are systematically collected over time

- Involve collaboration to create a system where ideals such as trust, sharing, and reflection are combined with tools that are aligned to the strategic goals of the district

- Link supervision with staff development and evaluation to assist teachers in becoming more resourceful, informed and skillful

- Use the most appropriate and skilled person(s) to act as coach, mentor, supervisor and evaluator

- Incorporate efficient and creative use of time.

Using these key elements, the researcher describes a *good supervision model* as a collaborative, on-going, effective, and efficient process that improves the instructional practice of teachers and the educational experience of their students. In this model, multiple sources of data collected over time are used to create an individualized instructional improvement program that melds together competence and quality performance with professional growth of teachers to assist them in becoming more resourceful, informed, and skillful.

4.2.2   Cyber Environment

Very little research has been conducted on e-supervision models in the K-12 environment. However, the few studies that have investigated competence and quality performance of cyber teachers report (a) technology could be used to facilitate personnel evaluation (Amodeo & Taylor, 2004; Burke, 1993) and (b) e-learning environments, by their very nature, offer "megabytes of vital information about the teacher" (Evaluating online teachers is largely a virtual task, 2005, p. 1). In addition, just as computer technology provides students and teachers tools for addressing the five broad outcomes of individualizing learning, encouraging group interaction, managing and coordinating learning, fostering student expression, and assisting students in knowledge production (Hopkins, 1991): one could argue that technology can work for e-supervisors working with teachers (Capraro, 2003; W. S. Thompson, 1992; Hodder & Carter, 1997; Nabors, 1999; Souviney & Saferstein, 1997; W. S. Thompson, & Hawk, P. O., 1996; Wittenburg & McBride, 1998; Zimmerman & Greene, 1998; Wittenburg & McBride, 1998).

Most recently, the Southern Regional Education Board (SREB) and the Florida Virtual School published documents with recommendations for supervising online teachers. "Standards for Quality Online Teaching" was created by the SREB in their search to understand the qualifications necessary to be an effective online teacher. Relying on experts in the field from cyber schools and professional organizations, they developed a set of 11 standards grounded in practice and substantiated through the literature (Standards for quality online teaching, 2006). The standards address the three general outcomes of (a) academic preparation, (b) content knowledge, skills and temperament for instructional technology, and (c) online teaching and learning methodology, management, knowledge, skills and delivery (Standards for quality online

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teaching, 2006). Each major section is then sub-divided into the specific standards. A checklist of performance indicators then further refines the standards. To summarize the standards, SREB concludes that quality online teaching reflects the "attributes of any effective teaching, whether in the traditional classroom or online" (Standards for quality online teaching, 2006, p. 1). Moreover, quality online teaching incorporates a variety of technologies and methods to get to know each student, facilitate student discussions, monitor and evaluate students' academic progress, and respond effectively to students' needs. SREB also indicates the best online teachers use current and available technology to communicate effectively and efficiently, respond to students' questions and provide timely feedback, and create instructional environments that promote active participation and frequent interaction.

A second SREB document titled, "Online Teaching Evaluation for State Virtual Schools" draws from the standards set forth in "Standards for Quality Online Teaching". It describes a rationale for evaluating cyber teachers and includes a checklist designed to help supervisors gauge the quality of online teaching. From their research, they found that the success of the student largely depends on the quality of the teacher and the teaching methods used. Their evaluation form is broken into two parts: a checklist of the 11 standards and corresponding performance indicators and a narrative section where "the evaluator highlights successes and targets any steps the online teacher needs to take to improve" (Online teaching evaluation for state virtual schools, 2006, p. 1).

Similarly, the Florida Virtual School (FLVS) published a document titled "Managing Teachers You Can't See". This informational article provides a glimpse into the FLVS instructional oversight framework. Grounded in their many years of success in working with students across the country, the document is written as a guide for virtual school administrators looking to improve their teacher supervision process. They suggest that at a minimum,

supervisors need a mechanism to evaluate teachers in terms of student pace and progress, feedback and communication, commitment and culture and professional growth. They offer a checklist of some of the strategies that they use in their mentoring program and suggest that school administrators of cyber schools revise the checklist to reflect their own program.

Both SREB and FLVS place high priority on teacher accountability, support of the teacher, using multiple sources of data for evaluation, communication, content knowledge, and the appropriate use of technology tools. They also both suggest many of the same characteristics prominent in the traditional supervision model such as (a) individualizing and differentiating the evaluation and support strategies; (b) promoting active participation involving collaboration and teamwork (c) using multiple sources of data that are systematically collected over time; (d) aligning supervision and evaluation with the strategic goals of the school; (e) linking evaluation with staff development; (e) providing professional development for supervisory staff and (f) using efficient, effective and creative devices to improve student achievement. Therefore, a *good cyber teacher supervision model* may be defined as a collaborative, on-going, effective and efficient process, *delivered online through appropriate technology tools.* The process improves the instructional practice of teachers and elevates the educational experience of the students. In this model, supervisors incorporate the use of multiple sources of data collected over time and work collaboratively to create an individualized instructional improvement program that melds together competence and quality performance with professional growth of teachers to assist them in becoming more resourceful, informed, and skillful.

4.3   PHASE 2 FINDINGS

Phase 2 addressed research question 2: What is the nature of current supervisory practice in U.S. based cyber schools? The researcher presents detailed findings from the survey in the key areas of Respondent Characteristics, Current Supervisory Practices, Supervision Data Sources, and General Perceptions.

4.3.1   Respondent Characteristics

To be consistent with previous work, the researcher adopted the categorizations of cyber instruction defined in the writing of Watson and Ryan (2006) and Allen and Seaman (2006) and elected to study U.S. based cyber schools that enroll fulltime students in fully online courses. The first survey item requested respondents to place their school in one of two categories by answering a simple Yes – No question about whether or not their school enrolls students on a full time basis and provides at least 80% of their instruction over the Internet or not. Respondents who answered positively were asked to continue and those that answered negatively were thanked for their time and asked to exit the survey. The results of the "filter question" yielded 26 schools, however 7 of the 26 respondents answered fewer than 10 questions on the survey and subsequently had to be removed from the study: resulting in an effective response rate of 9%.

Section 2 of the survey requested additional demographic information to provide a more detailed description of the study population. When examining the responses it was found that schools from 11 different states participated in the study with the majority (7 out of 19 or 37%) of the population coming from Pennsylvania (Table 4). Due to the high percentage of schools from Pennsylvania participating in the survey, the researcher decided to present the data in a

comparison format highlighting similarities and differences between PA schools and all other schools.

Table 4. Location of Schools

Responses	States
7	PA
2	CA
2	AZ
8	CO, ID, KS, MD, MI, MN, ND, OR (1 response from each state)

The average years of operation of the schools are fairly even across the participating entities with a mean of 14 years. However, the numbers of students served and teachers and supervisors employed varies greatly. The number of students enrolled ranges from 60 to 7866 and as few as 5 teachers and 1 supervisor were reported at one school while another reported 90 teachers and 3 supervisors. The average student to teacher ratio is 53:1 and the average ratio of teachers to supervisors is 13:1, however, some of the schools report as low a ratio as 7:1 (student to teacher) and 5:1 (teacher to supervisor) and as high a ratio as 250:1 (student to teacher) and 30:1 (teacher to student). Pennsylvania schools participating in the survey report similar demographics as the national averages as far as student to teacher ratios and teacher to supervisor ratios, but differ significantly in average years of operation (5 PA, 14 Other) average number of students (2,479 PA, 1,856 Other) and average number of teachers (70 PA, 32 Other).

Participants indicated that their schools serve all grade levels. Nationally, the majority (11 out of 12 or 92%) serves the higher grade levels while 6 out of 12 (50%) report having a program for younger learners. Grade level characteristics of Pennsylvania schools differ in that most (6 out of 7 or 86%) serve students in all grade levels.

4.3.2 Current Supervisory Practices

Section 3 of the survey was designed to collect information about written procedures, performance standards, responsibilities, and technology tools. The following text, charts and figures help paint a picture of the current supervisory practices of Pennsylvania schools compared with all other participating schools.

Survey item 8 asked if the school had written procedures for supervision. Just over half of the schools (7 out of 12 or 58%) on a national level reported that they have written procedures for supervision, whereas in Pennsylvania, 7 out of 7 (100%) of the participating schools reported having written procedures for their supervision process. Survey item 9 questioned the participants on the resources consulted to develop their supervision procedures/policies. An examination of the open-ended responses revealed a few common words, phrases, themes, and patterns. The results show a variety of resources were used including state department of education guidelines, general research (no specific references to article or author), and prior experiences. Table 5 is a summary of the results ranked from the most cited to the least cited type of resource.

School administrators were also asked if their supervisory practices make a difference in the quality of instruction and student achievement and who's responsibility it is to ensure its successfulness. The majority of the respondents across the nation and in Pennsylvania agreed that their supervisory practices have a positive impact on the quality of instruction[8] (6 out of 7 or

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[8] 57% of PA schools reported in the survey that they agree however, clarifications were made during the guided discussions indicating two additional schools believe supervision improves the quality of instruction yielding a 86% response rate for PA schools.

86% PA, 11 out of 12 or 92% Other) and student achievement[9] (5 out of 7 or 71% PA, 10 out of 12 or 84% Other).

Table 5. Resources Consulted to Develop Supervision Policy and Practice

PA	Other	Resource
5	6	State government guidelines
2	5	other research (did not make a specific reference to an article or author)
2	4	Developed on their own using prior experiences of supervisory team
1	3	administrative course work
		graduate school
3	3	Danielson
0	3	NACOL (North American Council for Online Learning)
1	2	other traditional schools
0	1	input from teachers
0	1	district policy
0	1	SREB (Southern Regional Education Board)
0	1	ISTE (International Society for Technology in Education)
1	0	Specific authors (Glickman, Glatthorn, Marzano, English, Nolan & Hoover)

It was also reported that most schools in PA (6 out of 7 or 86%) and across the nation (6 out of 12 or 50%), charge the principal (6 out of 7 or 86% PA, 6 out of 12 or 50% Other) or

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[9] 43% of PA schools reported in the survey that they agree however, clarifications were made during the guided discussions indicating two additional schools believe supervision raises student achievement yielding a 71% response rate for PA schools.

assistant principal (4 out of 7 or 57% PA, 2 out of 12 or 17% Other) with this responsibility. However, 3 out of 7 (43%) of the schools in Pennsylvania and 5 out of 12 (42%) of the schools across the nation entered alternate titles of people who conduct supervisory tasks including department chairs, directors, and team leaders. Table 6 is a compilation of respondent input and illustrates the diversity of the titles of individuals charged with supervisory responsibilities.

Table 6. Other Individuals Responsible for Teacher Supervision

PA Schools	All Schools	Title/Description of Individual
2	1	Department Chair
0	1 (each)	Director, Associate Director, Virtual School Coordinator, Team Leaders, Curriculum Director
1 (each)	0	Director of Special Education, Senior Academic Administrator
1	1	Chief Executive Officer

Supervision is often thought of as a time consuming task. Survey item 15 asked the participants to indicate how often supervisors work with teachers (formally and informally) to develop professional goals and strategies. The findings from the survey revealed that the majority of participating schools from Pennsylvania (6 out of 7 or 86%) and across the nation (8 out of 12 or 67%) have their supervisors conference (face-to-face or virtually) with their teachers at least 2-4 times per year.

Supervision of cyber teachers can be very similar in nature to supervision of teachers in a traditional school, as the primary goal is the same: provide accountability and offer support to promote quality instruction. However, the tools used to achieve these results can be quite different. Survey item 16 asked the respondents to indicate the types of tools used in the supervision process and to indicate their opinion on the tools level of usefulness. At the top of

the list for schools across the nation and in Pennsylvania is email. Eighty-six percent (6 out of 7) of participating PA school administrators and 92% (11 out of 12) of other participating school administrators said their supervisors use email as a tool in the supervisory process. Of the administrators that reported using email in the supervisory process 43% (3 out of 7) and 67% (8 out of 12) respectively, indicated it was Somewhat Useful or higher. Other tools that received top rankings from participating schools include electronic observation tools (5 out of 7 or 71% PA, 7 out of 12 or 58% All) and instant messaging (4 out of 7 or 57% PA, 6 out of 12 or 50% All). It is interesting to note that video conferencing was more popular for participating schools in PA (6 out of 7 or 86%) than in the other schools (4 out of 12 or 37%). Figure 2 provides a more detailed look at the tools used in the supervision process.

	Social Networking Sites	Blogs	Wikis	Email	Video Conference	Instant Messaging	Electronic Portfolio	Electronic Observation Tool/ Checklist	Specially Designed	Other
	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
PA Schools	29%	14%	14%	86%	86%	57%	57%	71%	43%	0%
All Schools	32%	11%	5%	89%	37%	53%	26%	63%	58%	11%
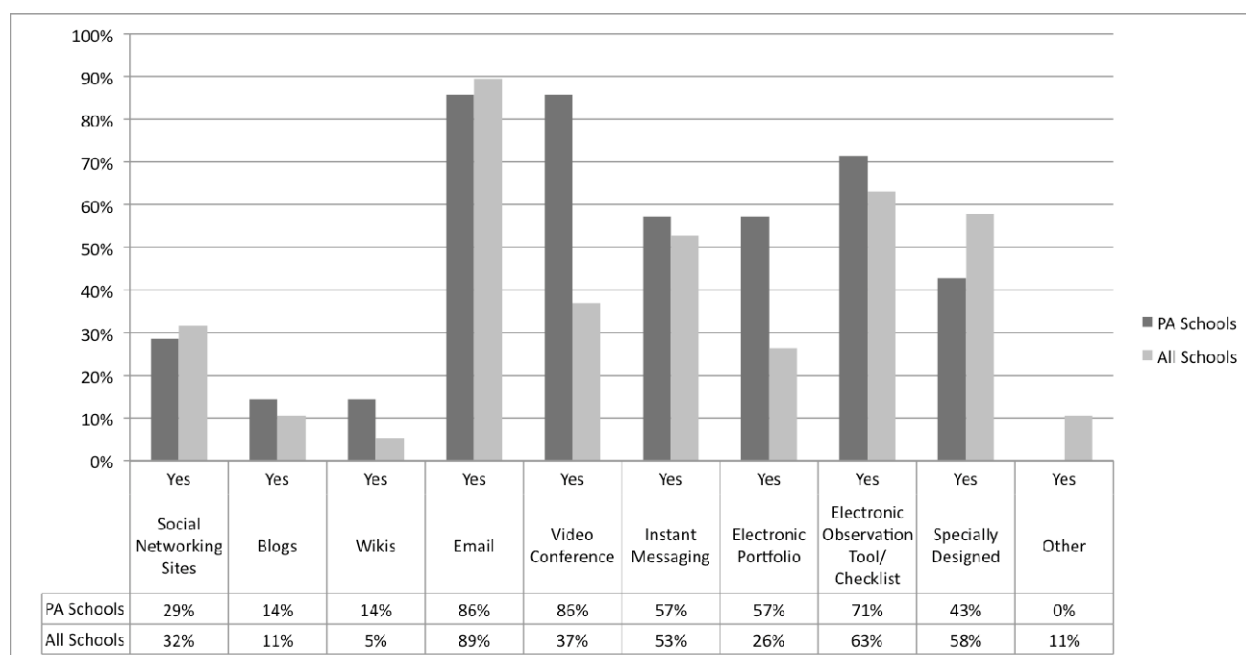
Figure 2. **Percent of schools indicating the use of various tools for the purpose of supervision.**

Survey item 17 questioned cyber school administrators on the use of a variety of strategies used in the supervision of cyber teachers and to rate the strategies according to their level of usefulness. Two strategies, data collected over time and personalized emails were

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selected by 100% (19 out f 19) of the participating schools and was reported to be Somewhat to Very Useful by the majority of all the schools in the study. The next highest ranked strategies for participating schools include analysis of multiple sources of data and as needed/on-demand training and support (7 out of 7 or 100% PA, 11 out of 12 or 92% Other). Regularly scheduled content team meetings, supervisor and teacher collaboration, timely, constructive, and specific feedback and frequent observation were next in line by a narrow margin. See Figure 3 for a complete summary of the responses for the types of strategies used in the supervision of cyber teachers.

	Differentiate Supervision based on varied ability levels	Regularly scheduled content team meeting	Regularly scheduled calls from supervisor	Supervisory and teacher collaboration	Pre and post observation conferences	Timely, constructive and specific feedback	Analysis of multiple sources of data	Data collected over time	Frequent observation	Flexible professional development opportunities	As needed/ on-demand training and support	Personalized emails	Peer mentoring/ coaching	Learning communities	Other
All Schools	50%	83%	67%	83%	58%	83%	92%	100%	92%	67%	92%	100%	58%	42%	0%
PA Schools	86%	100%	100%	100%	100%	100%	100%	100%	86%	100%	100%	100%	100%	86%	14%

Figure 3. **Percent of schools indicating the use of various supervision strategies.**

An error was made by the researcher regarding the language used in the Likert-type scale used in survey item 18 requesting respondents to rate a series of statements according to the degree of difficulty they present to the process of supervision cyber teachers. Due to the high importance level of this item, the researcher created a single item electronic survey (Appendix J) and distributed it to all participating school administrators. The email cover letter explained the error, apologized for the inconvenience, and requested the additional input. Seven responses were received and are summarized in Figure 4. Only one Pennsylvania school responded to the supplemental survey and reported a response of "Not Difficult" to each category.

	Highly difficult	Moderately difficult	Neutral	Slightly difficult	Not difficult	Response Total
Physical distance between teacher and supervisor	0% (0)	43% (3)	0% (0)	29% (2)	29% (2)	7
Offering constructive and specific feedback in a virtual environment	14% (1)	0% (0)	0% (0)	43% (3)	29% (2)	6
Physical distance between students and teacher	0% (0)	14% (1)	0% (0)	43% (3)	43% (3)	7
Offering content knowledge support in a virtual environment	0% (0)	14% (1)	0% (0)	29% (2)	43% (3)	6
Lack of official "Supervisor of Online Teachers" certification	0% (0)	29% (2)	14% (1)	0% (0)	57% (4)	7
Use of electronic collaboration tools to support teacher growth and development	14% (1)	0% (0)	14% (1)	29% (2)	43% (3)	7
Use of electronic observation tools for collecting data (e.g. video conference, virtual class recordings, email archives, phone records)	0% (0)	14% (1)	0% (0)	14% (1)	71% (5)	7
Other	0% (0)	0% (0)	14% (1)	0% (0)	29% (2)	3
					Total Respondents	7
					(skipped this question)	1

Figure 4. **Barriers to supervision of cyber teachers.**

Survey item 19 and 20 were open-ended response items designed to collect input from administrators on the challenges and strengths for their school's current supervision system.

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Overall, 16 out of the 19 participants responded to question 19 regarding struggles and challenges and 17 of the 19 schools responded to question 20 regarding strengths of their supervisory system. An examination of the open-ended responses revealed a few common words and phrases, themes, and patterns resulting in a list of struggles, challenges, and strengths of current cyber supervision systems.

Top responses for struggles and challenges include professional development and lack of time. Table 7 provides a summary of what the participating schools listed as struggles and challenges. They are ranked from the most cited to the least cited.

Table 7. Struggles and Challenges of Supervising Cyber Teachers

PA Schools	All Schools	Struggles and Challenges
1	6	Professional Development (Teachers and/or Supervisors)
2	5	Lack of time
0	1	Distance between supervisor and teacher
1	1	Changing technologies
0	1	Having enough staff for mentoring and support
0	1	Establishing the evaluation tools to fit specific needs of the school
1	1	Identify better ways of communicating
1	1	go the extra mile to ensure they are being supported

The next table (Table 8) is a summary of the reported strengths of cyber supervision programs ranked from the most cited to the least cited. Top cited strengths include clearly defined processes and expectations and well respected, experienced, and interactive supervisors.

Table 8. Greatest Strengths of Supervision Systems

PA Schools	All Schools	Strengths
2	5	Clearly defined process and expectations
3	4	Well respected, experienced and interactive supervisor
1	3	Availability and use of multiple data sources
1	3	Regular feedback/communication among teacher, supervisor, students and parents
2	3	Mentoring (daily mentoring, peer mentoring, lead teacher structure)
2	3	Teacher training (professional development, induction program)
1	2	Monetary bonus for high teacher performance
0	2	Collegiality/working closely with teachers
1	1	Teacher accountable for student learning
0	1	Virtual environment

4.3.3 Supervision Data Sources

Survey item 21asked the participants to indicate the data sources currently being used in the supervision process and then to rank them according to their level of usefulness. Most participating schools report that student work/test scores (4 out of 7 or 57% PA, 8 out of 12 or 67% Other), Classroom observation using archived data (4 out of 7 or 57% PA, 7 out of 12 or 58% Other), input from students (2 out of 7 or 29% PA, 9 out of 12 or 75% Other), teacher self

reflection (4 out of 7 or 57% PA, 6 out of 12 or 50% Other) and input from parents (3 out of 7 or

43% PA, 7 out of 12 or 58% Other) were the most widely used sources of data. Figures 5, 6, and

7 provide a summary of the reported data sources used in the supervisory process of participating

cyber schools.

	Student work/test scores		Input from students		Input from parents	
	Yes	Somewhat to Very Useful	Yes	Somewhat to Very Useful	Yes	Somewhat to Very Useful
PA Schools	57%	29%	29%	14%	43%	14%
All Schools	63%	37%	58%	42%	53%	37%
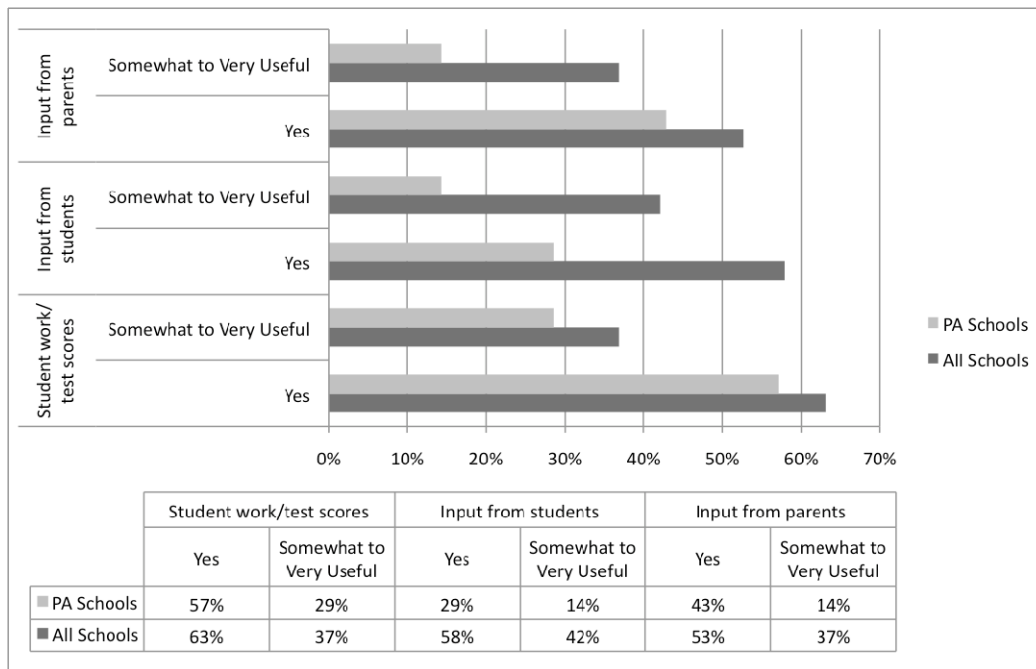
Figure 5. **Percent of schools reporting the use of student and parent input data and the percent of schools**

reporting these data to be somewhat to very useful.
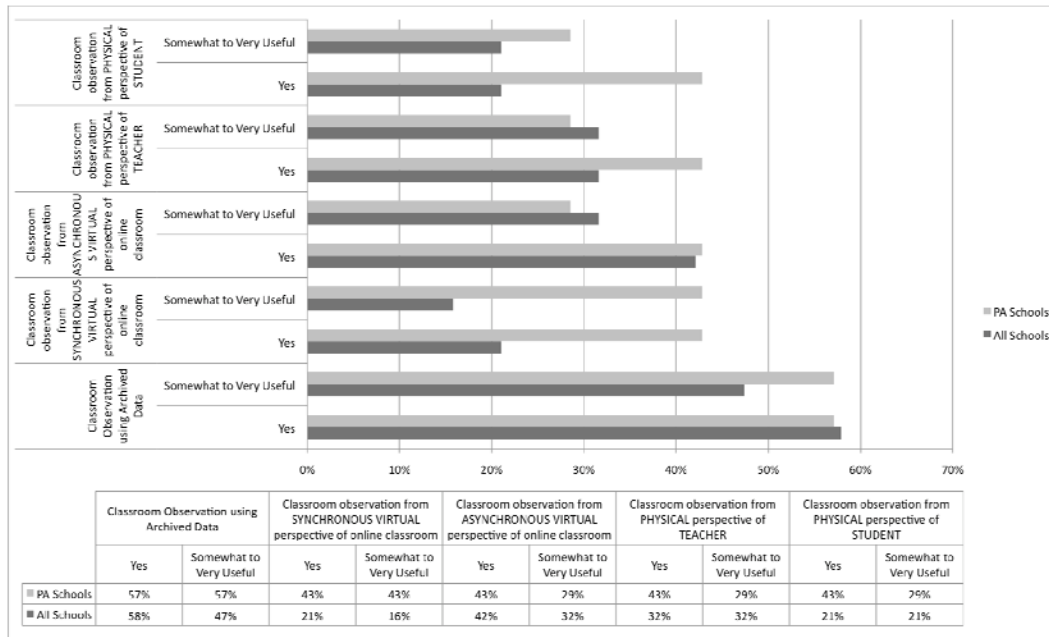
Figure 6. **Percent of schools reporting the use of classroom observation data and the percent of schools reporting these data to be somewhat to very useful.**
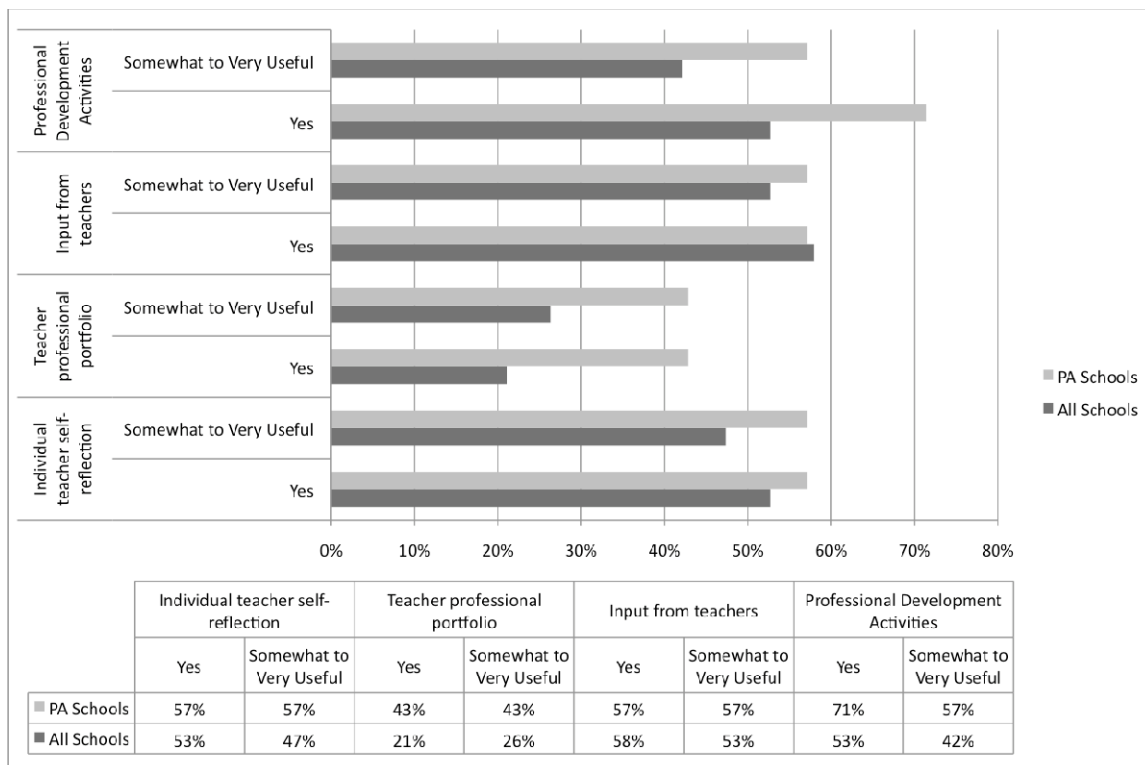
Figure 7. **Percent of schools reporting the use of other data sources and the percent of schools reporting these sources to be somewhat to very useful.**

4.3.4   General Perceptions

Survey item 22 asked for input with regard to the cyber school's next steps in maintaining/refining their supervision process. Participants responding to this open-ended question (14 out of 19) reported a variety of comments. Table 9 provides a summary of the results ranked from the most cited to the least cited.

Table 9. Next Step Toward Maintaining/Refining Supervisory Process

PA Schools	All Schools	Next Steps
1	3	Evaluation instrument modifications
0	2	Research
1	2	Training for supervisors
0	2	Develop more formalized process
0	2	Satisfied – None
1	1	Take time to implement
1	1	Establish school improvement team
1	1	Department heads provide more regular supervision
1	1	Create "teacher-led" evaluation process
0	1	Lobby for certification for online teacher
0	1	Make easier to administer
0	1	Continually updating process
0	1	Increase professional development opportunities

Survey item 23 requested the participant to express any other thoughts or concerns that may contribute to the study. Participants responding to this open-ended question (8 of 19)

reported a variety of comments. Table 10 provides a summary of the results ranked from the

most cited to the least cited.

Table 10. Additional Thoughts and Concerns Regarding Supervision of Cyber Teachers

Responses	Thoughts and Concerns
4	Stated survey item 18 was poorly constructed/confusing
2	Would like a copy of the study
1	One of our most important factors is a sense of teamwork that causes our teachers to seek out best practices.
1	Our goal has been to do all that we can to take the distance out of distance learning. We have not ventured into much synchronous work, as our constituency does not seem to want it. (They are widespread and do not want to be tied to time and place.) Several years ago, teachers worked in a vacuum. Now they are part of a learning team.
1	Supervising teachers can be easier in this model because anything you want to see is usually recorded electronically. It would be nice if there were more teacher education programs that would spend some time focusing on this type of teaching versus traditional classroom teaching.

4.4   PHASE 3 FINDINGS

In the third phase of the study, the researcher identified five schools that appeared to be engaged

in interesting and innovative supervision practices and contacted them for follow-up discussions

and document review. The following sections describe the selection process and summarize the

findings of the document review and the guided discussions.   The final section of 4.4

summarizes the data using the Supervision Model Comparison Chart (SMCC) and compares the phase 3 schools to the Literature Review Concepts Model (LRC), the Florida Virtual School Model (FLVS), and the Southern Regional Education Board Model (SREB) recommendations.

4.4.1 Selection of Interesting and Innovative Schools

The researcher decided to select the phase 3 schools from Pennsylvania. This decision was based on the perceived high interest level of cyber administrators regarding the topic. The perceived high interest level stems from the fact that 7 of 11 PA cyber charter schools responded to the survey and that these seven schools make up 37% of the total study population. After reviewing the survey data, the researcher identified five Pennsylvania schools for this part of the study. The selections were made based on the interesting and innovative responses to the survey items. The following paragraphs highlight the factors used to make the selections.

School A reported using a variety of resources to create their supervision process. Authors cited include Nolan and Hoover, Danielson, English, Glickman, Glatthorn and Marzano. In addition, school A indicated the use of several tools to practice supervision from a distance. The list of tools included blogs, video conferencing, instant messaging, electronic portfolios, and specially designed tools.

School B stated in the survey that they conduct supervision on a daily basis and that their "next steps" toward improving their supervision process includes the creation of a school improvement team and training of department heads in the area of supervision. School B also reported the lowest student to teacher ratio (17:1), a low teacher to supervisor ratio (11:1), and that they conduct supervision from the physical perspective of the teacher.

School C was selected in part, because they assert that their teachers are "supervised to a closer degree than those in the brick and mortar school" (School C Survey) and they report the lowest teacher to supervisor ratio (10:1). This school also indicated that they use every data source included on the survey and they are one of two schools to make observations from the physical perspective of the students. In addition, school C also spoke of an induction model, lead teacher structure, strong teacher training program, and the interaction between the CEO and the principal as strengths to their supervision model.

School D was chosen because they assert that supervision "is not significantly different in the virtual school than it is in the traditional brick and mortar environment" (School D Survey). They also report using monetary bonuses as an incentive in their supervision process, conducting supervision from the physical perspective of the student, and are one of the few schools to report that they do not use email in the supervision process.

School E was picked because they have the highest teacher to supervisor ratio (18:1) and is currently using a peer mentoring system, social networking sites, and observations from the physical perspective of the teacher in their supervision process. It is also interesting to note that they are working to create a 'teacher-led' evaluation of classroom practice as one of the next steps in refining their supervision process.

Once the schools were identified, the researcher proceeded to make arrangements to conduct the guided discussions. Initially, the researcher contacted the five schools through a phone call requesting their participation in an informal discussion to follow up on the survey. The first attempt resulted in the researcher leaving five voice mail messages. The message stated the reason for the call, provided a return phone number, and indicated that the researcher would call back in two days to follow-up on the message. A second attempt was made two days later and resulted in another five messages. Two messages were left with the secretaries of the CEO

and three were voice mail messages. The researcher waited a week and still had not heard back from any of the schools. At this point, he sought advice from his advisor. Together they decided to try sending an email message to prompt a response. School D replied to the email request almost immediately, calling the researcher to set up an appointment. During the call, the researcher provided the school administrator with a more detailed description of the study and requested electronic copies of the schools supervision policy and practice documents. School D agreed to send electronic copies of their supervision documents and requested a copy of their completed survey and the discussion questions. The researcher complied with the request and a mutually agreed upon venue, date and time was established and a successful interview ensued.

Two weeks after the first email was sent the researcher still had not received a response from schools A, B, C, and E. A final follow up email was sent to encourage their participation. Schools A, B, and E made a prompt reply to the second email request. The researcher requested documents to be exchanged in a similar fashion to the process with school D and sessions were scheduled. Successful interviews were conducted with schools B and E, however the researcher never received the requested supervision policy and practice documents requested in the email. Making another attempt to collect the documents, the researcher put in a simple request for them at the onset of the discussion. School E emailed the documents the day after the session. After waiting about a week the researcher had still not received any documents from School B. Therefore, a final email communication was sent to the CEO thanking him for taking the time to meet with the researcher and made one final plea for his school's supervision policy and practice documents. School A was not reachable on the guided discussion date. A follow up email was sent on the day of the session. The CEO responded to the follow up, indicating his schedule was full for another two weeks and suggested a possible date. The researcher replied to the email indicating that he would be available any time on the date indicated in the email, however a

confirmation was never received and the guided discussion with School A never came to fruition. The researcher never heard from school C.

In summary, of the five schools that were selected for this part of the study, only three (Schools B, D and E) participated. Of the three that participated, only two (Schools D and E) submitted documentation on their schools supervision policy and practice. The ensuing paragraphs summarize the Document Reviews and Discussion Sessions, highlighting key elements and unique characteristics.

4.4.2   Document Review Summary

Two tools, the Document Analysis Checklist (Appendix E) and the Keyword Matrix (Appendix D) were used to guide the analysis of the documents submitted by the schools. The first step in using the tools was to find keywords or phrases prevalent in the context of school supervision policy documents and teacher evaluation forms. The keywords, as explained in section 3.3.4, were derived from a prototypical description of supervision that was developed by the researcher through the emerging themes from the literature review. Understanding the importance of using consistent terminology to build a framework for the study, the researcher fashioned a working description for supervision by recording the key elements of supervision and evaluation as described by major contributors in the field into an electronic concept mapping software package. Using the electronic tools such as word find, sorts, and filters built into the concept mapping software, the researcher organized and analyzed the collected data to find commonalities. From this analysis, the researcher describes quality supervision as:

- a collaborative, differentiated, on-going, effective and efficient process

- that takes into account the ability and developmental level of teachers

- and improves the instructional practice of teachers and the educational experience of their students

- by using multiple sources of data

- regarding teacher performance, planning and preparation, environment, instructional strategies, and professional responsibilities

- collected over time

- to create an individualized instructional improvement program

- that measures teacher performance against clearly articulated standards

- and melds together competence and quality performance with professional growth of teachers

- to assist them in becoming more resourceful, informed and skillful.

To facilitate the organization, collection, and analysis of the data, the researcher identified and coded 12 uniquely measurable elements from the proposed description. The 12 elements (also known as keywords) include collaboration, differentiation, ongoing, effective and efficient process, account for ability and developmental level, improves instructional practice, improve educational experience of students, multiple sources of data, data collected over time, individualized instructional improvement program, measures teacher performance against clearly articulated standards, and melds competence and quality performance. As keywords or phrases were identified, the researcher cited the source using specific details including document name, page number, and paragraph. In addition, the context in which the keyword or phrase was used was also noted to illustrate the particular details of their usage. At times, direct quotes from sources were also included.

4.4.2.1 School B

The researcher anticipated collecting the supervision documents from the School B CEO, however the documents were never received. This was very disappointing as the researcher was quite excited to learn about the TDEF, Teacher Development and Evaluation Framework document discussed in the guided discussion. School B did elaborate on the document somewhat during the guided discussion session, and this information is presented later in the Discussion Session Findings.

4.4.2.2 School D

The CEO of School D submitted three documents pertaining to their supervision practices: Teacher Evaluation Policy, Pennsylvania Department of Education (PDE) Act 48 Professional Development Plan[10] and a Knowledge- and Skills-Based Salary Plan/Staff Bonus Policy. The School D contact person indicated that the researcher could download the PDE observation forms 426, 427 and 428 as they are used as the schools official teacher evaluation forms.

The researcher first reviewed School D's Teacher Evaluation Policy. The four-page document was clearly titled; included the name of the school and the author of the document; but did not contain a revision date. The author of the document cites using traditional supervision models from Charlotte Danielson's Enhancing Professional Practice: A Framework for Teaching and the PDE's form 426, 427 and 428 Teacher Evaluation Forms. The policy does not explicitly

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[10] Each school entity in Pennsylvania – including school districts, intermediate units, area career and technical centers and charter schools is required to submit a Professional Education Plan to the PDE. According to ACT 48 of 1999, all certified educators must complete 180 hours of professional development every 5 years. This professional development must be related to an area of the professional educator's assignment or certification and, if the educator is employed by a school entity, complies with their school entity's plan.

indicate the need of any certifications, however, in the section describing the formal and informal observation procedures, the school plainly differentiates between the requirements for teachers who hold a PDE Instructional I versus an Instructional II certificate[11].

The methods employed by School D include informal observation, formal observation, and a professional portfolio. The instructional observations occur in the teacher iLinc[12] sessions. A formal observation consists of the submission of an Instructional Plan of a single lesson, a post-observation reflection, and a post-observation conference. The observation report is then included as an artifact in the teacher's professional portfolio.

The investigation into School D's Teacher Evaluation Policy revealed that they place a high level of concentration on observing how the teacher interacts with the students. They also place a lot of emphasis on the concepts of collaboration, differentiation and multiple sources of data collected over time. A sense of the district's commitment to these concepts is suggested in their professional portfolio description and goal statement.

> "A Professional Portfolio is a collection of artifacts chosen to demonstrate professional
>
> proficiency in all four categories of professional practice. It is an individualized portrait
>
> of the teacher as a developing professional, reflecting on his or her philosophy and
>
> practice. The purpose of the portfolio is to document an individual's progress toward

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[11] According to 22 PA Code Chapter 49, Certification of Professional Personnel there are two levels of certifications in PA. The initial certificate, Level I allows and individual to seek employment in the public and private schools in PA. Upon completion of specific requirements, the Level I may be converted to a Level II certificate. If not converted, the Level I lapses after six (6) teaching/service years. You cannot be employed in a Pennsylvania public school with a lapsed certificate.

[12] iLinc is a web conferencing solution that supports multi-person video, application sharing and breakout groups.

achieving goal(s) established by the professional employee as well as document

proficiency in all areas" (School D's Teacher Evaluation Policy, p. 3).

Table 14 isolates phrases of the quote to more-clearly identify the key elements of supervision

incorporated in the statement.

Table 11. Themes from School D's Teacher Evaluation Policy Keyword Analysis

Excerpt from Quote	Concept
"A Professional Portfolio is a *collection of artifacts* [italics added]…"	Multiple sources of data
[Professional Portfolio] is an *individualized* [italics added] portrait of the teacher…"	Differentiated
"The purpose of the portfolio is to document an *individual's* [italics added] progress…"	
as a *developing* [italics added] professional, *reflecting* [italics added] on his or her philosophy and practice	Over time
toward achieving *goal(s) established by the professional employee* [italics added]…"	Collaboration

In addition to the professional portfolio description and goal statement, the opening statement of

the Teacher Evaluation Policy corroborates the district's commitment to the key element of *over*

time. The policy reads, "[School D] recognizes that teaching as a profession consists of a highly

complex set of skills and practices, which develop from *continued reflection* [italics added] and

refinement" (School D Teacher Evaluation Policy, p. 1). Here, *continued reflection*

communicates the schools acknowledgement of the importance of on-going support for their

teachers.

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The next document reviewed was School D's Act 48 Professional Education Plan. This six-page document, like the Teacher Evaluation policy, was clearly marked with the title of the document and the name of the school. A revision date was included in the title. The plan contained explicit goals and stated that it was drafted according to the requirements set forth by the Pennsylvania Department of Education's Act 48 Plan Guidelines for traditional schools. The contents of the plan were created in a collaborative spirit developed from the assessed needs of the educational staff and information from a parent survey. The plan dictates that all teachers will participate in at least one professional conference per year and in at least one workshop per semester. It further stipulates that all teachers will participate in at least two training seminars per year and that they will participate in an annual review of the schools "programs, organizations and functions" for the purposes of redesigning and restructuring of these elements. The Act 48 Plan also contained specialized statements regarding programs for K-3 teachers, special education teachers, teachers of ESL and gifted students, CPR and learning communities. Although the key words of collaboration, differentiation and on-going are not specifically cited, the plan calls for the cooperation from a variety of contributors and provides a continuous and diversified assortment of professional development opportunities including self-directed studies.

The final document reviewed for School D was their Knowledge- and Skills-Based Salary Plan/Staff Bonus Policy. The document places a lot of attention on teacher performance and student achievement and demands the teachers and administrators work in an on-going and collaborative manner to achieve the expected goals. The plan title includes the current year reflecting the fact that it is revised annually. The document ties teacher's knowledge, skills, and their students' performance to monetary bonuses. According to the plan, teachers who receive a satisfactory performance evaluation on an approved Pennsylvania Department of Education evaluation instrument and demonstrate competencies shown to have a positive impact on student

achievement, receive up to a maximum of $11,000.00 in bonuses. Teachers can earn up to $6,000.00 in bonuses for holding a Masters Degree in their content area, a certification in a second area, a certification in a "shortage certification area" (shortage certification areas are defined by school's administrator), certification from National Board for Professional Teaching Standards and an Instructional II (Permanent) certification. Teachers can earn the remaining $5,000 in bonuses by achieving school-wide Adequate Yearly Progress, for making "significant improvement" in the school's PSSA (Pennsylvania System of School Assessment) scores, for achieving significant student academic growth as measured by the school's local assessments or upon the recommendation of the school's administrator.

4.4.2.3 School E

School E submitted 11 documents. Upon initial review of the documents, it was apparent that they could be organized into three categories: Informal Observation, Formal Observation, and Teacher Induction. Three documents fell into the informal observation category: Informal Observation Justification (Evaluator Copy); Informal Observation ("Data Walk" /15-20 Minutes); and Informal Observation Form ("Data Walk" / 15-20 Minutes). There were six documents relating to formal observation: GOALS – Formal Observation, Formal Observation A-Z (1st Year Virtual Teachers), Pre-Observation Worksheet, Classroom Observation Instrument, Post-Observation Reflection Form, Post-Observation Instrument (Teacher-Led Conference). The two remaining documents, Proposal: Induction Plan and Mentor Responsibilities were placed in the Teacher Induction category.

School E's documents were all clearly marked with a descriptive title. None of the documents contained a revision date. One document, Formal Observation A-Z, was developed from a traditional supervision and evaluation policy. The Informal Observation Justification

(Evaluator Copy), Informal Observation ("Data Walk" / 15-20 Minutes), Goals – Formal Observation, and Formal Observation A-Z followed a common format in which they provided guidance on evaluation procedures. The Informal Observation Justification (Evaluator Copy) was divided into two main sections: Needs Improvement and Strengths. The sections were subdivided into categories of teaching and learning. Each subsection contained guidance and "Look for's" along with sample feed back items the evaluator could use when writing the evaluation report. The Goals – Formal Observation (Evaluator Copy) document was also divided into categories of teaching and learning and contained guidance in each area, but it did not list any sample statements the evaluator could use in the evaluation report. The Informal Observation ("Data Walk" / 15-20 Minutes) listed 11 teacher "Look For" items and 4 student "Look For" items. This document did not contain any guidance or descriptors of the items listed and did not contain any sample feedback statements for the evaluator.

The Informal Observation Form is a template for capturing data during the 15 to 20 minute "Data Walk". It has placeholders for the name of the teacher, class being taught, observers name, and the date and time of the observation. The body of the documents consists of a space for a narrative. The narrative section is aligned to the Informal Observation Justification (Evaluator Copy) in that it contains the same major headings of Strengths and Needs Improvement. (Note: the headings are reversed on the form: strengths category is listed first.) The document also has a space for a Post Observation Reflection that is completed by the teacher after the observation.

The Goals – Formal Observation document is supported by five other documents: Classroom Observation Instrument, Formal Observation A-Z (1st Year Virtual Teachers), Pre-Observation Worksheet, Post-Observation Reflection Form, and the Post Observation Instrument. The Classroom Observation instrument has placeholders for the name of the teacher,

class observed, date and time of observation, observer name, topic, grade level, and number of students. The second section of the document is divided in to four areas: Planning and Preparation, Classroom Environment, Instructional Delivery, and Professionalism. (Note: Appear to be modeled after the PDE 426.) Each of these sections is further divided into between 5 and 9 indicators.

School E's Formal Observation A-Z (1st Year Virtual Teachers), like the Classroom Observation Instrument, is divided into four domains: Planning and Preparation, Classroom Environment, Instructional Delivery, and Professionalism and states that it is modeled after the PDE 426. The document then goes on to list 26 (A-Z) "Look Fors" or "criteria to evaluate". The "Looks Fors" cover a range of indicators addressing the four domains.

The Pre-Observation worksheet has placeholders for teacher name, course date and time of the observation and the server number used to host the lesson. The body of the document contains six questions requesting information about prior knowledge/lessons taught, teaching and learning activities, how the teacher plans to check for understanding, how the teacher will address student interaction and participation, special circumstances, and if there is a focus area that they would like the evaluator to concentrate on during the observation.

The Post-Observation Reflection Form has a placeholder for teacher name and Post-Observation Meeting Date and Time. This document, like the Pre-Observation worksheet, presents a list of questions for the teacher to articulate their thoughts on the lesson with regard to student productivity, what they thought went well, parts of the lesson they would alter, and aspects of teaching that they would like to focus on for improvement.

The Post Observation Instrument (Teacher-Led Conference) has a placeholder for teacher name and a space for a narrative response to ten questions. The directions indicate that the teacher is to watch the recording of their lesson and then answer the questions according to what

they saw in the recording. They are asked to indicate if the students were actively engaged, questioning techniques were effective, progress was assessed and rewarded, the use of time was efficient, closure was effective, adjustments would be made to the lesson, the slide presentation was efficient and effective, prior knowledge was tapped, motivation techniques were effective, and goals were set to improve classroom instruction.

There is some alignment between the Goals – Formal Observation (Evaluator Copy) and the Classroom Observation Instrument, however it is not readily apparent. When comparing the Goals – Formal Observation to the Classroom Observation Instrument, 6 items are directly aligned, 7 are questionably aligned (subject to interpretation – not word for word), and 4 have no apparent alignment. When the analysis is conducted in the reverse, 16 elements on Classroom Observation Instrument are not addressed on the Goals – Formal Observation.

A comparison was also conducted between the Formal Observation A-Z for first year virtual teachers and the Classroom Observation Instrument. Nineteen of the 26 "Look Fors" can be directly matched with the criteria on the Classroom Observation Instrument. Three of the indicators are questionably aligned (subject to interpretation – not word for word) and four have no apparent alignment. When the comparison is reversed, 14 of the indicators on the instrument are not mentioned as a "Look For" on the Formal Observation A-Z document.

A close inspection of the Pre-Observation Worksheet, the Post-Observation Form and the Post Observation Instrument reveals that only three indicators; student engagement, assessing student achievement and improving teaching and learning, are present in all five documents.

The final two documents submitted by School E fall in the category of teacher induction. The first, Proposal: Induction Plan is a four-page document that outlines goals, lists seminar topics, and establishes a timeline for implementation. Page 1 contains a table summarizing the induction process by years of experience. First year teachers are supported by staff development

opportunities, a 1ˢᵗ Year one-to-one Mentor, quarterly BEST (Beginning Educator Support Team) meetings, monthly newsletters, informal and formal observations, improvement plan and opportunities to observe exemplary teachers. Second year teachers participate in a 2ⁿᵈ Year Mentor Program, staff development opportunities, informal and formal observations, improvement plan and have opportunities to observe exemplary teachers. Third year teachers participate in staff development activities and continue with informal and formal observations and improvement plans. Teachers with 3 or more years of experience are eligible to become mentors.

Page 2, titled "Reaching out to be the BEST", lists 14 ideas for the BEST seminars. Topics include Balancing teacher stress, Accommodating student differences, Understanding standards, Celebrating BEST practices, Entering/maintaining grades, Differentiated instruction, Climate, Culture, Establishing a Positive Environment, Bulletin Boards, Parent Communication, Assessing & Evaluating students, Motivating students, and Use of Effective Teaching Methods.

Goals are listed on page three. The stated goals of the Teacher Induction program are to "Introduce teachers to practices that will help them become competent & effective professionals; Develop appreciation of school community & culture; Retain teachers (more than 20% leave during the first three years); and Promote personal & professional well-being" (School E Proposal: Induction Plan, p. 3).

The final page of the Proposal: Induction Plan briefly describes the schools Induction Model as the New Teacher Academy and breaks down the process into two phases. Phase 1 is described as the orientation phase and it consists of workshops, a meet-and-greet, and mentor introductions. Phase 1 occurs one to two weeks before the start of school. Phase 2 is labeled SSS for Systemic Sustained Support. This phase consists of the formal mentor program, which includes team planning.

The final document submitted by School E is labeled Mentor Responsibilities. This one page document contains a list of seven duties/tasks expected of the mentor. The tasks include attending all in-service sessions, being on call (24 hours) for the first semester, conducting a peer review of mentee including two peer observations per year, conducting at least one meeting per month with mentee, attending the meet and greet luncheon, helping with mentee training during the first in-service, and completing a mentor evaluation of the mentee.

Phrases like "BEST – Beginning Educator Support Team" (School E Proposal Induction Plan, p. 1), "Reaching out to be the BEST" (School E Proposal Induction Plan, p. 2), "SSS – Systemic Sustained Support" (School E Proposal Induction Plan, p. 4), mentors "On-Call (24 hours)" (School E Mentor Responsibilities, p. 1), "Developing school community and culture" (School E Proposal Induction Plan, p. 3), "Build a support network for the rest of the year" (School E Proposal Induction Plan, p. 3), "increased collaboration" (School E Proposal Induction Plan, p. 3), and "promoting personal and professional well-being" (School E Proposal Induction Plan, p. 3) provide evidence of what one may suggest is the major theme of the induction documents: support of teachers.

When applying the Keyword Matrix to School E's documents the researcher found a strong presence of three themes. The first prominent theme revolves around the keywords observe, evaluate, and mentor. The school describes in their documents how they use mentors and peers to observe and evaluate colleagues and how new teachers are required to observe and evaluate their mentors. Some of the documents provide guidance to observers on what they should look for as evidence of quality teaching and learning and provide sample comments for the observer to use as feedback on the lesson. The second theme involves the concept of reflection. School E describes teaching as "a continuous cycle of teaching, assessment, reflection, revision and renewal (School E Proposal Induction Plan, p. 2). Their documents

consistently articulate the message that teachers are to "reflect on each and every lesson and look to improve on components that did not work and refine those that did" (School E Goals – Formal Observation, p. 3). Furthermore, as they reflect on the lesson they are to ascertain the degree to which students were actively/productively engaged with the material. The next most constant message contained within School E's documents involves the keyword of feedback. Feedback is described as being a vital component in that observers are to ensure that teachers are providing "equitable, accurate and constructive feedback to all students (School E Classroom Observation Instrument, p. 1) and provide the same to the teachers for which they are responsible.

Other noteworthy findings discovered during the keyword search include a strong focus on student behaviors in the learning environment and the presence of an on-going approach to collaboration and differentiation in supervisory methods and professional growth. The references to student behaviors were found in the sample comment items an observer might use when completing an observation report to provide the teacher with feedback on student behaviors. Evidence of the schools strong commitment to collaboration and differentiation are clearly expressed in their writings about the mentor-mentee relationship and their continuous effort to seek out input from teachers during pre- and post- observations. School E indicates that they: perform multiple Informal "Walk-throughs"; insist on a minimum of monthly contact between the mentor and mentee; hold quarterly meetings; and tailor their professional development based on the number of years of experience and individual needs of the teachers; which increases professional growth and job satisfaction. They state that this growth leads to increased academic achievement.

4.4.3   Discussion Session Summary

The intent of the discussion was to clarify questions generated during the initial phase of data collection and to gain a better understanding of the schools more interesting in innovative approaches to supervising their cyber teachers. As detailed in the rationale for determining the phase 3 Schools, each school was selected based on unique characteristics and therefore the inquires made and data collected differs from school to school. The researcher used the transcriptions of the recorded discussions and summarized the responses for each question. This was accomplished by converting the conversational dialogue of the discussions into summary statements that capture the gist of the conversation. This section details the findings from the guided discussions first by summarizing the responses pertaining to clarifications sought regarding the disconnects between answers provided on the survey and then by summarizing the interesting and innovative practices detailed in the guided discussions.

4.4.3.1 Disconnect Clarifications

Several categories of disconnects were realized during the review of the survey data. The categories include: usefulness of the supervision process; the tools used for supervision and evaluation; the data collected for supervision and evaluation; resources used to develop supervision process; the individuals responsible for conducting supervision; insight as to why the practice of differentiating supervision is not widely practiced; and specifics on the next steps schools planned to take to improve their supervision process.

Schools B and D reported in the survey that they "Strongly Disagreed" that their *supervision practices improved instruction or raised student achievement* however, they also reported having a well thought-out process with respected supervisors and daily mentoring and a

comprehensive evaluation plan grounded in state guidelines and current literature. The guided discussion revealed in both cases that a mistake must have been made when they recorded their answer on the survey. When the CEOs were asked if their supervision improves instruction and raises student achievement they emphatically replied in the affirmative. The School D CEO offered an elaboration. He indicated that every year since the implementation of his plan (the plan was in its 3rd year at the time of the discussion), his school has seen dramatic increases in PSSA (Pennsylvania System of School Assessment) test scores. His school is now meeting Adequate Yearly Progress[13] (AYP) in 19 of 21 benchmarks whereas before the new policy, the school was only meeting 3 of 11 benchmarks.

On the survey, Schools B and D reported using *archived data* as a source of information in the supervision process but indicated it was not very useful. During the guided discussion, School B reported that they find the archived data to be very useful; they look at everything, communication with parents, kids and the lessons themselves. They suggest the review of archived data is more about reviewing contact with parents and the students and that this is done by reviewing virtual sessions and lessons the teacher as well as emails and phone call logs. School B's teachers work from a central office. Therefore, supervisors can pull up their lessons and evaluate them any time. School B uses past lessons, future lessons, in conjunction with student and parent interaction in the evaluation. They report having no formalized way of evaluating the teachers but the subject area coordinators are constantly looking at the lessons within their department. School B does not incorporate pre-conferences, observation, or post-conferences into the supervision process because they indicate that they evaluate on a daily basis.

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[13] The Pennsylvania Department of Education defines AYP as the way they know schools are making progress toward the goal of all PA students reaching the proficient level or above in the area of mathematics and reading by 2014 as mandated by No Child Left Behind (NCLB). More information can be found by visiting http://www.pde.state.pa.us.

School D however confirmed their survey response, stating that while they do use archived data, they prefer watching it live because it gives them a better sense of what is going on in the classroom.

The third disconnect involved School B and the use of the *tools used in the supervision process*. School B indicated, as most schools surveyed, that they use a variety of tools in the supervision process but School B, unlike their counterparts, said the data were not very useful. Their guided discussion response clarified the disconnect with an explanation of how they were using a system that offered an abundance of tools for collecting data on students and teachers but it indeed was not very useful. They have since switched to a new system, hired a private programming company, and are pleased with the data they are able to track.

Part of the guided discussion was dedicated to inquiring deeper into the types of *resources that were used to develop their supervision processes*. School B and E provided somewhat vague responses to this survey question offering phrases such as "numerous other resources" and "examples from other schools" as answers. During the guided discussion, the CEO from School B indicated that he did not complete the survey and was not sure what was meant by the response. He did however remark that the he created the current model called TDEF (Teacher Development and Evaluation Framework) and it is based off the work of Danielson. School E indicated that the response "other schools" was mostly made up of the *chartering school* and the districts of the administrators' previous employment. They were not aware of the FLVS and SREB models but did review some material from NACOL. The CEO indicated that they use the PDE 426, 427 and 428 per the request of the Pennsylvania Department of Education, however they modified the forms for use in the virtual classroom. The principal offered an example modification indicating that they kept the four domains spelled out in the PDE forms but eliminated items like classroom management that they determined were not

applicable. Their modifications also included additions in areas they want their teachers to focus on such as the direct instruction model that they require to be incorporated into their lessons.

Additional clarification was also sought from School E regarding the *number of people involved with the supervision process*. Most survey respondents said that their CEO or another administrator was responsible for supervision. School E indicated that their principals do the official observation, exit conference, and evaluation. Assistant principals, instructional supervisors, and department heads review and evaluate the teachers as well, "They all sit right there along side the teachers and make recommendations" (School E Guided Discussion, p. 2). Principal, assistant principal, instructional supervisor and department heads are all responsible for professional development and support of the teachers but the instructional supervisors and department heads operate in such close proximity they are reviewing, evaluating and supporting all the time. They do up to 6 observations/evaluations per year. Two informal observations, also known as walk-throughs, are unannounced 15 to 20 minute snapshots of what is going on in the classroom. Informal observations are done before the formal observation and the information is used to develop areas of concentration for the formal observation. Then there are two formal observations performed by the principal. The formal observation consists of a pre-observation worksheet, the observation, a post-observation reflection form, and then a teacher-led post-observation conference. The final observations/evaluations are done on a peer-to-peer basis where a mentor and his/her mentee conduct informal observations with each other.

The strategy of *differentiating supervision based on varied ability and developmental levels of teachers* was only selected by 6 out of 12 (50%) of schools on a national level and by 6 out of 7 (86%) of PA schools. School E indicated that they did not use this strategy and since they are one of the oldest cyber charter schools in PA, the researcher thought they might be able to provide some insight as to why the practice of differentiating supervision is not widely

practiced by other cyber schools. During the guided discussion, they stated that they could not explain this trend and that do not have an official policy establishing procedures or practices for differentiating supervision. However, when asked to elaborate on their practices, School E spoke about how they incorporate individualized improvement plans for teachers. These plans are developed based on needs and goals formulated during the observation process. They also spoke of differentiating based on years of experience teaching in a virtual environment. New teachers, described as new to teaching in a virtual environment not necessarily new to teaching, are placed in a 2-year induction program where they are assigned a peer mentor and have additional opportunities for informal observation. Although School E does not report using this strategy, in practice, they appear to incorporate it into their plan.

The final area of clarification sought out during the guided discussions pertains to the vague responses collected on the final survey response item requesting information about the *school's next step to improving their supervision process*. The surveys revealed very little about the schools' plans for their next steps for improving their supervision practices and very little insight was gained during the guided discussions. School B indicated that there were no major plans but they are always looking for ways to improve. School D spoke only of readjusting the bonus schedule to reflect current needs to keep the school moving forward and School E elaborated slightly on their plans to create a "teacher-led" evaluation. School E explained that they created a 10-question document that allows the teacher to reflect on their lesson. The teacher is directed to watch a recording of their lesson and then complete the instrument. The teacher then uses that document to lead a post-observation conference with the supervisor. The principals indicated that this was a project in the making and were excited about the level of engagement between the teachers and the supervisors.

4.4.3.2 Interesting and Innovative Practices

As mentioned previously, the selection of phase 3 schools was based in part, on what the researcher found to be interesting or innovative. The following paragraphs summarize these concepts by school.

School B reported using a *Professional Development Team* and *conducting observations from the physical perspective of the teacher*. During the guided discussion, the CEO mentioned the use of the professional development team and the school improvement team as being key to supporting the teachers. He indicated that he would submit a copy of plan but the researcher never received the email and therefore no detailed clarification was possible. However, the CEO spoke in the guided discussion about how there is a great sense of collegiality and camaraderie that sustains the team spirit. He remarked that they nurture this family like atmosphere with a host of professional support services (full guidance department, fulltime academic advisors, extensive help desk) and by having picnics and other social events.

During the guided discussion it was revealed that School B's teachers work from a central location, offer mostly asynchronous courses, and purport supervision mostly involves evaluating the uniqueness and effectiveness of the posted lessons, supplemental/support materials and monitoring for proper communication. Therefore, it is their contention that conducting observations from the *physical perspective of the teacher* is logical and convenient. They indicated that teacher performance is assessed daily against clearly defined assessment standards and that their teachers self-assess and work with subject area supervisors to work on areas they define as needing improvement. In addition, School B's administration sometimes sits with the teacher as they create/put up their lessons/prepare their lessons and are able to closely monitor the teachers. They feel that because of their particular arrangement (being a cyber school that offers mostly asynchronous courses and centrally located teachers) they are

able to put in twice the hours of other schools on training and professional development for their staff.

School D was selected because they reported that the supervision of cyber school teachers is not much different than supervision of traditional school teachers, they use a monetary bonus system, they observe from the physical perspective of the student, the observe from the synchronous virtual perspective of the teacher, and they use a professional portfolio. The School D CEO feels "supervision is the same as in a brick and mortar school but the difference is that the instruction is online" (School D Guided Discussion Transcription, p. 1). In his opinion, it is better to watch the teacher interact real time to watch the teacher monitor and adjust rather than watching a recorded session. He also indicated that he feels teacher observations can be performed with less disruption in a virtual environment because the students do not notice him being there as much.

The CEO of school D strongly believes in the *monetary bonus system*. The rationale is that it has everyone focused on student achievement and making AYP. His school pays teachers for advanced degrees in certification area, for national board certification and for the school making AYP. He reports that the only problem with the monetary bonus system was that they had some teachers come for bonus and then leave for another job. This problem was resolved with a slight modification to the policy.

When the School D CEO was asked to clarify how they conduct *observations from the physical perspective of the student* he responded that he does not sit in the same physical space as the student. He went on to clarify that he sits as a student in the virtual classroom and pays more attention to the students reactions to the lesson being presented sometimes more than watching the teacher present the material. A quick follow up question was then asked to gain his perspective on weather or not he thought it would be useful to sit in the same physical space as

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the student. He quickly indicated that he did not think it was necessary to sit in the same physical space as the student. After a pause, he went on to question how one would go about selecting the student to visit. He suggested that it is more beneficial to view the students as a group and does not think it would be valid to sit with just one student.

The School D CEO also indicated on the survey that they conduct *observations from the synchronous virtual perspective of the teacher*. He contends that watching it live gives you a better sense of what is going on and you can see teacher student interactions that are often missed during recorded sessions because of privacy but no explanation was provided on how privacy issues might directly affect the outcome. The CEO sometimes schedules the sessions and other times he just drops in on them. For the scheduled sessions, he has the teacher do a pre-observation and fill out an instructional plan. The instructional plan is then discussed in the post observation. He finds the data collected this way to be very useful because it standardizes the process and gives him a better yardstick so it is fair. The CEO also indicated that conducting observations in a virtual environment is easier than doing it in a brick and mortar environment but then in some ways it is also more challenging. Elaborating on this point, he added that he feels like he has more time for supervision and can do a better job because he has fewer teachers and does not have to deal with a lot of other principal like duties. He also explained that virtual supervision can be more challenging in that "you don't see faces, you don't see body language of teachers and students and that makes it more difficult because you miss visual cues" School D Guided Discussion, p. 7).

Few schools reported using a *professional portfolio* as a part of their supervision process. The CEO at School D reported that his teachers see it as a valuable professional development tool. The teachers are provided templates to follow so the process is standardized and fair. He contends that the teachers appreciate the opportunity because they know their evaluation is not

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based on one or two observations and that the portfolio affords them another avenue to show they are improving and performing at a high level. The portfolio model, he asserts, put the teacher in the role of data collector and they become active participants in the evaluation process. The CEO believes this reciprocal nature of the portfolio give the teachers some ownership and control over the process and challenges them to be their best. He concludes that the only problem with the portfolio is it is a time-consuming process.

Interesting and innovative practices reported by School E include the use of peer mentoring, social networking sites, teacher-led evaluations, and observing from the physical perspective of the teacher. Like School B, School E houses many of their online teachers in a central facility. From this vantage point assistant principals, instructional supervisors, and department heads are able to review and evaluate the work of their teachers from the *physical perspective of the teacher*. The CEO remarked how supervisors are "sitting right there along side the teachers and make recommendations" (School E Guided Discussion p. 1). The principal, assistant principal, instructional supervisor and department heads are all responsible for professional development and support of the teachers but the instructional supervisors and department heads operate in such close proximity they are reviewing, evaluating and supporting all the time. This close proximity model feeds right into their *peer mentoring* model. Peer mentors are used as a part of their 3-year teacher induction program. Among the responsibilities of a peer mentor is to observe the mentee at least two times per year and to allow the mentee to observe the mentor. The two must meet minimally on a monthly basis, they must be "on-call (24 hours)" (School E Mentor Responsibilities, p.1) for the mentee, and accompany the mentee to all in-service trainings/professional development including the "new VC in-service" before the start of the school year.

Continuing the focus on a collegial relationship between the teachers and the administrators, School E reports the use of *social networking* sites and a *teacher-led evaluation* as a part of the supervision process. Although School E reports that they do not use any social networking sites in the traditional sense of the word, they do use Interwise, SharePoint, and Blackboard for posting documents, conducting online discussions, and participating in virtual meetings. The teacher-led evaluation consists of a 10-question document that allows the teacher to reflect on their lesson. During this final stage of the evaluation process, the teacher is directed to watch the recording of their lesson and then complete the instrument. The teacher then uses the completed document to lead a post-observation conference with their supervisor.

4.4.4   Supervision Model Comparisons

Supervision Model Comparison Chart (SMCC) (Appendix F) was created in Microsoft Excel and engineered to visually organize the complex data to aid the collection/analysis process. The SMCC provided a structured mechanism to compare the relationships between what the literature suggests constitutes quality cyber supervision and what the data from the survey, document analysis, and discussion questions revealed about current supervisory practices found in the schools being studied. The table consists of three sections, each broken into three columns: Model, Source of Evidence, and Details. The first section is designed to compare concepts from the review of literature (Literature Review Concepts Model - LRC) to the data collected for the study. The first column of section one contains 12 rows that are populated with the previously described uniquely measurable elements from the proposed definition of supervision (see Table 2, page 92). The researcher populated the second column with specific citations of sources of evidence from the surveys, document analyses, and guided discussions that indicated the

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presence of the element. In the third column, the researcher provided specific details illustrating the context, concepts, or themes. Direct quotes form sources were also included as necessary.

The remaining two sections of the SMCC mirror the first but were used to compare current supervisory practices of U.S. based cyber schools to the specific guidelines established by the Florida Virtual School Supervision Model (FLVS) (Managing teachers you can't see. Instructional oversight in a virtual school, 2006) and the Southern Regional Education Board Supervision Model (SREB) (Online teaching evaluation for state virtual schools, 2006). The resulting matrix allowed the researcher to conduct a more thorough investigation of the similarities and differences between the various models, helped identify additional trends and prompted additional questions for further research. Section 4.6 provides a detailed summary from this analysis.

First, to avoid any ambiguity or confusion about the interpretation of the data regarding the model comparisons, the researcher felt it necessary to provide a more detailed explanation of how the SMCC was used and offered the following set of rules that governed how the researcher populated the SMCC tool.

Step 1: Select an evidence source from one of the schools. (Evidence sources include the guided discussion transcripts, the survey data results and any documents the school submitted. For this example, the researcher chose to use School D, the LRC Model, and the guided discussion transcript.)

Step 2: Read straight through the entire length of the evidence source (Guided Discussion Transcript)

Step 3: Re-read the source document for evidence of concept/element from the LRC Model, FLVS Model, and the SREB model. (LRC - Collaboration)

Step 4: At the first occurrence of the concept/element mark column 2 of the SMCC with the title of the document and any source reference notes. (Guided Discussion 9550)

Step 5: Mark column 3 of the SMCC with the specifics of the occurrence including page, section, paragraph, or time stamp. (Time stamp [00:28:57.08] the portfolio system takes me out as the sole collector of the data, now they have some control and say in the process…)

Step 6: Continue reviewing the evidence source (Guided Discussion Transcript) for additional citations of concept/element (collaboration). Mark additional citations in SMCC column 3 using the formula in step 5. (Time stamp [00:24:54:00] Rationale is that it has everyone focused on student achievement and making AYP.)

If no additional citations are found, move on to the next concept/element. (Differentiation)

Step 7: At the first occurrence of the next concept/element (Differentiation) mark column 2 of the SMCC with the title of the document and any source reference notes (Guided Discussion 9550) and continue to repeat steps 5 through 7 until the process is complete for all sources of evidence and every concept/element for each school.

Step 8: Count sources of evidence for each concept/element by school. In this scenario School D would have a count of 2 – one tally mark for collaboration being found in the Guided Discussion Transcript and one tally mark for differentiation being found in the Guided Discussion document.

In the actual data set, evidence of collaboration was found in 4 sources of evidence while differentiation was found in only 3.

Step 9: Count specific citations in column 3 for each concept/element by school. (In our example, School D would have two tally marks for collaboration.)

In the actual data set, collaboration had 12 citations and differentiation had only 6. Putting it all together, collaboration was cited 12 times across 4 sources of evidence and differentiation was cited 6 times across 3 sources of evidence.

Overall, 212 citations across 91 sources could be related to the LRC Model, 106 citations across 35 sources could be related to concept/element from the FLVS Model and 69 citations across 21 sources could be related to concept/element from the SREB model. (See Figure 8).
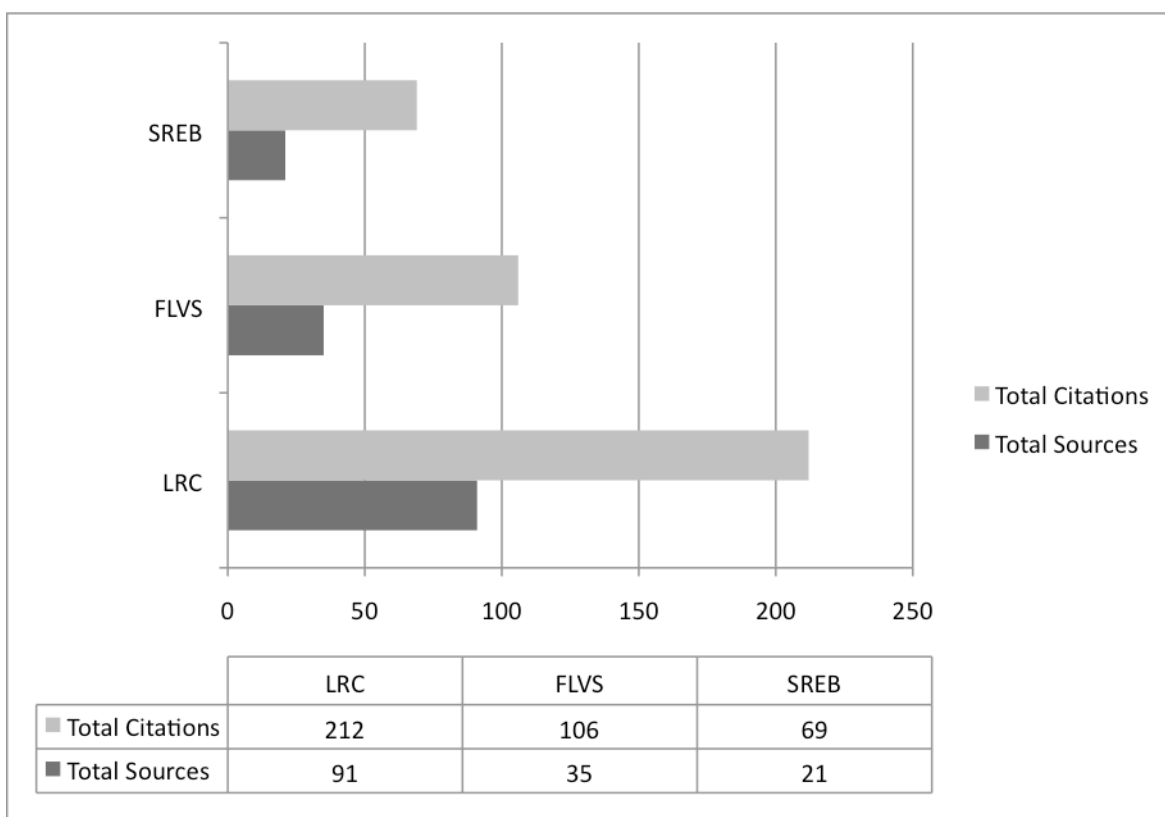
Figure 8. **Total Number of Sources Vs. Total Number of Citations Found in Sources**

Figures 9, 10, and 11 provide an in-depth look at how the sources and citations relate to the specific elements/concepts of each model.

Comparing the school's documents to the LRC Model the most common citations included references to the elements of multiple sources of data (37 occurrences), collaboration (31 occurrences) and on-going (30 occurrences). The elements with the fewest occurrences were

improve educational experience of students (5 occurrences), improves instructional practice (7 occurrences) and melds competence and quality performance with professional growth (8 occurrences). Figure 9 shows the breakdown the 12 elements of the LRC Model.

	Performance Measured against Clearly Articulated Standards	Multiple Sources of Data	Collaboration	Effective & Efficient	Account for Ability and Developmental Level	Data Collected Over Time	Individualized Instructional Improvement Program	On-going	Differentiation	Improves Instructional Practice	Melds Competence and Quality Performance with Professional Growth	Improve Educational Experience of Students
Total Citations	23	37	31	17	10	17	18	30	9	7	8	5
Total Sources	13	10	9	8	7	7	7	7	6	6	6	5

Figure 9. **Number of Sources Vs Number of Citations Referencing Concepts from the Review of Literature**

Communication, with 38 occurrences and teamwork, with 33 occurrences were the highest ranked elements out of the six categories that make up the Florida Virtual School Model. Figure 10 illustrates the high degree of separation between the highest and lowest ranked elements.
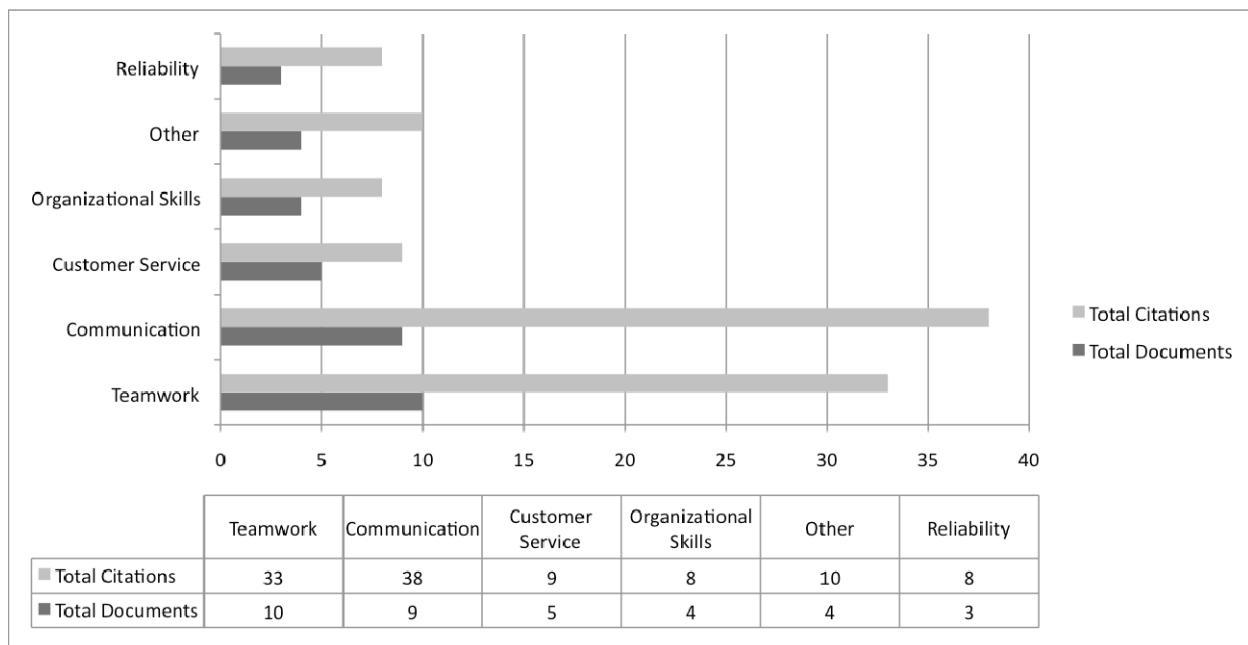
Figure 10. **Number of Sources Vs Number of Citations Referencing Concepts for the FLVS Model**

The Southern Regional Education Board Model consists of three broad categories. The areas of Online Teaching and Learning Methodology, Management, Knowledge, Skills and Delivery (28 occurrences) and Academic Preparations (27 occurrences) out ranked Content Knowledge and skills for Instructional Technology (See Figure 11).
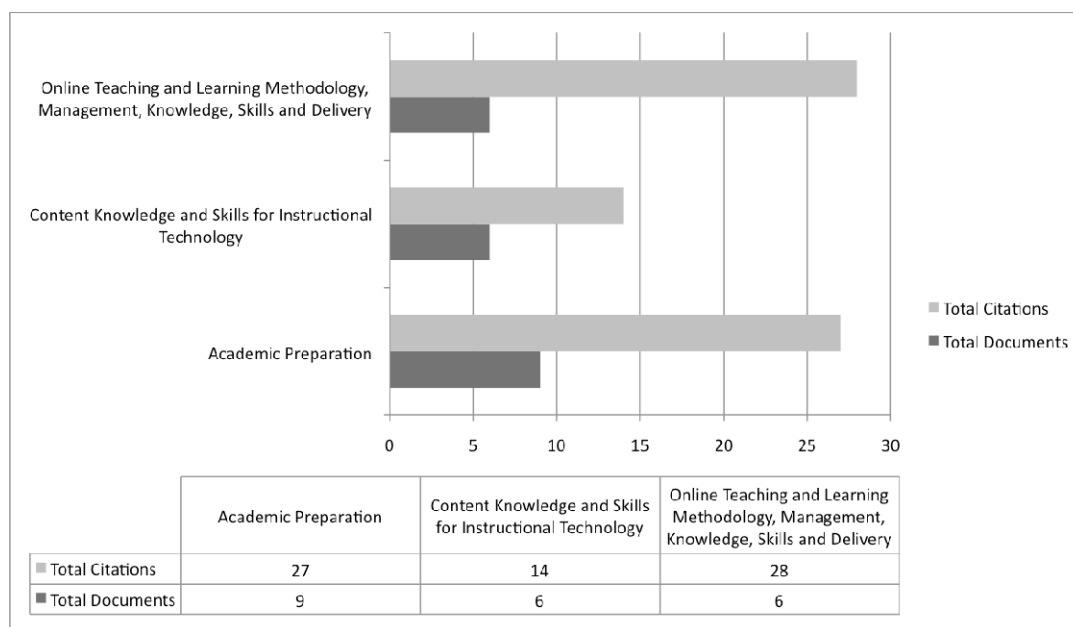
Figure 11. **Number of Sources Vs Number of Citations Referencing Concepts for the SREB Model**

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When viewing the sources of evidence data by school, it was found that Schools B, D and E, were linked most often to the LRC model with 18, 40 and 33 sources (Figure 12) and 41, 115 and 56 citations (Figure 12) respectively.

	LRC	FLVS	SREB
School E	33	21	14
School D	40	12	6
School B	18	2	1
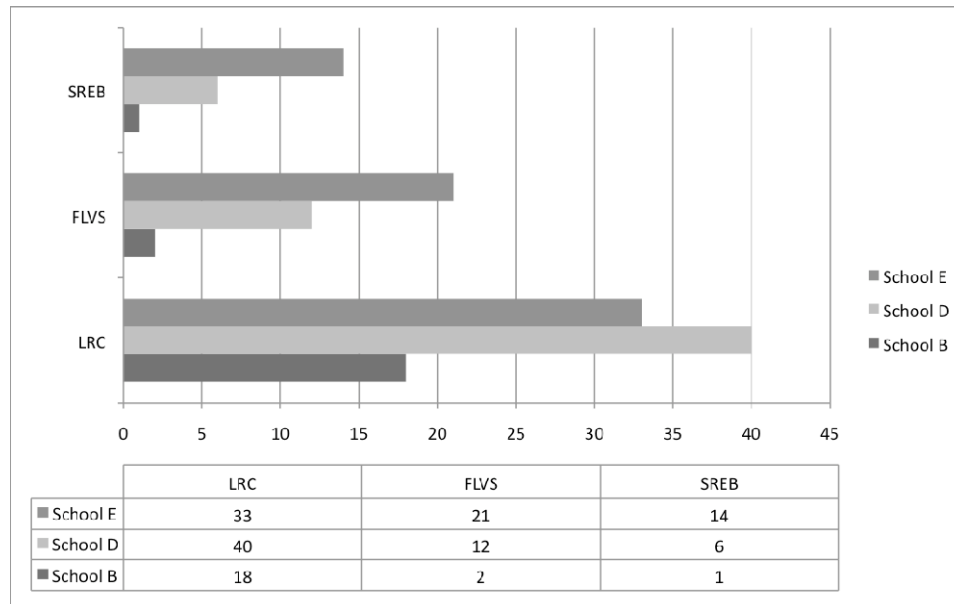
Figure 12. **Number of Sources of Evidence Containing Concepts/Elements from Supervision Models**

	LRC	FLVS	SREB
School E	56	68	55
School D	115	33	13
School B	41	5	1
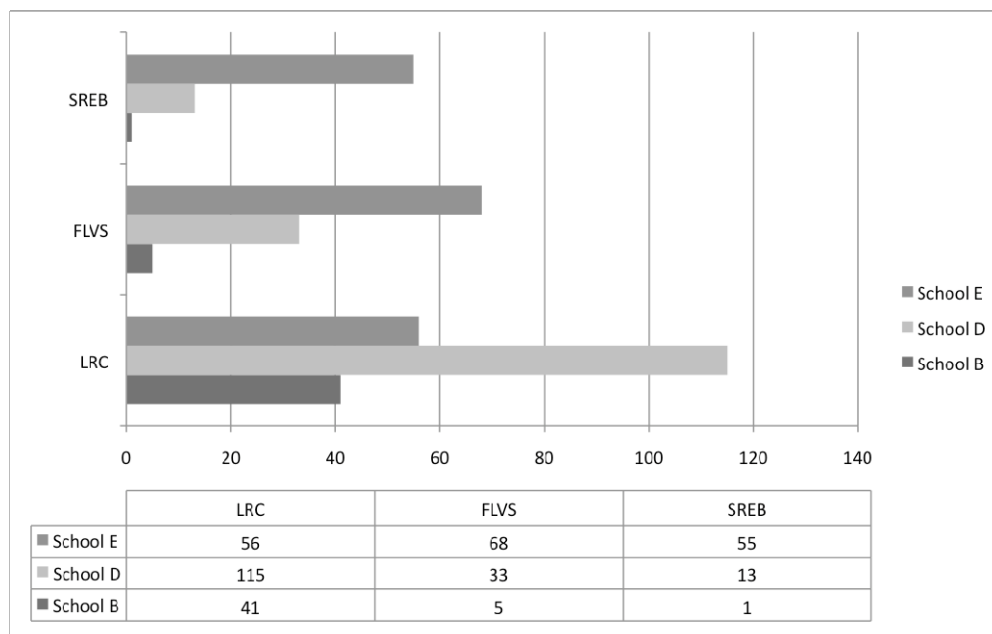
Figure 13. **Number of Citations Found in Sources of Evidence Containing Concepts/Elements from Supervision Models**

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5.0   DISCUSSION AND INTERPRETATIONS

5.1   RESPONSE RATE

Concerned about the response rate for the study and the level to which the findings could be extrapolated to the full population of cyber schools in general, the researcher sought to justify what may be considered a low response rate: deeming the data inconclusive or of no value. To this end, he conducted a short and informal investigation of other dissertations that focused on cyber/virtual schooling.

The investigation consisted of an analysis of the search results from ProQuest Dissertations and Theses (PQDT). The PQDT contains more than 2.3 million entries from over 1,000 graduate schools from around the world. The database provides abstractions of the documents and beginning with publications completed in 1997, the database provides online access to the full text file.

The search string (cyber school) OR (virtual school) was entered into the system and yielded a total of 41 dissertations and 3 theses documents. The results were sorted in descending order from the most current (2008) to the most dated (1995). As the researcher began the initial inspection of the result titles and abstractions, he noticed the documents could be categorized most effectively by organizing them according to the focus of the study. The dissertations were separated into four groups: U.S. Based (studies investigating schools from all 50 states); State

Based (studies investigating all schools in a single state); PA Based (a subset of State Based focusing on PA); and School Based (studies investigating a single school or a program within a school). School Based programs received the bulk of the researchers' consideration with 27 of the 44 results. Next in line were studies that focused on State Based initiatives (9) followed by U.S. Based (3) and PA Based (1). The 4 remaining studies were deemed unrelated.

The majority of the State and School based studies were reported as "case study research". These studies focused on a single school or a program within a school and therefore participation rate was not a factor. The PA Based study examined Pennsylvania Cyber Charter Schools. All PA cyber charter schools were invited to participate however, only 9 of the 11 schools contributed (Sherbondy, 2008), which is nearly the same participation rate this researcher drew from the state of Pennsylvania.

Of the three U.S. Based research projects, one involved a case study of 10 schools across 10 states. The researcher (Hoge), with the assistance of a virtual charter school Education Management Organization (EMO), hand selected the 10 schools based on a set of criteria fitting to the study (Hoge, 2008) again making participation rate a moot point. The second U.S. Based study surveyed 133 Catholic high school principals and achieved a 66% response rate (Heidlage, 2008), which is considerably higher than the 9% effective response rate of this study. A possible explanation (and complete speculation on the part of the researcher) for the higher response rate may have something to do with the fact that the population of Catholic high school principals is not studied very often. This assumption is premised on the fact that only 1 of 44 studies found in the original search focused on Catholic high schools. Additionally, one may hypothesize that the study had a high degree of personal importance to the principals because they feel by offering credible cyber programs they can make their schools more attractive to students and parents and

perhaps felt that by participating in the study they could be nationally recognized for their achievements.

The final study, and perhaps the one most closely related to the population sampling used for this research, investigated cyberschool finance. Like the researcher, Bearden (2008) used the North American Council for Online Learning (NACOL) as a primary source to generate a list of cyber schools. Bearden invited 198 schools to participate but yielded only 18 respondents, a 9% response rate and therefore concluded that the data were inconclusive and may not be used to make any inferences upon the general population of cyber schools.

As noted in section 4.1, the researcher built a database of 203 U.S. based cyber schools from a variety of sources including NACOL, ISTE, NCES, USDE, SETDA, SREB and Dr. Cathy Cavanaugh of the University of North Florida. The results of the outreach effort yielded 65 total responses for a 32% overall response rate. Thirty responses were submitted via the online survey and 35 responses were submitted through email or reported over the phone. Of the 35 email responses, 19 reported that they are not an online school, 13 said they were not interested in participating, 1 reported that they only do online tutoring, 1 reported that they have no live teachers, and 1 reported that most of the content is delivered in a traditional classroom. Of the 30 respondents that submitted the survey, 26 answered the filter question positively, 4 replied that they did not use the Internet to deliver 80% or more of their instruction and 7 completed fewer than 10 items on the survey yielding an effective response rate of 9%.

Reflecting on the progression of the study, perhaps a more concentrated examination, such as what has been demonstrated as *typical* when studying various elements of cyber schooling by the several scholars mentioned above, would have made for a more convincing argument when it comes to transferability of the findings. A more intimate study focusing on Pennsylvania would have allowed the researcher to work with a more definitive list of schools.

Perhaps the results gleaned from studying this microcosm would have resulted in a deeper understanding of the supervision processes, which could then be inferred to other schools across the nation. However, as pointed out by the research committee in the planning stages of this study, a more narrowed focus on Pennsylvania schools may have resulted in less participation for fear of their school being singled out resulting in even less participation. In addition, perhaps the low response rate could be affiliated with the fact that there have been more than 40 dissertations studying the cyber school population over the past eight years. This, combined with the numerous other research requests (assumed based on the popularity and newness of the topic), the cyber schools may reluctant or tired of participating in such studies.

It is the belief of the researcher that there is much to be gleaned from the efforts put forth by the participants of this study and that the resulting data could be used to affirm or improve the supervision practices of cyber schools in Pennsylvania and across the United States. The next section addresses each research question by presenting supporting data from this research project in a discursive format allowing for an exchange of views between the author and the reader versus laying claim to factual certainties.

5.2   RESEARCH QUESTION 1

What are the recommended practices of supervision in U.S. based traditional and cyber schools?

Section 4.2.1 and 4.2.2 provide a snapshot of what contemporary writings suggest about supervising teachers in traditional and cyber environments respectively. Foremost, it is evident that the practice is necessary and important. This assertion is supported in the scholarly writings of Alfonso, 1997; Danielson & McGreal, 2000; Darling-Hammond, 2000; Duke, 1990;

McLaughlin, 1988; Nolan & Hoover, 2005; Rice, 2003; Starratt, 1997 and is further substantiated by the data gleaned from this study. In combination, various data elements from the survey, document reviews and guided discussions could be interpreted as supporting the claim supervision is necessary and important. Consider the following evidence.

A summary of the survey data reveal that most participating schools have consulted with various authorities on the topic of supervision and have a written supervision policy (7 out of 7 or 100% PA, 9 out of 12 or 75% Other). They agree that their teachers are assessed against clearly articulated performance standards (5 out of 7 or 71% PA, 9 out of 12 or 75% Other), that supervision improves the quality of instruction (6 out of 7 or 86% PA[14], 11 out of 12 or 92% Other), and supervision practices raise student achievement (5 out of 7 or 71% PA[15], 10 out of 12 or 84% Other). Furthermore, most participating schools report that they work with teachers (formally or informally) more the 2-4 times per year (4 out of 7 or 67% PA, 10 out of 12 or 84% Other), collect data over time (19 out of 19 or 100% All), and have regularly scheduled content team meetings (7 out of 7 or 100% PA, 10 out of 12 or 84% Other). In addition, they report using regularly scheduled calls (7 out of 7 or 100% PA, 8 out of 12 or 67% Other) and emails (19 out of 19 or 100% All) from the supervisor, providing as needed/on-demand training and support (7 out of 7 or 100% PA, 11 out of 12 or 92% Other) and engaging in pre- and post-observation conferences (7 out of 7 or 100% PA, 7 out of 12 or 58% Other). School D believes so deeply in the necessity and importance of quality teaching they wrote into their supervision policy a plan linking knowledge, skills and success of students to teachers' salary. Additional

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[14] 57% of PA schools reported in the survey that they agree however, clarifications were made during the guided discussions indicating two additional schools believe supervision improves the quality of instruction yielding a 86% response rate for PA schools.
[15] 43% of PA schools reported in the survey that they agree however, clarifications were made during the guided discussions indicating two additional schools believe supervision raises student achievement yielding a 71% response rate for PA schools.

evidence from the guided discussions and document reviews supporting the argument of the necessity and importance of quality supervision lies in the great amount of time, attention, and detail School E has allocated to the process of supporting their teachers. School E submitted 11 documents that together outline the strategies they incorporate to continuously support and evaluate their teachers from the very first day of orientation and throughout their employment. The final, and perhaps most compelling verification is the emphasis the CEOs placed on the answer to the guided discussion question, Do you believe your supervisory practices are designed to improve instruction and raise student achievement? "Yeah!" said School D's CEO, "that has been the main thrust here that I have used to improve the quality of instruction and to improve our test scores" (School D Guided Discussion, p. 1). And, "Absolutely!" exclaimed School B's CEO, "And both have this past year! Our TEDF is about evaluation and then supporting them to grow" (School B Guided Discussion, p. 1). The evidence cited is compelling and should lead one to agree that supervision is necessary and important. If one accepts this argument, then the next logical question is: what is quality supervision?

Section 4.2.1 reported on contemporary writings focusing on supervision of teachers in a traditional K-12 arena. The authors suggest that multiple considerations and approaches are available and that the most successful strategies include: promoting active involvement through individualizing/differentiating the supervision/evaluation process; using multiple sources of data that are systematically collected over time; involving collaboration to create a system where ideals such as trust, sharing, and reflection are combined with tools that are aligned to the strategic goals of the district; linking supervision with staff development and evaluation to assist teachers in becoming more resourceful, informed and skillful; using the most appropriate and skilled person(s) to act as coach, mentor, supervisor and evaluator and incorporating efficient and creative use of time (Anderson, 1993; Costa & Garmston, 1994; Danielson & McGreal,

2000; Eisner, 1983; Glickman, 1985; Instructions for use of PDE 426 427 and 428, 2003; Kaye, 2004; Lieberman, 1995; McQuarrie & Wood, 1991; Nolan & Hoover, 2005; Pajak, 2002; Tucker & Stronge, 2005). Section 4.2.2 provided a description of what scholars in the field of e-supervision summarize as being important for quality supervision in a virtual world. The SREB and FLVS place high priority on teacher accountability, support of the teacher, using multiple sources of data for evaluation, communication, content knowledge, and the appropriate use of technology tools. They also both suggest many of the same characteristics prominent in traditional supervision models such as individualizing and differentiating the evaluation and support strategies; promoting active participation involving collaboration and teamwork; using multiple sources of data that are systematically collected over time; aligning supervision and evaluation with the strategic goals of the school; linking evaluation with staff development; providing professional development for supervisory staff; and using efficient, effective and creative devices to improve student achievement.

Continuing the conversation, a good cyber teacher supervision model may then be defined as: a collaborative, on-going, effective and efficient process, delivered online through appropriate technology tools that improves the instructional practice of teachers and the educational experience of their students by using multiple sources of data collected over time to create an individualized instructional improvement program that melds together competence and quality performance with professional growth of teachers to assist them in becoming more resourceful, informed and skillful. So, what might this look like? Section 5.3 moves the discussion from what is thought to be quality supervision practice to what is presently occurring in a few U.S. Based cyber schools.

5.3 RESEARCH QUESTION 2

What is the nature of current supervisory practices in U.S. based cyber schools?

The average teacher to supervisor ratio is 13:1 (16:1 in PA). Most schools (7 out of 7 or 100% PA, 7 out of 12 or 58% Other) have their supervision policy/plans in a formal written document. The schools reportedly consulted a variety of resources such as state guidelines, published works from educational books, journals and organizations, graduate course work and traditional school models when developing their policies. Most of the participating schools agree that their teachers' performance is measured against clearly articulated performance standards (5 out of 7 or 71% PA, 9 out of 12 or 75% All) and report evaluating their teachers in the areas of planning and preparation, instruction, learning environment, and professional responsibility (100% PA, 67%, 92%, 92%, 83% Other Respectively).

From these data, one may deduce that the participating schools are well equipped and have a solid structure in place to provide quality supervision. Some may consider these results logical as many of the schools are affiliated with a public school district or are a public charter school unto themselves, and as such, must operate within the rules and regulations set forth by state and local authorities. For example, in Pennsylvania the charter school application requires a written statement explaining the standards for teacher performance, how teachers will be evaluated, and the professional development opportunities that will be available to the teachers. In addition, Pennsylvania teachers are required by law to achieve a satisfactory rating on their annual evaluation (22 PA Code Chapter 49) and accumulate 180 Continuing Professional

Education (CPE) hours every 5 years in order to maintain their teaching certificate (ACT 48 of 1999). Furthermore, Pennsylvania school districts are required to prepare a Professional Development Plan as a part of their 3-year strategic planning process. Assuming other states have similar requirements, it seems rational that these practices would carry over to the virtual world, as the administrators running the virtual schools would be familiar and comfortable with the policies and documents of the traditional schools and would apply them to their new schools.

Previously, supervision was discussed as both important and necessary. One may surmise that supervision is an important issue for the schools in this study as well. One consideration as to why they feel supervision of their teachers is critical may be because cyber schooling is relatively new and the teachers need the assistance. The principal of School E commented that the administration has to help them "refit the tool belt of their instructional practices when it comes to online" (School E Principal Guided Discussion Session, p. 3). He elaborated saying, "even if a teacher is a veteran classroom teacher, they still need the support because it is not like anything they would have experienced in a brick and mortar classroom or would have prepared for at their teacher college (School E Principal Guided Discussion Session, p. 3).

Further validation for this argument lies in the purported investment of staff and time the schools have in place to ensure the success of their teachers. Most of the schools participating in this study (4 out of 7 or 67% PA, 9 out of 12 or 75% Other) report that they work with teachers formally and informally more than 2 to 4 times per year and some (2 out of 7 or 29% PA, 2 out of 12 or 17% Other) as much as 10 times per year. In addition, most participating schools indicated that the principal is primarily responsible for supervision, especially for official state reporting and for certification guidelines; however, many call upon other individuals such as peer mentors, instructional supervisors, and team leaders. These individuals have a diverse set of

responsibilities, but most include performing observations and evaluations and providing support.

Concurrently, the importance level of supervision is elevated because of the high expectations governing bodies have placed on all public schools through the No Child Left Behind legislation and Adequate Yearly Progress benchmarks. Because of their relative newness on the educational scene, cyber schools are under tremendous public scrutiny and so their supervision policies, plans, and practices specify how they ensure competence and quality of their teachers. The schools are being held accountable for student achievement and therefore they feel the need to have a plan to improve performance and document the steps they have taken to achieve their goals.

Lastly, according to the survey, the majority of the respondents report their supervision practices have a positive impact on quality of instruction (4 out of 7 or 57% PA, 11 out of 12 or 92% Other) and student achievement (3 out of 7 or 43% PA, 10 out of 12 or 84% Other). Perhaps the reason the schools seem to have placed such a high level of importance on supervision and have made such a large investment in staff and time is because they intrinsically believe as Nolan and Hoover (2005) suggest; quality supervision will enhance the educational experiences and learning of all students.

Participating schools report engaging with a wide variety of electronic tools for the purposes of supervision. Of the tools used by the schools for supervision purposes, a few were reported to be more widely used and found to be more useful. Email topped the list of tools as the most widely used and most useful tool with 6 out of 7 (86%) of PA school administrators and 11 out of 12 (92%) of Other school administrators reporting usefulness levels of 43% and 66% respectively. Other tools that received top rankings include video conferencing (6 out of 7 or

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86% PA, 1 out of 12 or 8% Other), electronic observation tools (5 out of 7 or 71% PA, 7 out of

12 or 58% Other), and instant messaging (4 out of 7 or 57% PA, 6 out of 12 or 50% Other).

The data support the notion that the participating schools have a firm understanding of

the importance of communication: a characteristic of supervision considered essential by experts

in the field. This is evidenced in part by the fact that the tools reported as being used most often

and found to be most useful focus on communication; corroborating the writings of Stronge and

Ostrander (2006), Starratt (1997) and Garman (1982). Strong and Ostrander (2006) contend that

systematic communication is an essential element of supervision. As noted earlier in the

literature review, the purpose of supervision is usually linked with helping teachers learn about,

reflect on, and improve upon their practice. *Learn about* and *reflect on* requires on-going

communication and the schools indicated in the survey that a multitude of strategies such as

personalized emails; timely, constructive and specific feedback; and as needed/on-demand

training and support are employed, further substantiating the opinion. According to Starratt

(1997) supervisors should be concerned with generating trust, building community, facilitating

teamwork, networking teachers, and building a culture of professionalism. Garman (1982)

asserts that to improve the quality of instruction, and thereby raise student achievement, teachers

and supervisors are required to work as partners, share expertise, and engage in instructional

dialogue, all of which are communication centric. In direct alignment with these ideals, the

schools expressed through the survey that they incorporate various communication based

practices such as learning communities and supervisor/teacher collaboration into their model of

supervision.

The data also support the idea that supervisory practices of the participating cyber

schools are highly aligned to the characteristics defined in the Literature Review Concepts

Model (LRC). Two strategies, data collected over time and personalized emails, were reported

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to be used by 100% (19 out of 19) of the participating schools and the schools rated the information gleaned from these two strategies to be somewhat to very useful (6 out of 7 or 86% PA, 8 out of 12 or 67% Other for Data; 5 out of 7 or 71% PA, 8 out of 12 or 67% for Email). The next highest ranked strategies include analysis of multiple sources of data and as needed/on-demand training and support (7 out of 7 or 100% PA, 11 out of 12 or 92% Other) with usefulness ratings of 86% PA, 67% Other, and 86% PA, 50% Other respectively. Most schools report that student work/test scores (4 out of 7 or 57% PA, 8 out of 12 or 67% Other), classroom observation using archived data (4 out of 7 or 57% PA, 7 out of 12 or 58% Other), input from students (2 out of 7 or 29% PA, 9 out of 12 or 75% Other), teacher self reflection (4 out of 7 or 57% PA, 6 out of 12 or 50% Other) and input from parents (3 out of 7 or 43% PA, 7 out of 12 or 58% Other) were the most widely used sources of data. The schools in the study place a great deal of emphasis on using multiple sources of data over a period of time; collaboration and teamwork; communication; and online teaching and learning methodology, management, knowledge, skills and delivery: indicating that their policies and practices are solidly grounded in the research.

The Pennsylvania schools that participated in phase 3 of the study contributed additional detail through the review of documents and the guided discussions: helping to paint a more intimate picture of supervision processes in the world of cyber education in the Commonwealth. Three types of documents were submitted: one was classified as a policy document, eight were classified as planning documents, and six were placed into the instrument category. All of the documents were clearly titled and marked with the school's name. Revision dates were included in 2 of the 14 documents and 4 of the 14 contained stated goals and were described as being created based on traditional supervision policy. Academic preparation was mentioned in one document from School E. The requirements for the number of observations required were

included in two of School D's documents but was never mentioned in any of School E's documents. Under methods employed, formal and informal observations, workshops, training seminars, and conferences were included in both schools documentation. In addition, School D employs the use of a professional portfolio and a Knowledge and Skill-based Pay System as a part of their program and School E is heavily invested in teacher induction and peer mentoring.

The guided discussions provided additional insight into the use of the professional portfolio, the Knowledge and Skill-based Pay System, the peer mentoring process and other interesting and innovative practices. The CEO from School D reported that his teachers feel the portfolio is a professional development tool and is seen as another way to show they are improving and performing. Teachers are provided templates to follow so the process is standardized and fair. His teachers appreciate this practice because they know their evaluation is not based on just one or two observations. He believes the true benefit of the portfolio is that the teachers have input regarding the supervision and evaluation process making it a true collaboration. The CEO explained that his teachers are put in the role of data collector and are active participants in the evaluation process. The only problem with the professional portfolio process identified by School D is the fact that it can be time consuming. The School D CEO, when elaborating on the monetary bonus system, commented that it has everyone focused on student achievement and making AYP. They pay teachers for advanced degrees in certification area, for national board certification and for the school achieving AYP. He explained that it has everybody working to improve student achievement. The one issue they had to resolve was that they had some teachers come for bonus and then leave for another job. They have since modified the policy so this is no longer possible.

The CEO from School D also remarked that he feels supervision is the same as in a brick and mortar school: The main difference is that it is conducted online from an office rather than in

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a classroom environment. He prefers observing the lessons live from the virtual perspective of the teacher because it gives him a better sense of what is going on in the classroom. He sometimes uses the archived data, but felt viewing the lessons from an asynchronous perspective is inferior because some of the data are missing from the recorded sessions. He feels it is better watching the teachers interact real in real time from a virtual perspective because he can watch the teachers monitor and adjust. He does not sit in the same physical space as the teacher or the student, but sits as a student in the virtual classroom because he thinks it is less disruptive. He also questions how would one go about picking the student. He indicated that he sees more benefit of seeing the students as a group, as a collective whole, not an individual and does not think it would be valid to sit with one student. Bottom line for school D, every year since the implementation of his plan (the plan was in its 3rd year at the time of the guided discussion) the school has seen dramatic increases in PSSA test scores. His school is now meeting AYP in 19 of 21 categories: whereas before the new policy was enacted the school was only meeting 3 of 11.

During the guided discussion interview, School E clarified that the principal was responsible for the formal evaluations. However, the assistant principal, instructional supervisor, department chairs, and peer mentors were incorporated into the process at various levels: creating an on-going support system that allows for collaboration and professional growth. School E conducts most of their observations from the physical perspective of the teacher as most of their teachers work from a central location. They explained that the assistant principals and instructional supervisors sit next to the teachers and this allows them to review, evaluate, and support every day, on-demand, as needed. School E's support system was designed to be collaborative in nature: allowing several opportunities for teachers and supervisors to dialog about areas of improvement. They contend that these opportunities for collaboration allow them to focus and improve the quality of instruction. School E pays special attention to their newly

recruited teachers, providing them with mentors and placing them in a two-year induction program where they have access to a plethora of additional supports. Moreover, the new teachers receive feedback on their performance at least six times throughout the year through informal walk-throughs, mentors observing mentees, mentees observing mentors, and formal observations. From the various observations, the supervisors work with the teachers to develop an individual improvement plan based on the specific needs of the teachers.

The Pennsylvania schools seem to be equally focused on assessment and assistance, are heavily invested in staff and time, and practice interesting and innovative approaches to supervision. Their methods are well documented and they have reported positive results. Based on the researcher's definition of a good cyber teacher supervision model and the respondents self reported information, it could be suggested that the participating schools practice quality supervision. In addition, it appears that the schools practice supervision in a fashion similar to the LRC Model, which is indicative of supervision in conventional brick and mortar schools. Therefore, one could argue that their strategies are solidly grounded in research.

Interestingly, two of the PA schools consider the supervision model being practiced in their cyber school is actually better than the practice of supervision in the schools of their brick and mortar counterparts. They contend that the process is more intensely focused on the needs of the teachers and the students. They assert that virtual supervision is not as disruptive to the lesson because the observer is less visible in a virtual room and the dynamics of the class do not change as much as a result of their presence. Furthermore, they believe that the teachers' view of supervision is more positive and indicated that the teachers appreciate the collaborative nature of the process. One school even remarked that his teachers have indicated to him that this is the first time they are actually getting any real feedback and they appreciate the constructive criticism and support. Perhaps there are lessons the traditional schools could learn from the

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cyber schools. Whether it is the low ratio of teachers to supervisors, the types of people participating in the process, or the communication tools used for supervision, these data may be evidence that there is something to be gained from applying these findings to a traditional school environment.

5.4   RESEARCH QUESTION 3

What is the difference between supervision in a traditional environment and supervision in a cyber environment in U.S. schools?

Demographically, the average number of teachers to supervisors in the schools studied varies when compared to the average in all public schools across the US. This is illustrated by comparing the teacher to supervisor ratio found in this study to the national average for the teacher to principal ratio as reported by the National Center for Educational Statistics (NCES). This comparison is justified by the survey data that indicate that the principal is primarily responsible for supervision. The average teacher to supervisor ratio for this study was 14:1 for all schools and 16:1 for Pennsylvania schools. According to the NCES Schools and Staffing Survey, 2003–04, the national average for the teacher to supervisor ratio is 37:1 (U.S. Department of Education, 2006). Narrowing the focus, 8 of the 19 schools that participated in this study fall into the charter school category and when comparing this subset (16:1) to the national average (19:1) the numbers are aligned more closely. Figure 13 illustrates the comparison of the study data for teacher to principal ratios across school types and levels.

School Type		
■ All Study School	14	
■ PA Study Schools	16	
■ Secondary	50	
■ Elementary	34	
■ Charter school	19	
■ Traditional public	38	
■ All public schools	37	
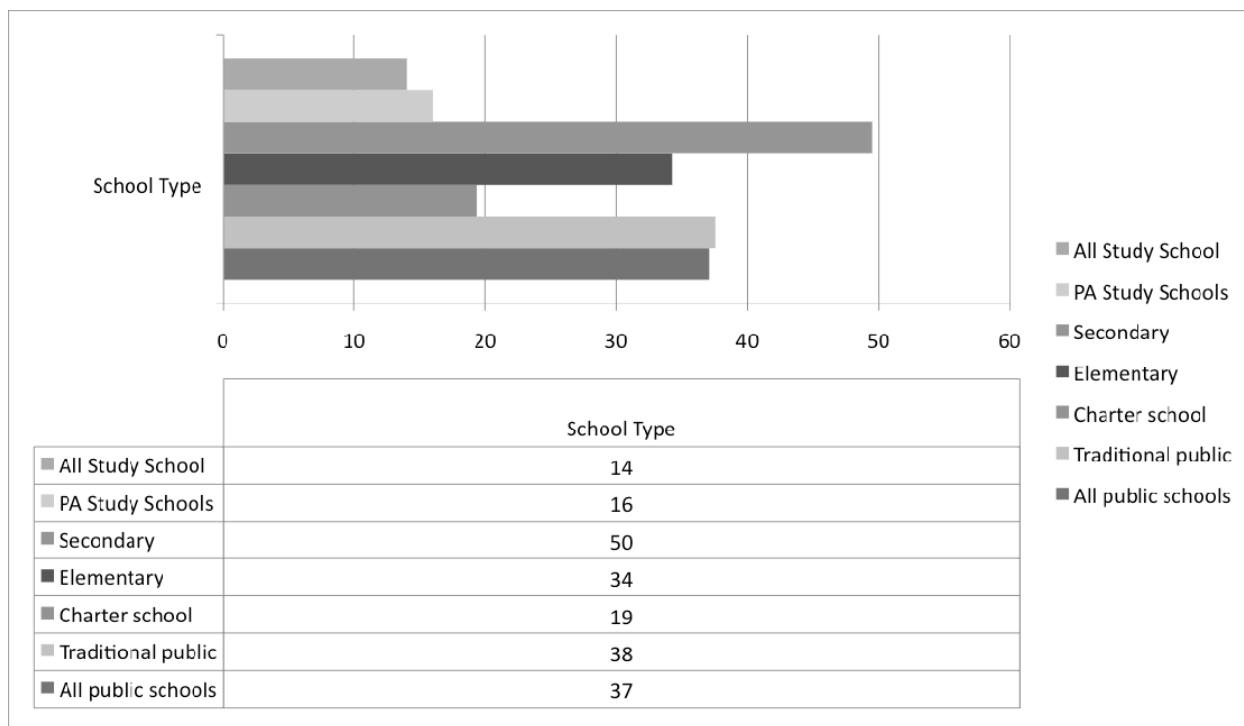
Figure 14. **Comparison of teacher to principal ratios.**

Low teacher to supervisor ratio should allow supervisors to devote more time for conducting supervisory duties. This extra time could afford the supervisors to use a more individualized approach and may explain why the schools report high levels of success and teacher satisfaction.

Other differences between supervision in a traditional environment and supervision in a cyber environment seem to lie mostly in the perspective the observer uses to view a lesson and the technology used to conduct the observation. Interestingly, the CEO at School D remarked that supervision is not very different in the virtual school than it is in the traditional brick and mortar school. He indicated that the only real difference is that it is done online from his office instead of being in a brick and mortar classroom. So, what exactly does it mean to observe online? Participants of the study were asked if they observed from any of five different perspectives:

- Classroom observation using **archived data** such as teacher/student interactions and emails

- Classroom observation from **<u>synchronous</u> virtual perspective** of online classroom such as watching a live virtual classroom

- Classroom observation from **<u>asynchronous</u> virtual perspective** of online classroom such as a review of a recorded online classroom session

- Classroom observation from **physical perspective** of the **<u>teacher</u>** meaning sitting next to the teacher while he/she teaches in a virtual classroom or is actively posting content on a learning management system

- Classroom observation from the **physical perspective** of the **<u>student</u>** meaning sitting next to a student while he/she participates in a virtual classroom or is actively engaged with the content on a learning management system

As indicated earlier, most of the participating schools incorporate the use of Classroom observations using archived data. This differs from the traditional environment in that most often the data for an observation is gleaned from a live classroom visit and is usually not recorded and archived for later review. Synchronous virtual and asynchronous virtual observation perspectives are obviously different from traditional supervision because the observation is done completely online. In this type of observation, the observer may or may not see the teacher or the student and thus it makes sense that the biggest difference reported here was the loss of visual cues. This means supervisors of cyber teachers need to become familiar with a different set of *look-fors* or *tells* that indicate the presence of quality instruction. Perhaps instead of reading body language and assessing the organization of the physical space, supervisors need to be attune to *reading in-between the lines* of a chat session and how the

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teacher organizes and makes use of the virtual breakout rooms and page layout and design of their learning management system space.

Closely tied to the fact that supervision is conducted mostly online, another difference to consider is the amount of information that is readily available to an observer in a virtual environment and the fact that the information is recorded. As we heard from Dr. Peck in the literature review,

> There is, in fact *a lot more* [italics added] information for anyone who wants to do a thorough evaluation. Just about *everything* [italics added] that happens in an online class is available. You can see every communication between a teacher and a student, every assignment given, every student response, and so forth. (K. Peck, personal communication, October 29, 2003)

Because the information is readily available, easily accessible and, most importantly, recorded, three interconnected differences should be highlighted.

First, drawing on the speculations of Amodeo and Taylor (2004) regarding the use of IP-based video conferencing and streaming video technology, consider the ease in which supervisors in a virtual environment can use the recorded lessons to shift time, reduce the risk of compromising lessons due to the presence of an observer, and enhance professional development. The time shifting capabilities of the recorded lessons allows for greater flexibility in scheduling and reviewing lessons. To conduct this same type of scenario in a traditional environment, one would need to set up a video camera or a similar technology to record a lesson. At the very least, this practice could be considered inconvenient and time consuming. Most detrimental would be the risks associated with reducing the validity of the lesson due to the obvious presence of the recording device. Whereas in the virtual environment, it is an inherent part of the process consuming no additional time and assuming little risk.

This leads to the second related difference in that one may argue that greater lesson validity is achieved in a virtual environment. When conducting an observation using archived data or a recording of a virtual classroom activity, the lesson is not compromised by the presence of an observer at all. Evidence corroborating this claim is found in the guided discussion with a PA CEO. He indicated to the researcher that he felt that it was less intrusive to observe a virtual classroom verses its brick and mortar counterpart. Obviously further research would be required, but perhaps this statement gives credence to the argument indicating it may be less intrusive to observe from a virtual synchronous perspective than sitting in on a lesson in a physical brick and mortar classroom setting.

Third, and perhaps most significant, reflect for a moment on the potential of placing the recordings of the lessons in a database to be retrieved and used in professional development activities. As pointed out by Rose, Meyer, Strangman, and Rappolt (2002) digital media is flexible – meaning it can be manipulated almost infinitesimally. It is versatile – in that it can present text, images, sound, graphics, video or any combination, allowing users to work in a style that is preferred and beneficial to how they process and learn information. And it is transformable – allowing the content to be displayed in multiple variations of size, color, volume, with graphics on or off, and speech fast or slow at a high or low pitch. For a creative mind, the possibilities would be endless.

According to the survey data, instruments used by the cyber schools for observation were reported to be only slightly different from those used by traditional schools. Most of the schools indicated that their observation instruments were modeled after various published writings including state guidelines, unnamed research and personal experience. For the most part, the alterations were enacted to measure the teachers' ability to use the available technology tools and how the teachers made use of them for instruction. For instance, School E's modification to the

PDE observation form includes one quality indicator under planning and preparation that speaks to technology. It requires the observer to rate the teacher on their awareness of resources, material, or technology available through the school. School D's observation from was also based off the PDE observation from with additional influence form the works of Charlotte Danielson. Here, technology was addressed once: asking the observer to rate the teacher on their knowledge of resources for teaching and learning. FLVS never mentions technology. Out of all of the documents reviewed, the SREB model mentions the most about technology. Their form has a category called Content Knowledge and Skills for Instructional Technology. Contained within the category is one subheading regarding prerequisite technology skills to teach online. A second category called Online Teaching and Learning Methodology, Management, Knowledge, Skills and Delivery contains five subcategories. The five subcategories are:

- Planning and designing lessons that incorporate strategies to encourage active learning, interaction, participation and collaboration *in the online environment*

- Providing *online leadership* in a manner that promotes student success through regular feedback, prompt response and clear expectations

- Modeling, guiding and encouraging legal, ethical, safe and healthy behavior related to *technology use*

- Experiencing *online learning* from the perspective of a student

- Understanding and being responsive to students with special needs in the *online classroom*

- Demonstrating competencies in creating and implementing assessments in *online learning environments* in ways that assure validity and reliability of instruments and procedures (Southern Regional Education Board, 2006)

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What if the words *online* and *technology* use were removed from these indicators? Would the instrument be as effective if the observer and the teacher just made the inference to the virtual-ness of the experience? One may be inclined to suggest, when done properly, the technology should be invisible and the focus should be on evaluating and supporting quality teaching.

5.5   RESEARCH QUESTION 4

What needs and issues are identified by U.S. based cyber supervisors?

Survey items 18 and 19 collected information about barriers, needs, and issues facing cyber schools in the area of teacher supervision. An error was made by the researcher regarding the language used in the Likert-type scale for survey item 18. Item 18 requested respondents to rate a series of statements according to the degree of difficulty they present to the process of supervision cyber teachers. Due to the high importance level of this item, the researcher created a single item electronic survey (Appendix J) and distributed it to all participating school administers. Only seven responses were received and therefore this particular set of data may not be of much value. At this stage, the researcher is hesitant to say anything about the struggles and challenges other than a follow up will need to be conducted. However, it is interesting to note that the majority that did respond indicated that the physical distance between the teacher and the supervisor, offering constructive feedback, the physical distance between the student and the teacher, offering content knowledge support in a virtual environment, using electronic tools to support teacher growth and development and the use of electronic observation tools for collecting data were not perceived as a barriers. Additional needs and issues were reported through survey Item 19. This open-ended item questioned participants on supervision struggles

and challenges. Professional development needs and a lack of time for supervision topped the list. Rapidly changing technology, staffing for mentoring and support, establishment of an observation instrument and communication were also mentioned. Unfortunately, the survey responses contained no elaborations on the specifics of the struggles and challenges: therefore, very little can be extrapolated from these data.

6.0   IMPLICATIONS, RECOMMENDATIONS AND CONCLUSION

6.1   RESEARCH QUESTION 5

What are the implications for future supervisory policy and practice in U.S. based cyber schools?

One of the primary goals of this study was to extend the body of knowledge in the field of K-12 teacher supervision. The intent was to provide insight specifically in the area of supervision of cyber teachers to build a foundation in which to base future policy, practice, and research. This study reported on what contemporary writers suggest is quality supervision, investigated current policy and practice of today's cyber schools, and offered an intimate look at how supervision of cyber teachers is conducted in a few Pennsylvania schools. It is the contention of the researcher that this goal has been accomplished and that the resulting data could be used to affirm or improve the supervision practices of cyber schools. Cyber school administrators could make use of the data from this study to compare and contrast their supervision model with the LRC Model. This would afford them an opportunity to evaluate their plans against contemporary writings in an unthreatening, time efficient, and cost effective manner. They could then examine the summary of current practices of cyber supervision from across the nation, analyze them for usefulness, and speculate whether or not the concepts could be successfully incorporated into their teacher supervision model.

Additionally, one may argue the data indicate communication is essential to the supervision process. This argument is supported by the writings of experts in the field of supervision and is affirmed by implications that can be drawn from study evidences associated with the types of tools study participants report using in their supervision processes. Nearly all of the tools used by cyber schools for supervision are, in their most basic form, instruments of communication. Likewise, nearly all of the strategies used, and data collected, have a communication focus. These clues might lead one to believe that communication between a supervisor and a teacher is essential and if done well has a high probability of enhancing the outcome.

The data also support the need to provide special training for supervisors. Supervisors of cyber teachers need to learn how to get the most out of the communication tools available to them. As mentioned earlier, they need to learn what information is most useful in determining quality instruction is taking place and how to realize when it is happening. For instance, since they cannot see body language and other visual cues, they need to become familiar with other look-fors or tells. These cues may come in the form of written words in an email to a student or perhaps as a non-verbal expression supplementing the vocal discussion in a virtual classroom session (e.g., an emoticon. Emoticons are often used in virtual meeting spaces to supplement the conversation much like the use of body language. Emoticons can help one ascertain the degree of active engagement in an online environment.) It is the opinion of the researcher that an understanding of these types of cues is essential to interpreting interactions in an online environment and supervisors would benefit from professional development in this area.

One may also contend that the data supports quality supervision is quality supervision no matter if you are in a traditional environment or in a cyber environment. This assertion is grounded in the fact that most observation instruments made little reference to technology. The

only exception was with the SREB evaluation instrument, but even they acknowledge that quality online teaching reflects the "attributes of any effective teaching, whether in the traditional classroom or online" (Standards for quality online teaching, 2006, p. 1). Included in this argument is an underlying presumption that the focus of the observation should be on quality teaching and should not rest with investigating technology. Of course, technology should be recognized as a part of the equation and one should understand that certain technologies are better suited for the work. However, as a result of this study, the researcher believes that perhaps the best observation instruments guide the supervisor to look for quality instruction by offering possible look-fors within each category and then recommend artifacts and quality indicators appropriate to the type of instruction. In this model, look-fors would remain steadfast no matter the educational platform, be it face-to-face, asynchronous, or synchronous. However, recommended artifacts and quality indicators for the various artifacts would need to change based on the delivery structure. For example, consider the trait of student participation and active engagement. Most would agree that this is an indication that quality instruction is occurring. Therefore, an observation instrument used to assess the quality of teaching in a synchronous virtual classroom would suggest that the observer look for this trait during the observation. It would then provide possible look-fors such as, *students contributed to the discussion by participating in an online chat session*. The artifact could be a transcript of the chat session and the quality indicator could be a series of rubric style descriptions that could be selected to indicate the quality of the actual interaction between and among the students and the teacher.

6.2   RECOMMENDATIONS

The ensuing paragraphs consist of recommendations based on the researcher's learning as a result of conducting this study. The recommendations are grounded in the data and are concepts or ideas the researcher believes deserver further consideration and would like to some day pursue on his own, or see a colleague investigate, thus adding to the body of knowledge surrounding this topic.

Because of the issues the researcher had in isolating a population of schools for this study, he believes a better mechanism for identifying, categorizing, and reaching types of cyber schools is necessary. When conducting research, it important to be able to accurately define or describe the concepts being studied. Without clearly defined terms, it is difficult to establish consistency of data and this can cause problems that result in confusion rather than adding to our knowledge. The National Center for Education Statistics (NCES) funded a task force and developed the Forum Guide to Elementary/Secondary Virtual Education (2006).   This collaborative effort between members of the National Forum on Education Statistics (the Forum), the State Educational Technology Directors Association (SETDA), and the Schools Interoperability Framework Association (SIFA) developed this document to be used as a reference tool for educational entities to begin the thought process around collecting data about schools, teachers, and students engaged in cyber instruction.   The guide provides recommendations for data collection, establishing the groundwork for identifying the data elements "necessary to meet the information needs of policymakers, administrators, instructors, and parents" (National Forum on Education Statistics, 2006, p. viii). The document makes use of the basic administrative structures as detailed by the North Central Regional Education Laboratory publication, Keeping Pace with K-12 Online Learning (Watson, J., Winograd, K.,

Kalmon, S., & Good, D. G. (2004) and further refines virtual education offering specific definitions for *schools*, *courses*, *classes*, and *programs*. In addition, they provide a detailed description on class management and available virtual education technologies elaborating on class pace (synchronous, asynchronous or a combination) and tools that can be used to virtual instruction. The major emphasis of the document is that decision makers need access to quality data to make accurate, reliable and cost-effective decisions about their virtual programs and that "unless these issues are address, the non-existent or inconsistent collection and reporting of virtual education information will have negative effects on the quality of data and decision-making at the classroom, school, district, state, and national levels" (National Forum on Education Statistics, 2006, p. 6). Therefore, the researcher recommends petitioning the National Center for Education Statistics to revisit this issue and begin collecting and reporting on the data elements as described in the Forum Guide to Elementary/Secondary Virtual Education.

As in many fields, the quality of communication is of vital importance, and in the specialty of cyber supervision, it is no different. The researcher believes this area merits special attention. The field would benefit from future projects that examine more closely the usefulness of the various communication tools in an attempt to ascertain where the most useful information can be found to assess and support teachers. This is important because, as has been discussed, there is an overwhelming abundance of data archived in online learning environments and we need to ascertain what data are most useful at determining whether quality instruction is occurring. The new data would allow one to speculate on a course of action for professional development for cyber administrators by providing valuable insight as to what the *look-fors, artifacts,* and *quality indicators* are for quality instruction and offer guidance on how cyber administrators could use their time most efficiently and effectively to support their staff.

The next recommendation pertains to details related to the perspective of an observation. Although the majority of the schools participating in this study primarily reported using archived data for the purpose of supervision, it is the belief of the researcher that there is an argument to be made for observing lessons from the physical perspective. Future studies could shed light on the benefits and disadvantages of monitoring how both students and teachers manage themselves in an online environment. The assumption would be there is much to learn about how teachers and students process online interactions that cannot be ascertained by viewing a lesson from a virtual perspective. This information could then be used to create professional development activities and courses. Likewise, there may be valuable information to be gleaned from viewing a lesson from the same physical space as a student. This information might be useful to the teacher as well as the online learner. Data from these types of observations may be used to design and develop student orientation programs, thus resulting in increased supports for their students and potentially raising student achievement. An obvious concern with this type of observation lies in the effects the presence of the observer might have on the dynamics of the lesson. Great care must be taken to reduce risks associated with observer impact. Another hardship that may be too difficult to overcome to make this a viable option is the actual physical distance between the supervisor and the student. No matter the outcome, the information would serve to inform the community of cyber administrators: further developing our understanding of the topic.

As with many research projects, the list of questions generated is often longer than the list of answers. As the researcher sifted through the study information he took notes of questions the data triggered but were not addressed in his study. The following is a list of these questions accompanied by brief explanations to provide additional clarity. They are provided here as a

springboard for anyone who wishes to further develop to the body of knowledge surrounding supervision of cyber teachers.

- The data from this study rely exclusively on self-reported information. Therefore, the question arises, what, if any difference, would there be if the study protocol included observations of supervisors conducting classroom observations? Would the intensity of the intrusion render the observation useless or would the researcher be able to notice useful traits the subjects themselves would not notice or think to report?

- Since many traditional schools are getting increasingly involved with cyber instruction, a study that investigated look-fors, artifacts, and quality indicators for this environment would be very beneficial. Along these lines, the field would benefit from knowing what measures these schools have in place to assess and assists the ranks of teachers who provide this service? A study such as this would prove especially valuable if it concluded with an electronic database-driven observation and assessment tool capable of prescribing an instructional improvement plan.

- This study focused entirely on the administrative side of supervision. To paint a more comprehensive picture of the nature of supervision in cyber schools, questions need to be addressed from the teacher's point of view to see how they align with the impressions of the administrators. Therefore, a logical next step would be to examine how the teachers feel about the quality of supervision in their schools.

- As we have come to know, there are many avenues for offering cyber education. This study took a broad approach and lumped information together from schools that use synchronous virtual classrooms along side schools that solely use an asynchronous approach to instruction. It might be beneficial to focus in detail on the differences

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between the two modes of operation to identify any unique characteristics that may assist school administrators in their particular mode of instruction.

- Of the instruments examined in this study, relatively few differences were found. Do observation instruments for cyber schools need to be different from their traditional school counterparts' or do we just need to modify the *look-fors* that provide evidence of meeting the standards?

- Due to the relative newness of cyber education, the researcher approached the subject from a traditional point of view. However, it might be interesting to examine the subject in the converse, asking how supervision tools and strategies used by cyber schools can be incorporated into the traditional schools to strengthen their supervision practices.

- A unique characteristic reported by one of the cyber schools was the use of a teacher merit pay system. Studies on merit pay yield mixed results (Alafita, 2003; Barnett, 2007; & Payne, 2006). It would be interesting to find out if any other cyber schools use merit pay and if they yield the same positive results as the school in this study.

- Coursol (2004) in "Cybersupervision: Conducting Supervision on the Information Superhighway" discusses the positive effects of Internet or IP-Base Personal Videoconferencing on supervision of student counselors. She states that IP-base personal videoconferencing has a variety of applications including individual supervision, group supervision, and case study. CaseNEX, founded at the University of Virginia's Curry School of Education, provides professional development opportunities to educators through an online, case-based approach. They use multimedia cases, or as they refer to them "slices of life", allowing them to form a "realistic connection between professional learning and the complex school environment (CaseNex). Since most everything in the virtual school is archived, a study investigating the cost/benefit relation and the

usefulness of the recorded lessons for professional development purposes would be valuable. Perhaps such a study could result in an educational partnership benefitting students and teachers as well as the vendor.

6.3 CONCLUSION

Although the data from this study cannot be automatically generalized across all cyber schools, the study serves as a foundation, expanding the knowledge base in the arena of school supervision, and providing a framework for future investigations specific to supervision of cyber teachers. In summary, a quality cyber teacher supervision model may then be defined as: a collaborative, on-going, effective and efficient process, delivered online through appropriate technology tools that improves the instructional practice of teachers and the educational experience of their students by using multiple sources of data collected over time to create an individualized instructional improvement program that melds together competence and quality performance with professional growth of teachers to assist them in becoming more resourceful, informed and skillful.

The schools participating in this study seem to be fairly well equipped and have a solid structure in place to provide quality supervision. They engage with a wide variety of electronic tools for the purposes of supervision and the data supports the notion that the schools have a firm understanding of the importance of communication. The supervisory practices of the schools are highly aligned to the researcher-developed Literature Review Concepts Model. They place a great deal of emphasis on using multiple sources of data collected over a period of time; collaboration communication and teamwork; and online teaching and learning methodology,

management, knowledge, skills and delivery - indicating that their policies and practices are solidly grounded in the research.

The differences between supervision in a traditional environment and supervision in a cyber environment seem to lie mostly in the perspective the observer uses to view a lesson and the technology used to conduct the observation. Special consideration should be given to the idea of recorded lessons and their ability to shift time, reduce the risk of compromising lessons due to the presence of an observer, and enhance professional development.

The schools indicated that their observation instruments were modeled after various published writings including state guidelines, unnamed research and personal experience but were altered to measure the teacher's ability to use an assortment of technology tools and how they applied the tools to instruction. One may be inclined to suggest, when done properly, the technology should be invisible and the focus should be on evaluating and supporting quality teaching.

The Pennsylvania schools seem to be equally focused on assessment and assistance, are heavily invested in staff and time, and practice interesting and innovative approaches to supervision. Their methods are well documented, and they have reported positive results. Based on the researcher's definition of a good cyber teacher supervision model and the respondents self reported information, it could be suggested that the participating schools practice quality supervision. In addition, if one accepts the key elements of supervision as outlined by the LRC Model, the schools practice supervision in much the same way it is suggested for conventional brick and mortar schools and therefore their practices are solidly grounded in the research.

This has been an amazing journey and has been personally and professionally rewarding! Perhaps this study will spark the curiosity and imaginations of others, continuing the discussion, and adding to our understanding of the subject.

APPENDIX A

INVITATION TO PARTICIPATE

Date   Code Number: ####

Dear Cyber School Administrator:

I am writing to you today to request your assistance with a research project. I am currently a doctoral candidate at the University of Pittsburgh and I am investigating the current supervisory practices of U.S. based cyber schools. This email address is listed as the primary contact on at least one of several sources and based on this information; I am directing my initial correspondence to your attention. If you feel you are not the most appropriate person to complete this survey for your school, please forward it to an administrator within your organization you think would be able to answer a few questions about the supervisory practices in your school.

I chose this topic because online learning is growing in popularity, but there has not been an associated increase in research about how administrators can best support and evaluate the performance of online teachers. The intent is to collect data regarding current supervisory practices to establish a foundation for future research, policy, and practice.

I am very interested in learning about the supervisory practice in your school and I hope you will have some time in your busy schedule to participate in the study. Participation is voluntary and all information will be kept completely confidential. Should you decide to participate, you will be provided with a full report of all findings from the study that your school could use to help validate current practices and improve your present model based on research.

If you consent to participating in the study, you or your designee can complete the survey by navigating in your Internet browser to http://www.bviu.org/CTSS. Please reference the code number at the top of this email as it required to complete the survey. In order to adhere to the study timeline, I am requesting that all information be submitted by February 8, 2008.

Your assistance is crucial to the project. I thank you in advance for your time and consideration.

Sincerely,

Eric Rosendale

APPENDIX B

CYBER SCHOOL SUPERVISION SURVEY

Introduction to the Survey

Dear Cyber School Administrator:

Thank you for taking the time to participate in this survey. I am very interested in learning about the supervisory practices in your school.

Participation in the study involves completing this online survey and possible participation in a digitally recorded follow-up discussion. It is estimated that the survey will take 20 minutes to complete. In the event that your school is selected to participate in the follow-up discussion, (approximately 3 schools will be chosen) I would request an additional 30 minutes of your time.

Your participation is completely voluntary and you may choose to withdraw from this study at any time without consequence of any kind. There are no anticipated risks associated with this study. There will be no payment for participation in the study. Participants may not benefit personally from participation in this study other than the experience associated with close introspection of the supervisory experience at their school, however what is potentially learned may add substantively to our knowledge about supervision in cyber school settings.

All data will be kept completely confidential. Survey results will be maintained in a secure password protected computer database. No school or individual responses will be identified in the reporting of the survey results.

If you consent to participate in this study please continue on with the the questions below. If you wish to complete a paper based version of this survey please contact me at the email address below and I will send you a self addressed stamped envelop to return the completed survey.

Your assistance is crucial to the project and I thank you in advance for your time and commitment to excellence in education.

Sincerely,

Eric Rosendale
724-494-2205
egr@bviu.org

The University of Pittsburgh IRB wants to ensure that the rights and welfare of research participants are protected. If you have any questions regarding your rights as a research participant, please contact the Human Subject Protection Advocate of the University of Pittsburgh IRB at 1-866-212-2668.

Section 1: Study Qualification

3. The main emphasis of our school is to enroll students full time and provide instruction over the Internet using online courses where most or all (at least 80%) of the content is delivered online through synchronous or asynchronous communication.

☐ Yes   ☐ No

If you answered "yes" to this question please go on to section 2.

If you answered "no", this concludes your participation in this survey. The focus of this study is on cyber schools that enroll students in full time online study and you do not need to complete the remaining questions. Thank you for your time and consideration!

Section 2: Demographic information

Please answer the following questions to tell me about you and your school.

4. ID Code:	
5. How many years has your school been in operation?	
6. What grade levels does your school serve? (i.e., K-12)	
7. How many students attend your school?	
8. How many teachers does your school employ?	
9. How many supervisors (people responsible for supervising and evaluating teachers) work at your school?	

Section 3: Current supervisory practices
Please answer the following questions about the current supervisory policies and practices in your school. Check the response that most accurately reflects *your understanding* of the present supervision system.

10. Does your school have written procedures for supervision?
   ☐ Yes   ☐ No   ☐ Not sure

11. What **resources** did you consult as you developed your supervision procedures/policies?

12. Teacher performance is assessed against **clearly articulated performance standards**.
☐ Strongly disagree ☐ Somewhat disagree ☐ Neither agree or disagree ☐ Somewhat agree ☐ Strongly agree

13. Teachers are evaluated in the areas of: (Check all that apply.)
   ☐ planning and preparation (subject knowledge, materials, assessment, selecting instructional goals).

   ☐ learning environment (maintain a purposeful and equitable online learning environment).

   ☐ instruction (active teaching, clarity, delivery, principles of instruction and learning).

   ☐ professional responsibilities (professional development, exhibiting professionalism).

Indicate your level of agreement with the two statements below by choosing one option according to the following scale:

Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
1	2	3	4	5

Our supervisory practices: 1   2   3   4   5

		1	2	3	4	5
14.	improve the quality of instruction.	☐	☐	☐	☐	☐
15.	raise student achievement.	☐	☐	☐	☐	☐

16. **Who is responsible** for supervising teachers? (Check all that apply.)
   ☐ Principal   ☐ Department Chair   ☐ Other (specify)_____

   ☐ Assistant Principal   ☐ Head of school

200

17. Indicate how often supervisors work with teachers (formally and informally) to **develop professional goals and strategies**?

☐ once each year   ☐ 2-4 times per year

☐ 4-10 times per year   ☐ more than 10 times each year

Indicate in the table below:

- whether your school is **currently using** the following **tools** in the supervision process by indicating [Y]es or [N]o

  and then

- **how useful** you believe it is using the scale:

Very useless	Somewhat useless	Neither useful nor useless	Somewhat useful	Very useful
1	2	3	4	5

Tool	Used	Usefulness				
	Y N	1	2	3	4	5
18. Social networking sites	☐ ☐	☐	☐	☐	☐	☐
19. Blogs	☐ ☐	☐	☐	☐	☐	☐
20. Wikis	☐ ☐	☐	☐	☐	☐	☐
21. Email	☐ ☐	☐	☐	☐	☐	☐
22. Video Conference	☐ ☐	☐	☐	☐	☐	☐
23. Instant messaging	☐ ☐	☐	☐	☐	☐	☐
24. Electronic portfolios	☐ ☐	☐	☐	☐	☐	☐
25. Electronic observation tool/checklist	☐ ☐	☐	☐	☐	☐	☐
26. Specially designed tools	☐ ☐	☐	☐	☐	☐	☐
27. Other (specify)	☐ ☐	☐	☐	☐	☐	☐

Indicate in the table below:

- whether your school is **currently using** the following **strategies** in the supervision process by indicating [Y]es or [N]o

and then

- **how useful** you believe it is using the scale:

Very useless 1	Somewhat useless 2	Neither useful nor useless 3	Somewhat useful 4	Very useful 5

Strategy	Used		Usefulness				
	Y	N	1	2	3	4	5
28. Differentiate supervision based on varied ability and developmental levels	☐	☐	☐	☐	☐	☐	☐
29. Regularly scheduled content team meeting	☐	☐	☐	☐	☐	☐	☐
30. Regularly scheduled calls from supervisor	☐	☐	☐	☐	☐	☐	☐
31. Supervisor and teacher collaborate to develop supervision plan	☐	☐	☐	☐	☐	☐	☐
32. Pre and post observation conferences	☐	☐	☐	☐	☐	☐	☐
33. Timely, constructive and specific feedback	☐	☐	☐	☐	☐	☐	☐
34. Analysis of multiple sources of data	☐	☐	☐	☐	☐	☐	☐
35. Data collected over time	☐	☐	☐	☐	☐	☐	☐
36. Frequent observation	☐	☐	☐	☐	☐	☐	☐
37. Flexible professional development opportunities	☐	☐	☐	☐	☐	☐	☐
38. As needed/on-demand training and support	☐	☐	☐	☐	☐	☐	☐
39. Personalized emails	☐	☐	☐	☐	☐	☐	☐
40. Peer mentoring/coaching	☐	☐	☐	☐	☐	☐	☐
41. Learning communities	☐	☐	☐	☐	☐	☐	☐
42. Other (Specify)	☐	☐	☐	☐	☐	☐	☐

Rate the following according to the **degree of difficulty** it presents to the **supervision process** using the scale:

Very useless 1	Somewhat useless 2	Neither useful nor useless 3	Somewhat useful 4	Very useful 5

	1	2	3	4	5
43. Physical distance between teacher and supervisor	☐	☐	☐	☐	☐
44. Offering constructive and specific feedback in a virtual environment	☐	☐	☐	☐	☐
45. Physical distance between students and teacher	☐	☐	☐	☐	☐
46. Offering content knowledge support in a virtual environment	☐	☐	☐	☐	☐
47. Lack of official "Supervisor of Online Teachers" certification	☐	☐	☐	☐	☐
48. Use of electronic collaboration tools to support teacher growth and development	☐	☐	☐	☐	☐
49. Use of electronic observation tools for collecting data (e.g., video conference, virtual class recordings, email archives, phone records)	☐	☐	☐	☐	☐
50. Other (Specify)	☐	☐	☐	☐	☐

51.   What **struggles have been encountered** and what **challenges** remain for your school's current supervision system?

52.   What are the greatest **strengths** of you school's current teacher supervision system?

Section 4: Supervision data sources
The following sources are often used to judge and or evaluate teachers as a part of the supervisory process. For each source, indicate in the table below:

- whether your school is **currently using** it to supervise teachers by indicating [Y]es or [N]o

and then

- **how useful** you believe it is using the scale:

Very useless	Somewhat useless	Neither useful nor useless	Somewhat useful	Very useful
1	2	3	4	5

Data Source	Used	Usefulness
53. Individual **teacher self-reflection**	Y N ☐ ☐	1 2 3 4 5 ☐ ☐ ☐ ☐ ☐
54. Classroom observation Using **archived data** (e.g. Teacher/student interaction emails)	Y N ☐ ☐	1 2 3 4 5 ☐ ☐ ☐ ☐ ☐
55. Classroom observation from *synchronous* **virtual** perspective of online classroom	Y N ☐ ☐	1 2 3 4 5 ☐ ☐ ☐ ☐ ☐
56. Classroom observation from *asynchronous* **virtual** perspective of online classroom (e.g. recorded virtual classroom environment)	Y N ☐ ☐	1 2 3 4 5 ☐ ☐ ☐ ☐ ☐
57. Classroom observation from **physical** perspective of **teacher**	Y N ☐ ☐	1 2 3 4 5 ☐ ☐ ☐ ☐ ☐
58. Classroom observation from **physical** perspective of **student**	Y N ☐ ☐	1 2 3 4 5 ☐ ☐ ☐ ☐ ☐
59. Teacher **professional portfolio**	Y N ☐ ☐	1 2 3 4 5 ☐ ☐ ☐ ☐ ☐
60. **Student work/test** scores	Y N ☐ ☐	1 2 3 4 5 ☐ ☐ ☐ ☐ ☐
61. Input from **students**	Y N ☐ ☐	1 2 3 4 5 ☐ ☐ ☐ ☐ ☐
62. Input from **parents**	Y N ☐ ☐	1 2 3 4 5 ☐ ☐ ☐ ☐ ☐
63. Input from **teachers**	Y N ☐ ☐	1 2 3 4 5 ☐ ☐ ☐ ☐ ☐
64. **Professional development** activities	Y N ☐ ☐	1 2 3 4 5 ☐ ☐ ☐ ☐ ☐
65. **Lesson plans**	Y N ☐ ☐	1 2 3 4 5 ☐ ☐ ☐ ☐ ☐
66. Other (specify)	Y N ☐ ☐	1 2 3 4 5 ☐ ☐ ☐ ☐ ☐

Section 5: General perceptions
The following questions allow you to elaborate on some of the more complex issues surveyed above. Please provide a response to each of the following questions. (Attach additional paper if necessary.)

67. What are the **next steps** in **maintaining/refining** your supervision process?

68. Please take some time to add any other thoughts or concerns you feel may contribute to the study.

Thank you for completing this survey. Please return the survey in the self addressed stamped envelope provided by the researcher. If you have any questions about how to return this survey, please feel free to contact me at 724-494-2205 or via email at egr@bviu.org

GUIDED DISCUSSION TEMPLATE

Introduction

Thank you again for taking time out of your busy schedule to discuss this important topic. The purpose of the follow-up discussion is to ask questions to more fully address the emerging issues surrounding supervision of cyber teachers. With your consent, I would like to record our session. The recordings will be used to facilitate the note taking process to ensure my account of the session is as accurate as possible. This interview will remain completely anonymous to everyone but me. I will provide you with a copy of my written notes of the interview session for your review. You may edit the notes for accuracy and refine any details you feel would help clarify your responses. Our conversation should take no more than about 30 minutes. Do I have your permission to record this session? Do you have any questions for me before we get started?

Questions

The questions asked during the personal interviews will be framed according to the results of the survey. The questions will be designed to clarify issues related to discrepancies in policy and perception of practice. Interview questions are/will be designed to help the participants *tell their story*.

- Several questions will be similar in format to the interrogatory statements below:
  - You indicated X on the survey. Could you give me an example of X?
  - The survey analysis indicates X is a reoccurring theme across participating schools. Why do you believe this is a common experience?
- How did you get to this point in your supervision process?
- What professional development was needed?
- There is so much information available to a supervisor of online teachers. What types of data help you the most?
- Have you ever considered supervising teachers from various perspectives of the online environment? Ie. Live with the student from their perspective or live with the teacher from their perspective
- Did you consult any literature to construct your supervision process?

- What are your next steps in maintaining/refining your supervision process?

APPENDIX D

KEYWORD MATRIX

Directions: Complete the table columns and rows as prescribed below.

This tool contains three columns:
1. Keyword/Phrase
2. Found in…
3. Context

The first column contains keywords or phrases that may be prevalent in the context of school supervision. If the keyword or phrase is found in the data, site the source using specific details (including document name, school, page number etc.) in column two. In column three, capture the context in which the keyword or phrase was used. Use this column to illustrate concepts or themes. Direct quotes form sources may also be included.

Keyword/Phrase	Found in…	Context
360 degree feedback		
Clinical supervision		
Coach		
Conferenc		
Evaluat		
Feedback		
Formative		
Mentor		
Multiple data		
Observ		
Parent eval		
Peer coach		
Peer observation		
Peer review		
Performance review		
Performance standards		

Portfolio		
Professional growth		
Rating scale		
Reflection		
Rubric		
Student eval		
Summative		
Supervis		
Teacher observation		
Walkthrough		
Other emerging themes		
Other emerging themes		
Other emerging themes		
Other emerging themes		
Other emerging themes		
Other emerging themes		

DOCUMENT ANALYSIS

Directions: Complete the table columns and rows as prescribed below for each document collected. The objective is to ascertain the inclusion of the elements below and note any other recurring themes or concepts that emerge from the analysis.

This tool contains three columns:
1. Key Elements
2. Found in…
3. Context

The first column contains keywords or phrases that may be prevalent in the context of school supervision policy documents and teacher evaluation forms. If the keyword or phrase is found in the data, site the source using specific details (including document name, school, page number etc.) in column two. In column three, capture the context in which the keyword or phrase was used. Use this column to illustrate concepts or themes. Direct quotes form sources may also be included.

School Supervision Policies Checklist

Key Elements	Found in…	Context
Name of school		
Revision Date		
Stated Goals		
Policy adopted from traditional supervision policy		
Certifications Required		
Academic Preparations		
Number of observations required		
Methods employed		

Other		

Teacher Evaluation Forms/Guidelines/Checklists Checklist

Key Elements	Found in…	Context
Name of school		
Revision Date		
Major categories		
Evidence checklist		
Narrative section		
Adopted from…		
Other		
Other		
Other		

SUPERVISION MODEL COMPARISON CHART

Directions: Write the name of the school or if the school wishes not to be identified write the corresponding school code on the line provided. Then, fill out the table columns and rows as prescribed below.

This tool contains three sections:
1. Concepts from the Review of Literature
2. Florida Virtual School Supervision Model
3. Southern Region Education Board Model

For each section, populate the second column with specific citations of sources of evidence from the surveys, document analyses, and interviews that indicate the presence of the element listed in column one. In the third column provide specific details illustrating the context, concepts, or themes. Direct quotes form sources may also be included.

Name of School or School Code: _____

Concepts from Review of Literature	Sources of Evidence	Description
Collaboration		
Differentiation		
On-going		
Effective and efficient process		
Account for ability and developmental level of teacher		
Improves instructional practice		
Improve educational experience of students		
Collect multiple sources of data regarding teacher performance in planning and preparation, learning environment, instruction and professional responsibilities		

Data collected over time		
Individualized instructional improvement program		
Perfomance measured against clearly articulated standards		
Melds competence and quality performance with professional growth		

The characteristics were developed from multiple sources. {Eisner, 1983 #258; Pennsylvania Department of Education, 2003 #38; Pajak, 2002 #135; McQuarrie, 1991 #132; Lieberman, 1995 #211; Kaye, 2004 #127; Nolan, 2004 #5; Glickman, 1985 #130; Costa, 1994 #111; Anderson, 1993 #29; Tucker, 2005 #181; Danielson, 2000 #45}

Florida Virtual School Model Focus, Data, Modeling, Support, and Accountability	Sources of Evidence	Description
Teamwork • Participates in team interviews • Provides course updates as needed • Provides team coverage when needed • Shares best practices and strategies		
Communication • Announcement page is updated weekly with personable, timely, and useful information • Responds within 24 hours to student questions via email and voice mail • Provides graded feedback to students within 48 hours • Uses a positive and supportive tone in all student feedback • Sends weekly updates to students an parents • Uses the FLVS drop policy appropriately		
Reliability • Proper and timely use of he leave of absence form • Timely submission for reimbursements • Attends staff meetings • Completes progress reports with comments on time		
Organizational Skills 1. Tracks student progress 2. Uses FLVS grace period wisely 3. Manages all parts of job with consistency and efficiency		
Customer Service A. Provides specific feedback on student assessments B. Contacts and manages enrolled students in a timely fashion C. Positive student and parent feedback (survey results) D. Completes monthly calls to students and parents E. Provides support to schools as needed F. Makes decisions based on what is best for students learning and success		
Other 1. Student success is at the center of all policy and instructional decisions 2. Commitment to culture – keep staff motivated and energized 3. Supervisors need to know course well enough to know what kinds of assessments are good to spot check for specific		

feedback from the teacher		
4. Supervisors model what is expected of teachers		
5. Daily monitoring, coaching, and mentoring		
6. Teachers are held accountable		
7. No expectation of privacy on email or phone		
8. Support mechanisms are in place		
9. Partnerships/teams for coaching/mentoring		

(Used with permission. Managing teachers you can't see. Instructional oversight in a virtual school. (2006). Orlando, FL: Florida Virtual School.)

Southern Regional Education Board (SREB) Model	Sources of Evidence	Description

Academic Preparation
1. The teacher meets the professional teaching standards established by a state-licensing agency or the teacher has academic credentials in the field in which he or she is teaching.
    a. Meets the state's professional teaching standards or has academic credentials in the field in which he or she is teaching
    b. Provides evidence that he or she has credentials in the field of study to be taught
    c. Knows the content of the subject to be taught and understands how to teach the content to students
    d. Facilitates the construction of knowledge through an understanding of how students learn in specific subject areas
    e. Continues to update academic knowledge and skills		

Content Knowledge and Skills for Instructional Technology
2. The teacher has the prerequisites technology skills to teach online.
    a. Demonstrates the ability to effectively use word-processing, spreadsheet, and presentation software
    b. Demonstrates effective use of Internet browsers, email applications and appropriate online etiquette
    c. Demonstrates the ability to modify and add content and assessment, using on online Learning Management System (LMS)
    d. Incorporates multimedia and visual resources into and online module
    e. Utilizes synchronous and asynchronous tools (e.g., discussion boards, chat tools, electronic whiteboards) effectively
    f. Troubleshoots typical software and hardware problems
    g. Demonstrates the ability to effectively use and incorporate subject-specific and		

developmentally appropriate software in an online learning module h. Demonstrates growth in technology knowledge and skills in order to stay current with emerging technologies		

Online Teaching and Learning Methodology, Management, Knowledge, Skills and Delivery
 	
3. The teacher plan, designs and incorporates strategies to encourage active learning, interaction, participation, and collaboration in the online environment.
 	
    a. Demonstrates effective strategies and techniques that actively engage students in the learning process (e.g., team problem-solving, in-class writing, analysis, synthesis and evaluation instead of passive lectures)
    b. Facilitates and monitors appropriate interaction among students
    c. Builds and maintains a community of learners by creating a relationship of trust, demonstrating effective facilitation skills, establishing consistent and reliable expectations, and supporting and encouraging independence and creativity
    d. Promotes learning through group interaction
    e. Leads online instruction groups that are goal-oriented, focused, project-based and inquiry-oriented
    f. Demonstrates knowledge and responds appropriately to the cultural background and learning needs of non-native English speakers
    g. Differentiates instruction based on student's learning styles and needs and assists students in assimilating information to gain understanding and knowledge
    h. Demonstrates growth in teaching strategies in order to benefit from current research and practice
4. The teacher provides online leadership in a manner that promotes student success through regular feedback, prompt response and clear expectations.
    a. Consistently model effective		

communication skills and maintains records of applicable communications with students b. Encourages interaction and cooperation among students, encourages active learning, provides prompt feedback, communicates high expectations, and respects diverse talents and learning styles c. Persists, in a consistent and reasonable manner, until students are successful d. Establishes and maintains ongoing and frequent teacher-student interaction, student-student interaction and teacher-parent interaction e. Provides on opine syllabus that details the terms of class interaction for both teacher and students, defines clear expectations for both teacher and students, defines the grading criteria, establishes inappropriate behavior criteria for both teacher and students, and explains the course organization to students f. Provides syllabus with objectives, concepts and learning outcomes in a clearly written, concise format g. Uses student data to inform instruction, guides and monitors students' management of their time, monitors learner progress with available tools and develops an intervention plan for unsuccessful learners h. Provides timely, constructive feedback to students about assignments and questions i. Gives students clear expectations about teacher response time 5. The teacher models, guides and encourages legal, ethical, safe, and healthy behavior related to technology use. a. Facilitates student investigations of legal and ethical issues related to technology and society b. Establishes standards for student behavior that are designed to ensure academic integrity and appropriate uses of the Internet and written communication c. Identifies the risks of academic dishonesty for students		

d. Demonstrates an awareness of how the use of technology may impact student testing performance
 	
e. Uses course content that complies with intellectual property rights policies and fair use standards
 	
f. Provides students with an understanding of the importance of Acceptable Use Policies (AUP)
 	
g. Demonstrates knowledge of resources and techniques for dealing with issues arising from inappropriate use of electronically accessed data or information
 	
h. Informs students of their right to privacy and the conditions under which their names or online submissions may be shared with others
 	
6. The teacher has experienced online learning from the perspective of a student.
 	
   a. Applies experiences as an online student to develop and implement successful strategies for online teaching
 	
   b. Demonstrates the ability to anticipate challenges and problems in the online classroom
 	
   c. Demonstrates an understanding of the perspective of the online student through appropriate responsiveness and a supportive attitude toward students
 	
7. The teacher understands and is responsive to students with special needs in the online classroom.
 	
   a. Understands that students have varied talents and skills and uses appropriate strategies designed to include all students
 	
   b. Provides activities, modified as necessary, that are relevant to the needs of all students
 	
   c. Adapts and adjusts instruction to create multiple paths to learning objectives
 	
   d. Encourages collaboration and interaction among all students
 	
   e. Exhibits the ability to assess student knowledge and instruction in a variety of ways
 	
   f. Provides student-centered lesson and activities that are based on concepts of active learning and that are connected to real-world		

applications		

8. The teacher demonstrates competencies in creating and implementing assessments in online learning environments in ways that assure validity and reliability of instruments and procedures.
    a. Creates or selects, adequate and appropriate assessment instruments to measure online learning that reflect sufficient content validity (i.e., that adequately cover the content they are designed to measure), reliability and consistency over time
    b. Implements online assessment measure and materials in ways that ensure instrument validity and reliability
9. The teacher develops and delivers assessments, projects, and assignments that meet standards-based learning goals and assess learning progress by measuring student achievement of learning goals.
    a. Continually reviews all materials and Web resources for their alignment with course objectives and state and local standards and for their appropriateness
    b. Creates assignments, projects and assessments that are aligned with students' different visual, auditory and hand-on ways of learning
    c. Includes authentic assessment (i.e., the opportunity to demonstrate understanding of acquired knowledge and skills as opposed to testing isolated skills or retained facts) as part of the evaluation process
    d. Provides continuous evaluation of students to include pre- and post-testing and student input throughout the course
    e. Demonstrates an understanding of the relationships between and among the assignments, assessments and standards-based learning goals
10. The teacher demonstrates competencies in using data and findings from assessment and other data sources to modify instructional methods and content and to guide student learning.
    a. Assesses each student's background and content		

knowledge and uses these data to plan instruction
   b. Reviews student responses to test items to identify issues related to test validity or instructional effectiveness
   c. Uses observational data (i.e., tracking data in electronic courses, Web logs, e-mail) to monitor course progress and effectiveness
   d. Creates opportunities for self-reflection or assessment of teaching effectiveness within the online environment (e.g., classroom assessment techniques, teacher evaluations, teacher peer reviews)
11. The teacher demonstrates frequent and effective strategies that enable both teacher and students to complete self-and pre-assessments.
   a. Employs ways to asses student readiness for course content and method of delivery
   b. Employs ways for students to effectively evaluate and assess their own readiness for course content and method of delivery
   c. Understands that students success (e.g., grade, level of participation, master of content, completion percentage) is an important measure of teaching and course success
   d. Provides opportunities for student self=assessment within courses		

(Used with permission. Online teaching evaluation for state virtual schools. (2006). Atlanta, GA: Southern Regional Education Board.)

APPENDIX G

SCHOOLWIRES PERMISSION

TO: Eric Rosendale
FROM: Thomas Zelesnik
RE: Permission for use of SchoolWires Survey Tool for Dissertation
SENT: November 13, 2006

Eric,

I believe this is a very acceptable use of the BVIU's SchoolWires to further the research
in education. You have my permission to proceed.

TZ

APPENDIX H

FLORIDA VIRTUAL SCHOOL TEACHER EVALUATION MODEL PERMISSION TO

USE

TO: Eric Rosendale
FROM: Lori Gully
RE: Permission to use Managing Teachers You Can't See
SENT: December 13, 2006

Hello Eric!

Please forgive the excruciatingly slow reply. I was on the hunt for the document! Please feel free to use it in your research.

If you are interested in other research with FLVS, check out our opportunities area http://www.flvs.net/general/research_opportunities.php

Thank you!
_____
Lori Gully
Director of Florida Services
Florida Virtual School - FLVS
407.317.3326 x2324
http://www.flvs.net

APPENDIX I

SREB PERMISSION TO USE

TO: Eric Rosendale
FROM: Bill Thomas
RE: Permission for use of SREB Online Teacher Evaluation Form
SENT: November 14, 2006

Thank you for writing and certainly you may use any of our reports as primary source material.

Bill Thomas

ITEM 18 RE-SURVEY

Supervision of Cyber Teachers Survey Item 18 Only

Page 1 of 1

1. Please enter your ID Code from the top of the email.*
   Remember this code will be used to track participation and to contact a school in the event they are selected to participate in the second phase of the study. All data will be kept completely confidential and secured in a password protected database. The identity of the responding schools will only be known by the researcher.

2. Rate the following according to the degree of difficulty it presents to the supervision process

	Highly difficult	Moderately difficult	Neutral	Slightly difficult	Not difficult
Physical distance between teacher and supervisor	☐	☐	☐	☐	☐
Offering constructive and specific feedback in a virtual environment	☐	☐	☐	☐	☐
Physical distance between students and teacher	☐	☐	☐	☐	☐
Offering content knowledge support in a virtual environment	☐	☐	☐	☐	☐
Lack of official "Supervisor of Online Teachers" certification	☐	☐	☐	☐	☐
Use of electronic collaboration tools to support teacher growth and development	☐	☐	☐	☐	☐
Use of electronic observation tools for collecting data (e.g. video conference, virtual class recordings, email archives, phone records)	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐

Done   Cancel

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