PSYCHOMETRIC PROPERTIES OF THE ADAPTED SCHOOL CULTURE SURVEY-TEACHER FORM IN THE SELECTED VIRTUAL SCHOOL

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Doctor of Education

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by

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The undersigned, appointed by the Dean of the Graduate School, have examined the dissertation entitled:

PSYCHOMETRIC PROPERTIES OF THE ADAPTED SCHOOL CULTURE SURVEY-TEACHER FORM IN THE SELECTED VIRTUAL SCHOOL

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I am forever grateful to my Mom and Dad for

their guidance and support of a good education.

I am dedicating this work in honor and memory of my

Dad who went to be with the Lord on January 14, 2007.

He always wanted a doctor in the family.

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PSYCHOMETRIC PROPERTIES OF THE ADAPTED SCHOOL CULTURE SURVEY-TEACHER FORM IN THE SELECTED VIRTUAL SCHOOL

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ABSTRACT

The study of the Selected Virtual School teachers' perceptions on culture was conducted to determine the psychometric properties of *Virtual School Culture Survey-Teacher Form* (VSCS-TF). The VSCS-TF was sent out to approximately 225 teachers in the Selected Virtual School and 78 agreed to complete the survey. Cronbach's alpha, item total analysis, an Expert Online Education Panel, and factor analysis were applied to investigate properties of validity and reliability. The instrument was determined to be reliable with face and content validity but no construct validity with the *School Culture Survey-Teacher Form* (Gruenert, 1998). Principal component analysis yielded seven factors. Additional data reduction criteria produced four factors: (a) Collegial Collaboration, (b) School Improvement, (c) Collegial Communication, and (d) Leader Partnership. A revised version of the VSCS-TF was created with 21 items and four factors.

CHAPTER ONE

INTRODUCTION TO THE STUDY

Online learning through virtual schools is one of the most important advancements in attempting to rethink the effectiveness of education in the United States (North American Council for Online Learning [NACOL], 2006). Growing exponentially, virtual schools and online learning are an increasingly common method of teaching and learning, providing accessibility options for learners and their families (NACOL).

While virtual schools are increasing in number, little is being done to study the culture of these organizations. Culture is an important attribute in the success of any school or organization (Schein, 1992). Research has shown culture, collaborative culture particularly, to have a positive effect on student achievement and school restructuring in traditional schools (Brky & Schneider, 2002; Dumay, 2009; Gruenert, 2005; Lummis, 2001). Gruenert (1998) and Brinton (2007) conducted research on culture in traditional schools in the past. However, a review of literature reveals a lack of information regarding culture in the virtual school and an instrument to measure it. This study of virtual school culture seeks to understand the virtual culture through the perceptions of teachers. This quantitative case study queried the culture perceptions of teachers in the Selected Virtual School.

Importance of Study

Two reasons provide for the importance of this study. First, this study addressed the validation and adaptation of the *School Culture Survey-Teacher Form* (Gruenert, 1998), located in Appendix A. The *School Culture Survey-Teacher Form* (SCS-TF) was tested for validity and reliability to allow researchers to gain a collaborative culture

perspective in a virtual school environment. The original SCS-TF represented a quality instrument for researchers to examine the perceptions of teachers in a traditional school. Yet, there exists no instrument to measure culture in virtual schools.

The second part of this inquiry relates to the first. The query of teachers in virtual schools will allow educational researchers to understand key viewpoints from teachers working in an online environment. Researchers have pointed to the need to study more closely factors that affect student learning in virtual school environments (Butz, 2004; Clark, 2003; Dickson, 2005).

Selected Virtual School

The Selected Virtual School (SVS), research site, is located in the Western United States. The school is a public, state funded virtual school available to resident students. In 2009, there were 225 teachers and 9500 projected students enrolled. Because students attend virtually, they can attend the SVS from anywhere in the state. Student enrollment continues to increase each year. Notable is the growth of over 50% per year after piloting classes in Fall 2002 and Spring 2003 serving 860 enrollments. The goal of the SVS is to provide choice, accessibility, flexibility, quality, and equity in curricular offerings for students in the state. In 2009, the SVS was selected as a top ten virtual school in the United States by the International Association for K-12 Online Learning (iNACOL).

Conceptual Underpinnings of the Study

Looking at schools through the lens of culture focuses on the relationships among the adults in the building (Bolman & Deal, 2003; Gruenert, 2000; Morgan, 2006). Culture, however, is a very elusive term with many definitions. Culture has been described as the way people do things and how they relate to each other (Cunningham &

Gresso, 1993). Bates (1992) defines culture as "the framework that connects beliefs, values, and knowledge with action" (p. 68). Culture is conveyed by the feel or climate, the way members of the school interact with students, parents, or other outsiders (Weaver, 1996). "Culture is all about a mode of coping with human problems; with human transactions of all sorts, depicted in symbols" (Bruner, 1996, p. 99). "Culture consists of the stable, underlying social meanings that shape beliefs and behavior over time" (Deal, 1990, p. 7). "Culture is defined as the collective programming of the mind which distinguishes the members of one group or category of people from another" (Hofstede, 1997, p. 180). These definitions of culture profile a theme of patterns of behavior and relationships that are learned, shared, and passed on to new members (Gruenert, 1998). This researcher used the definition by Edgar Schein in this study as the conceptual underpinning. In the field of organizational culture, Schein is considered a leading expert. Schein (2004) defines the culture of a group as:

> a pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration that has worked well enough to be considered valid and therefore to be taught to new members as the correct way to perceive, think, and feel in relation to those problems (p. 17).

The culture of any organization can only be gauged through an investigation of its key members (Schein, 2004). Schein states over time that organizations tend to develop personalities. This is the organizational culture at work. Organizational culture involves assumptions, beliefs, and values that are shared by members of a group or organization (Schein, 1992; Martin, 2002). The culture dictates the way things are done and the way people are supposed to act (Gruenert, 2000).

Statement of Problem

School culture has been measured in traditional schools by Brinton (2007) and Gruenert (1998). Moreover, the *School Culture Survey-Teacher Form* (Gruenert, 1998) was designed to ascertain the culture perceptions of certified staff in traditional schools. Yet, no instrument exists to quantify the teacher perceptions of culture in virtual school environments. This study adapted the *School Culture Survey-Teacher Form* (SCS-TF) as a reliable and valid survey instrument for measuring culture in a virtual school. In addition, the study reported summary statistics of teacher perceptions of the culture of the Selected Virtual School utilizing the adapted SCS-TF broken down by gender, highest degree held, teaching grade level, subject/content area, years of experience in virtual education, and total years of experience. The intent was for the information gained from the adapted SCS-TF to provide a greater understanding of the collaborative culture of virtual schools, thereby improving the probability for student achievement and school improvement efforts.

Purpose of the Study

The *School Culture Survey-Teacher Form* (Gruenert, 1998) was designed to determine the culture perceptions of teachers in traditional schools. Based upon the work of Gruenert, this study had a dual purpose. First, this study adapted the *School Culture Survey-Teacher Form* (SCS-TF) to appraise the culture perceptions of virtual school teachers. The original SCS-TF has been determined to be reliable and valid for the certified educator perception of teachers in a traditional school setting, but no parallel instrument has been created to assess perceptions of virtual school teachers. This study adapted the SCS-TF to test if it was a reliable and valid instrument for measuring culture

perceptions in a virtual school. Second, this study also reported summary statistics of teacher perceptions about their culture experiences in the Selected Virtual School. The demographic data included gender, highest degree held, teaching grade level, subject/content area, years of experience in virtual education, and total years of experience.

Research Questions and Null Hypotheses

The following research questions and null hypotheses were developed to guide the study.

1. What are teacher perceptions of the Selected Virtual School (SVS) culture by item and by subscale components as measured with the adapted *School Culture Survey-Teacher Form* or *Virtual School Culture Survey-Teacher Form* (VSCS-TF) and reported by demographics?
2. How many items have internal consistency and are reliable on the *Virtual School Culture Survey-Teacher Form* (VSCS-TF)?
3. Can face, content, and confirmatory construct validity be established for the VSCS-TF?

   Ho3: Confirmatory construct validity cannot be established for the VSCS-TF.
4. Can survey items be identified that discriminate between demographic categories defined within the independent variables of gender, highest degree held, teaching grade level, subject/content area, years of experience in virtual education, and total years of experience?

   Ho4: Significant items cannot be identified to discriminate between or among demographic categories for the independent variables.

5. Are there significant clusters of survey items that predict group membership?

   Ho5: There are no significant item clusters that will predict group membership.

Limitations and Assumptions of the Study

Results of the study were limited by the reliability and validity of the adapted *School Culture Survey-Teacher Form* (SCS-TF). In addition, the researcher has worked two years in a state virtual school and has tacit knowledge of virtual schools. Further, results are limited by the degree to which each participant understands and honestly answers the questions on the adapted SCS-TF. Finally, results of this case study describe only the participants in the study and cannot be generalized to other populations because the data are self-reported and the sample is self-selected.

This study makes several assumptions. First, the study assumes all participants who completed the adapted SCS-TF did so truthfully. The study also assumes that a certain number of the potential participants receiving the survey completed the adapted SCS-TF. Further, the study assumes the participants understood the questions asked on the survey.

Delimitations of the Study

The research being conducted was a case study limited to the Selected Virtual School. In addition, access to the web-based survey and working through a third party to administer the survey created delimitations.

Definitions of Key Terms

The key terms that follow are used throughout the study. Definitions are included for clarification to the reader.

Blended courses. Online and face to face instruction taught as one (Picciano & Seaman, 2009).

Brick and mortar school. Physical location or facility for conducting classes.

Collaborative culture. Empowering members of the school community to work together to make the most important decisions regarding the educational experiences of their students (Lummis, 2001).

Course enrollment. One student taking one semester long course (Watson, Gemin, Ryan & Wicks, 2009).

Culture. In its most basic form, it is an informal understanding of the way we do things around here (Cunningham & Gresso, 1993).

Distance education. Educational situation in which the instructor and students are separated by time, location, or both (Kaplan-Leiserson, 2000).

E-learning. All forms of electronic supported learning and teaching.

Face to face instruction (F2F). Traditional classroom environment (Kaplan-Leiserson, 2000).

International Association for K-12 Online Learning (iNACOL). A non-profit organization with more than 2,500 members serving a diverse cross-section of K-12 educators from school districts, charter schools, state education agencies, non-profit organizations, research institutions, corporate entities and other content and technology providers (iNACOL, 2010).

Online applications. Course management system and other software applications used to deliver online learning courses.

Online learning. An umbrella term used to describe any education or training that occurs online.

School Culture Survey-Teacher Form (SCS-TF). Survey instrument developed by Gruenert (1998) to investigate the culture perceptions of certified staff. The SCS-TF measures school culture with the following subscales: Collaborative Leadership, Teacher Collaboration, Professional Development, Unity of Purpose, Collegial Support, and Learning Partnership.

State virtual schools. Created by legislation or by a state-level agency, and/or administered by a state education agency, and/or funded by a state appropriation or grant for the purpose of providing online learning opportunities across the state (Watson et al., 2009).

Virtual school. An institution teaching courses entirely or primarily through online methods. It is also referred to as a cyber school.

Summary

As discussed in the beginning of this chapter, two truths focus and guide this study. First, to date a parallel instrument of the *School Culture Survey-Teacher Form* (SCS-TF) has not been created to measure the teacher perceptions of collaborative culture in virtual schools. Second, the culture perceptions of teachers in a virtual school have not been studied. Educational leadership must seek to understand culture perceptions if they are to more closely understand factors that affect student achievement and school improvement in virtual school environments.

Chapter one presented a call for additional information, formed the problem and purpose of the study, and gave the conceptual underpinnings to support the study. Research questions were presented to guide the study. Limitations and delimitations were given as well as key term definitions. Chapter two provides a deeper literature review to

inform the reader and support the study. Areas reviewed include virtual schools, culture, organizational culture, school culture, leadership, and collaboration. Chapter three details the methodology to validate the SCS-TF survey instrument for virtual schools and the procedure to measure the culture perceptions of teachers in the Selected Virtual School (SVS). Chapter four provides the findings of the reliability and validity of the survey instrument and data derived from teacher perceptions in the SVS. Chapter five discusses findings, implications, conclusions, and recommendations for virtual school leaders and future research.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

The literature review focused on these areas. First, an examination of virtual schools or online learning was presented. This section provides a variety of information on virtual schools in order to assist the reader in understanding the nature and growing number of e-learning environments. Second, an examination of culture, explicitly organizational culture and school culture was explored. Multiple definitions were offered in order to reinforce the definition posited by Schein (2004) which is serving as the conceptual underpinning for this study. Finally, because leadership and collaboration are key components of the subscales in the *School Culture Survey-Teacher Form* (Appendix A) developed by Gruenert (1998), research support was presented in these areas.

Virtual Schools

Online learning is increasingly accepted as not only a viable option for students, but as a key element of education innovation and reform (Watson et al., 2009). A paradigm shift is occurring…creative destruction…innovation by one group destroying the monopoly enjoyed by longtime market leaders (Fortino & Wolf, 2007). In the case of education, distance learning is the disruptive technology threatening traditional classrooms. Schools that do not adapt will suffer, while schools embracing distance learning will likely be in leadership roles (Fortino & Wolf). Technology will continue to become more pervasive in society, driving more individuals to expect it to meet their educational needs. As long as some schools are providing distance education and providing it well, all schools must be aware of its potential, both to disrupt and enhance their classrooms. Possibly the best plan is to discover the best way to turn virtual classrooms into a competitive advantage (Fortino & Wolf).

The necessity to educate more people at a faster pace has increased since the Industrial Revolution (Ghersi, 2007). Initially, larger classrooms and bigger schools were built to accommodate more people. In recent years with e-learning, this capacity is unlimited. Yet, the transition between brick and mortar schools and virtual schools will take time. The speed of change to virtual schools will depend most on the quality of online applications; and the applications needed to speed up in order to meet the learning process and the needs of the learner (Ghersi).

In virtual schools, John Dewey's social interaction component of the learning process takes place via email, in online discussions, chat, and alternative modified programs, i.e. on-site teacher mentors at the home school ("Virtual schools," 2000). Furthermore, virtual schools allow students to learn at their own pace. Students often find it less inhibiting by allowing anonymity to struggling students to ask questions without the pressure from other students who have grasped the concept. Accelerated students can move on more quickly than in a traditional school ("Virtual schools").

"The rise of virtual education will encourage educators to think of schools as learning instead of just attending" (Patterson, 2000, p.16). Virtual education will be "a catalyst for how we approach education" (p. 16). Students will become engaged in a learning community that will not end when the bell rings. Additionally, virtual classes will make it easier to accommodate different learning styles for students. Yet, tradition and lack of imagination will be barriers to this transition. The biggest barrier, however, might be the digital divide of the haves and the have-nots, referencing lack of computers, Internet access, and outdated technology (Patterson).

As the world of online education continues to evolve, brick and mortar schools are incorporating digital curricula and virtual teachers in to their classrooms in ways that have surprised even the advocates of the online education movement (Davis, 2009). "Online learning is absolutely moving beyond the distance-learning model into a whole other category unto itself" says Michael B. Horn when interviewed by Davis (M. Horn, personal communication, March 26, 2009). This technology allows for a lot of creative arrangements. In an interview with Davis, Gerald N. Tirozzi, executive director of the NASSP, stated, "As we move forward in this online world…we need to be sensitive to social interaction, emotional development, and how to deal with adults in many situations" (G. Tirozzi, personal communication, March 26, 2009). Again, pointing to importance of relationships and culture in schools, in this case, virtual schools. Susan Patrick, iNACOL CEO, points out "We are seeing a shift from using purely virtual options to mainstream digital curriculum in blended learning environments in the classroom" when interviewed by Davis (S. Patrick, personal communication, March 26, 2009).

Some states are emphasizing the importance of students taking an online only course. The Michigan legislature, in 2006, passed a requirement that students must take an online class to graduate from high school (Davis, 2009; Barbour & Reeves, 2009; Umpstead, 2009). Alabama followed Michigan's lead in 2008 with a similar requirement. The online graduation requirement should help students to be more tech savvy in our competitive world and assist them in college transition (Davis).

First utilized in the mid-1990s (Barbour & Reeves, 2009), virtual education has become a common method of distance education used in K-12 education. The most

accepted definition of a virtual school is an entity approved by a state or governing body that offers courses through distance delivery usually using the Internet. The three common delivery methods in virtual schools are independent, asynchronous, and synchronous (Barbour & Reeves).

Currently, the large majority of virtual school students are academically capable, motivated, independent learners (Barbour & Reeves, 2009). Virtual education benefits include expanding educational access, providing high-quality learning opportunities, improving student outcomes and skills, allowing for educational choice, and achieving administrative efficiency (Barbour & Reeves).

The first two virtual schools in the United States were created in 1997: Virtual High School and Florida Virtual High School (Friend & Johnston, 2005; Pape, Adams, & Ribeiro, 2005; Barbour & Reeves, 2009). Within a couple of years, other states followed suit. Watson and Ryan (2006) found 24 statewide virtual schools in their follow-up report. Virtual schooling is primarily a North American phenomenon; only Canada and the United States operate entities that would be classified as virtual schools (Cavanaugh et al., 2006; Barbour & Reeves, 2009).

School Reform

Reform progress has been uneven and slow despite enormous efforts to improve high schools (Tucker, 2008). Solutions for improving the nation's schools include school leadership, teacher quality, standards, testing, funding, and a host of other issues crowding reform agendas. Nevertheless, one important education innovation may greatly accelerate the pace of reform and that is virtual education. Virtual schools are popular and growing rapidly nationwide. In excess of 700,000 K-12 students took virtual classes

during the 2005-2006 school year. This is almost double the estimate of students taking online courses three years earlier. For most students, virtual education integrates with and enhances traditional high schools. Most importantly, the best virtual schools excel in areas reformers have already identified as critical to high school improvement, i.e. differentiated instruction, student learning plans, flexible schedules, etc. Therefore, virtual schools may represent the best opportunity for bringing the much needed school reform (Tucker).

Online learning through virtual schools is one of the most important advancements in attempting to rethink the effectiveness of education in the United States (NACOL, 2006). Virtual schools provide access to online, collaborative and self-paced learning environments – settings for 21st Century skills. Students today must be able to combine these skills with effective technology use to succeed in current and future jobs. In an increasingly competitive global economy, it is not enough for students to acquire subject level mastery, 21st Century skills are required. E-learning is already a major driver for education and training beyond K-12 in higher education, employee training, and lifelong learning. The Sloan Consortium reports 2.5 million students enrolled in at least one class in 2004. Online higher education programs are increasing steadily by 400,000 students annually. The essential delivery system of training in the business world is online learning. Today, many corporations such as IBM, Motorola, and Union Pacific use e-learning for training employees (NACOL).

"In the future, the issues will be centered on how to use the innovation of online learning to solve the bigger problems in K-12 education: how to offer a world class education for every student, how to improve teaching and course quality, how to move to

performance and competency based models of learning, how to ensure every student is college ready, and how to scale the delivery model for all students" (Patrick, 2008, p. 28). The number of virtual schools has increased dramatically over the past decade. Furthermore, the access to full-time, online, and K-12 online learning opportunities have expanded (Berge & Clark, 2009). Watson (2008) found that 44 of the 50 states reported K-12 online learning opportunities for students. Currently, 25 states run statewide online initiatives up from 15 a year ago according to the Center for Digital Education ("Support for K-12," 2010).

Clayton Christensen wrote in a Forbes article in 2008, "Despite skepticism about the school system's ability to shift, online classes now account for 1 million enrollments in public education, up from 45,000 just seven years ago." In addition, he notes that at least 27 states have online high schools. Christensen (2008) predicts online education will be a disruptive innovation beginning with a small group of students whose needs are not being met by the traditional classroom. Online learning will continue to grow until at some saturation point, the innovation will overtake the traditional model and becomes the new way of doing schooling (Webb, 2009; Umpstead, 2009).

The innovative part of virtual schools is the flexibility (Webb, 2009; Umpstead, 2009), not that it is online. A student has flexible start dates and can work at his/her own pace through the curriculum with a certified teacher's support. Why does this have the attention of students and parents? We live in a now world. Today, you can logon to a website, order it, and have the item delivered to your door step. That is an unprecedented change in meeting customer demand. Numerous traditional school districts believe they

have a monopoly on education. Students and parents are finding out they have many online learning choices (Webb; Umpstead, 2009).

Christensen, Johnson, and Horn (2008) cite four reasons for the inevitable transformational shift in the secondary education delivery method. The reasons are software advances, brain research, teacher shortages, and budget constraints. Schools must prepare for the growing demand of online courses and start taking advantage of all the benefits online learning offers (Umpstead, 2009).

During the of Fall 2008, the Speak Up for the 2009 Trends Update report examined data from more than 335,000 K-12 students, teachers, administrators, and parents across the nation and found an increasing acceptance and awareness of online learning (Project Tomorrow, 2009). The 2007 Phi Delta Kappa/Gallup poll of the public's attitudes toward the public schools found that 41 percent of respondents approved of the practice of earning high school credits over the Internet compared to 30 percent in 2001 (Clark, 2008). Adding to the evidence toward online classes, students have openly acknowledged that they have to power down when they enter the school building, and then power back up to resume their technology infused lives outside of school (Project Tomorrow). Technology access has empowered students to become free agent learners and they are less dependent on traditional education for knowledge. It is becoming increasing clear that students are leading the way as a digital advance team illuminating a path for our nation on how to leverage emerging technologies like online learning for effective teaching and learning. Although few opportunities exist to take online courses, students report widespread interest in online learning. Teachers will have

to be prepared to teach online, not just take professional development classes online for online learning to be embraced in schools (Project Tomorrow).

The North Central Regional Educational Laboratory (NCREL) points out online learning, also known as electronically delivered learning or e-learning, is one of the most important and potentially significant new instructional approaches available for supporting the improvement of teaching and learning in America's K-12 schools today (Blomeyer, 2002). According to a report of the National Association of State Boards of Education, "E-learning will improve American education in valuable ways and should be universally implemented as soon as possible" (NASBE, 2001, p. 4). This relative new technology needs to be explored further on how to improve it.

Culture

Culture is one aspect which can be explored in virtual schools to help us better understand school improvement efforts and student achievement. Culture has been investigated in traditional schools, yet very little research exists on culture in virtual schools.

Researchers differ on a definition of organizational culture. Some assert that organizations have culture; others claim organizations are cultures (Bolman & Deal, 2003). Deal and Kennedy (1982) define culture more succinctly as "the way we do things around here" (p. 4). Schein (1992) offers a more formal definition of culture as:

> a pattern of shared basic assumptions that a group learned as it solved its problems of external adaption and integration that has worked well enough to be considered valid and therefore to be taught to new members as the correct way to perceive, think, and feel in relation to those problems (p. 12).

According to Bolman and Deal,

> Culture is both a product and process. As a product, it embodies accumulated wisdom from those who came before us. As a process, it is constantly renewed and re-created as newcomers learn the old ways and eventually become the teachers themselves. (p. 243-244).

Bates (1992) defines culture as "the framework that connects beliefs, values, and knowledge with action" (p. 68). Culture is conveyed by the feel or climate, the way members of the school interact with students, parents, or other outsiders (Weaver, 1996). Bruner (1996) describes culture as "all about a mode of coping with human problems; with human transactions of all sorts, depicted in symbols" (p. 99). Deal (1990) states "Culture consists of the stable, underlying social meanings that shape beliefs and behavior over time" (p. 7). Hofstede (1997) says "Culture is defined as the collective programming of the mind which distinguishes the members of one group or category of people from another" (p. 180). Geertz (1973) defines culture as a historically transmitted pattern of meaning expressed both explicitly through symbols and implicitly in our taken for granted beliefs. These definitions of culture profile a theme of patterns of behavior and relationships that are learned, shared, and passed on to new members (Gruenert, 1998).

Schlechty (1997) writes, "Structural change that is not supported by cultural change will eventually be overwhelmed by the culture, for it is in the culture that the organization finds meaning and stability" (p. 136). Teachers working in schools with strong collaborative cultures act differently from those depending on administrators to create the conditions of their work (Kohm & Nance, 2009). With collaborative cultures,

teachers exercise creative leadership collectively and assume responsibility for helping all students learn. Rising expectations call for more collaboration not less. Administrators and schools needing to raise achievement and improve schools are driving with the brakes on unless cultures are built. School leaders can foster culture that leads to collaboration by sharing responsibility with teachers and helping develop skills fostering collaborative problem solving (Kohm & Nance). Bolman and Deal (2003) identified four ways that culture is present in schools: a) rituals and ceremonies; b) heroes and heroines; c) stories and tales; and d) rewards and reinforcements. Each can be used to nurture a greater commitment to a rigorous academic experience for the students (Williamson & Blackburn, 2009).

Scholars agree that all organizations have a culture regardless of whether it is positive, collaborative, or toxic. In the school cultures that are toxic, the social milieu is so negative that it discourages the most positive individual (Deal & Peterson, 1999). Still, leadership can shape culture to be positive and collaborative (Deal & Peterson).

Organizational Culture

Schein (1992), considered a leading expert in the field of organizational culture, identified three levels of culture. They are: a) artifacts – visible organizational structures and processes, b) espoused beliefs and values – strategies, goals, philosophies, and c) underlying assumptions – unconscious, taken for granted beliefs, perceptions, thoughts, and feelings.

Similar to the quandary of defining culture, the notion of organizational culture does not have a widespread definition. According to Valentine (1992), "The culture is an intangible, pervasive presence of being that is felt by members of the organization" (p. 8).

Culture is to an organization as what personality is to a human being (Valentine, 1992; Schein, 2004). Organizational missions and goals are defined by culture and it establishes the beliefs held in high esteem. Culture has been "derived metaphorically from the idea of cultivation: the process of tilling and developing the land" (Morgan, 2006, p. 116). The agricultural metaphor leads to thinking of specific aspects of social development and is relevant to understanding organizations (Morgan).

Research on organizational culture began in the 1930s and 1940s. Barnard (1938) and Mayo (1945) originally conceptualized the workplace as the "norms, sentiments, values, and emergent interactions" of an organization. Anthropology is the origin of the concept of organizational culture (Dumay, 2009). Smircich (1983) defined organizational culture as "systems of meanings which are shared to varying degrees." Later, Reichers and Sneider (1990) premised that organizational culture is a common set of shared meanings or understandings about the organization or group and its problems, goals, and practices.

Maslowski (2006) identified three important aspects of culture: content, homogeneity, and strength. Content describes the meaning of basic assumptions, norms, and values shared by members of the organization. Homogeneity, the second element, refers to the extent to which the basic assumptions, norms, values, and cultural artifacts are shared by organizational members. The third aspect identified by Maslowski, strength of culture, refers to the degree to which the behavior of the organization members is actually influenced or determined by the assumptions, values, norms, and artifacts shared by the organization (Dumay, 2009). Other authors have identified four core underlying features in organizational culture: a) it is stable and resistant to change; b) it is taken for

granted and less consciously held; c) it serves its meaning from the organization's members; and d) it incorporates sets of shared understandings (Hofstede, Neuijen, Ohayv & Sanders, 1990; Kilman, Saxton & Serpa, 1985; Reichers & Schneider, 1990; Schein, 1990; Siehl & Martin, 1990; Langan-Fox & Tan, 1997).

School Culture

School culture is an emerging idea in educational leadership. Many scholars have written about the topic (Cunningham & Gresso, 1993; Gruenert, 2000; Brinton, 2007; Sergiovanni, 1994). Wagner (2006) describes school culture as shared experiences both in and out of school (traditions and celebrations), a sense of community, family, and team. Evidence of culture include: staff stability and common goals permeate the school; curricular and instructional components are established through consensus along with order and discipline; open and honest communication is encouraged and staff demonstrate humor and trust; stakeholders are recognized in school wide celebrations; and the school's leaders and district leaders provide tangible support. School culture represents the underlying assumptions and beliefs developed through earlier problem solutions, which help to define reality within an organization (Angelides & Ainscow, 2000). In their definition, Hoy, Tarter, and Kottkamp (1991), attempted to synthesize the various definitions of school culture and suggest it is "a system of shared orientations (norms, core values, and tacit assumptions) held by members who hold the unit together and gives it a distinct identity" (p. 5). Deal and Kennedy (1982) define school culture as "the way we do things around here" and consists of the organization's shared beliefs, rituals, ceremonies, and patterns of communication.

The concept of school culture has evolved over time. In 1932, Willard Waller wrote: "Schools have a culture that is definitely their own…complex rituals of personal relationships, folkways, mores, and irrational sanctions, a moral code based upon them" (p. 96). Waller's observations in education are still relevant today (Deal & Peterson, 1999). People create culture; thereafter it shapes them (Deal & Peterson). Schools will not become what students deserve until cultural patterns and ways are shaped to support learning (Deal & Peterson).

School culture consists of "beliefs, attitudes, and behaviors which characterize a school" (Phillips, 1996, p. 1). Healthy organizations have people who must have agreement on how to do things and what is worth doing (Wagner, 2006). School culture is the set of norms, values, and beliefs, rituals and ceremonies, symbols and stories that make up the persona of the school (Peterson, 2002). What educators espouse is a powerful indicator of the values and beliefs that form their school's culture (Reed, 2009). There is normally a link between student achievement and the relationships among adults in a school (Brky & Schneider, 2002). Looking at schools through the culture lens focuses on the relationships among the adults in the building (Gruenert, 2005). As early as the 1930s, sociologists recognized the importance of school culture. Yet despite its importance, organizational culture is possibly the least discussed element of practical conversations on improving student achievement (Jerald, 2006).

Leadership

Leadership and culture are so closely connected that "leadership and culture may be two sides of the same coin" (Schein, 2004). All schools have culture strong or weak,

functional or dysfunctional. Successful schools seem to have strong, functional cultures aligned with a vision of excellent schooling.

Recognizing, acknowledging and understanding culture is essential to leading the organization and ultimately enabling change and progress (Lynch, 2006). Deal and Peterson (1999) wrote:

> We believe the term culture provides a more accurate and intuitively appealing way to help school leaders better understand their school's own unwritten rules and traditions, norms, and expectations that seem to permeate everything: the way people act, how they dress, what they talk about or avoid talking about, whether they seek out colleagues for help or don't, and how teachers feel about their work and their status (p. 2).

Every school has a culture, a history and underlying set of unwritten expectations shaping the school (Peterson, 2002). A school culture influences the way its members think, feel, and act. Understanding and shaping the culture is key to a school's success in student learning and school improvement (Peterson). As Fullan (2001) noted recently, "Reculturing is the name of the game." Leaders can and should shape school culture (Peterson).

School leaders are key players to building positive cultures and eliminating toxic culture (Peterson & Deal, 1998). Some schools have become toxic over time where the purpose of serving students had been lost to the goal of serving adults, where negative values and hopeless reign (Peterson & Deal). According to Lynch (2006), "As a leader, culture in an organization provides the framework within which you work every day" (p. 20). Cultures that are healthy have positive interactions; important traditions and avenues

to celebrate make work joyful in the organization (Lynch). On the other hand, students suffer when school cultures are not healthy or are toxic.

Principals are leaders within schools. All roles and responsibilities of the school principal are important, but creating a positive school culture is imperative (Habegger, 2008; Rooney, 2005). Principals that work deliberately at building culture know it is at the heart of school improvement and growth (Habegger; Peterson & Deal, 1998). The cultural leader assumes the role of high priest, seeking to define, strengthen, and articulate the enduring values, beliefs, and culture strands giving the school its identity of culture (Sergiovanni, 1984).

Leadership is about leading within the context of an organization (Ohm, 2006). Leaders arise out of the culture in which they lead. Successful leaders have learned to view their organizations in a holistic way – as a school culture (Stolp, 1996). Leadership is about creating the conditions for learning (Fullan, 1991). School leaders shaping their cultures to become more collaborative should reap the benefits of greater teacher performance and satisfaction; and student performance (Barth, 1990; Deal & Peterson, 1999; Fullan, 1991; Fullan & Hargreaves, 1996; Leiberman, 1990; Pounder, 1998; Scott & Smith, 1987; Sergiovanni, 1994; Smith & Stolp, 1994). Leaders influence followers (Bolman & Deal, 2003; Morgan, 2006; Yukl, 2006).

Leadership is one of the most observed and least understood phenomena on earth (Burns, 1978). Rost (1992) emphasized relationships between leaders and followers. Leadership is not what the leader does but what the leaders and collaborators do together in organizations. According to Rost, leaders and followers develop mutual purposes rather than goals. A collaborative leader is keenly aware that power over does not work

independent of his/her own reporting channels (Avery, 1999). Collaborative leaders know the largest opportunity to add value is not assigned to anyone (Avery).

Collaboration

Collaboration means working together jointly, especially in intellectual endeavors (*Collaboration*, 2010). Creating and sustaining collaborative cultures take work, effort, and focus (Akhavan, 2005). By admitting our mistakes and collaboratively seeking answers, a school team can build a culture of collegiality (Marzano, 2003).

Teachers' work engages them continuously in social aspects of schools (Johnson & Donaldson, 2005). In spite of the frequency of interactions with colleagues, principals, students, and parents, there is no guarantee that teachers will find support. Two teachers working next door to each other provide no assurance they will collaborate as colleagues. Although, there is evidence that today's teachers value collegial work (Kardos, 2004; National Education Association [NEA], 2003), it has not always been the case. Lortie (1975) reported teachers prized the privacy of their classroom and routinely worked in isolation. School walls "are perceived as beneficial; they protect and enhance instruction… other adults have potential for hindrance but not for help" (Lortie, p. 169). Over the years, the trend has changed. Johnson (1990) found that teachers wanted more interaction. It was believed that interdependent work with colleagues contributed to effectiveness in the classroom. The increasing teacher collaboration is noted on the annual National Education Association survey (NEA, 2003). Collaboration has ranked in the top six factors that help teachers teach well since 1956. From 1996 forward, however, teachers ranked it as number one (NEA).

Collaboration makes sense in leadership of schools (Evans & Teddlie, 1995; Johnson & Asera, 1999; Riordan & da Costa, 1998; Thomas, 1997), nevertheless the traditional culture of education still holds to the value of autonomy and individualism, promoting isolation. Collaborative school cultures are places where teachers work together in a collegial climate (Gruenert, 2005). Cultural connections and conventional relationships are the foundational pillars of collaborative cultures (Sergiovanni, 2004). Norms build trust, identity, and efficacy that are foundational to effective collaborative cultures (Sergiovanni). Norms and leadership, by definition, go together. Thus, leadership effectiveness is measured by its effect on cultural norms and shared leadership blends with collaborative culture (Sergiovanni).

Shared leadership and decision making is a primary component of a school's collaborative culture (Lummis, 2001). In a collaborative culture, members of the school community work together effectively and are guided by a common purpose and share a common vision of what the school should be like.

Summary

Chapter two provided a deeper literature review to inform the reader and support the study. Areas reviewed included virtual schools, school reform, culture, organizational culture, school culture, leadership, and collaboration.

In chapter three, the methodology used in the case study is described. The statement of the problem is given followed by the purpose of the study being presented. Research questions were outlined to guide the study. The self-selected participants along with research design are described. Instrumentation, testing the instrument and data collection, variables and measures, and proposed data analysis complete chapter three.

CHAPTER THREE

METHODOLOGY

The number of K-12 students engaged in online courses in 2007-2008 in the United States is estimated at 1,030,000, roughly 2% of the overall K-12 student population (Watson et al., 2009), representing a 47% increase since 2005-2006 (Picciano & Seaman, 2009). The International Association for K-12 Online Learning (iNACOL) reports an estimated 320,000 course enrollments in state virtual schools and 175,000 full-time students in full-time online schools in the United States (Watson et al.). Clearly, virtual education is growing at a high rate. Students and their families are increasingly connecting to the virtual school for teaching and learning, and its accessibility options (Watson et al.). This growing phenomenon cannot and should not be ignored by educational leaders. The importance of the underlining culture of virtual schools could have a significant effect on student achievement and school improvement efforts.

Culture and especially collaborative culture has played a vital role in having a positive effect on student achievement and school improvement in traditional schools (Brky & Schneider, 2002; Dumay, 2009; Gruenert, 2005; Lummis, 2001). While traditional school culture has been studied, virtual school culture, specifically collaborative culture, has not been studied or correlated with student achievement and school improvement efforts. Virtual schools are growing rapidly, yet little is known about the culture of virtual schools. Gruenert (1998) and Brinton (2007) conducted research in the past on the culture of traditional high schools, but little or no research exists on the virtual school culture. This study seeks to bridge that gap.

Statement of the Problem

Virtual education is relatively new and there is little published information examining the culture of virtual schools. The *School Culture Survey-Teacher Form* (Appendix A), developed by Gruenert (1998), was designed to determine the culture perceptions of teachers in the traditional schools. Yet, no known instrument exists to quantify the teacher perceptions in virtual school environments. This study seeks to test and adapt the *School Culture Survey-Teacher Form* (SCS-TF) to determine if it is a valid and reliable survey instrument for measuring culture in a virtual school. In addition, the study will report the culture perceptions of teachers in the Selected Virtual School (SVS). Furthermore, this study seeks to gain information from the adapted SCS-TF to provide a better understanding of collaborative culture in virtual schools, thereby improving the probability for student achievement gains and virtual school improvement efforts.

Purpose of the Study

This study had a dual purpose. First, this study created a parallel instrument to the *School Culture Survey-Teacher Form* (SCS-TF) to assess the culture perceptions of virtual school teachers. The original SCS-TF has been validated for traditional certified educators, but no parallel instrument has been created to assess perceptions of virtual school certified educators. This study adapted the SCS-TF as a valid and reliable instrument for measuring culture perceptions in a virtual school. Second, this study also reported teacher perceptions about their culture experiences in virtual schools. Statistical techniques and analysis to answer the research questions are described in Table 1.

Table 1

Summary Listing of Statistical Techniques Applied to Research Questions

Research Questions	Description	Statistical Technique	Anticipated Outcome
RQ1	Snap shot of study group characteristics and perceptions	Descriptive Statistics	Summary statistics established on teacher perception of the SVS culture. Frequencies and percentages for each nominal item; mean and SD for each scale item and subscale
RQ2	Reliability	Cronbach's Alpha and Item Total Reliability Analysis	Reliability and internal consistency for the VSCS-TF will be established. Field's criteria of 0.80 will be applied for Cronbach's Alpha; and rho=0.3 for Item-Total Analysis
RQ3	Face, content, and confirmatory construct validity	Expert panel, Gruenert (1998), Factor Analysis with varimax rotation eg=1.0 or higher.	Face, content, and construct validity for the VSCS-TF will be established
RQ4	Survey items that discriminate between groups	MANOVA	Significant survey items identified. If n>=100, Alpha level = .05; if n<100, Alpha level = .10
RQ5	Group Membership	Discriminant Analysis	Membership predicted from significant differences by cluster. If n>=100, Alpha level = .05; if n<100, Alpha level = .10

Research Questions and Null Hypotheses

The following research questions and null hypotheses were developed to guide the study.

1. What are teacher perceptions of the Selected Virtual School (SVS) culture by item and by subscale components as measured with the adapted *School Culture Survey-Teacher Form* or *Virtual School Culture Survey-Teacher Form* (VSCS-TF) and reported by demographics?

2. How many items have internal consistency and are reliable on the *Virtual School Culture Survey-Teacher Form* (VSCS-TF)?
3. Can face, content, and confirmatory construct validity be established for the VSCS-TF?

   Ho3: Confirmatory construct validity cannot be established for the VSCS-TF.
4. Can survey items be identified that discriminate between demographic categories defined within the independent variables of gender, highest degree held, teaching grade level, subject/content area, years of experience in virtual education, and total years of experience?

   Ho4: Significant items cannot be identified to discriminate between or among demographic categories for the independent variables.
5. Are there significant clusters of survey items that predict group membership?

   Ho5: There are no significant item clusters that will predict group membership.

Self-Selected Participants

The Selected Virtual School (SVS), research site, is located in the Western United States. The school is a public, state funded virtual school available to resident students. The population for this study was the teachers in the SVS. These virtual teachers teach various subject/content areas in grades 7-12. Subjects taught include drivers education, electives, English, foreign language, health, mathematics, orientation, science, and social studies. In 2009, there were 225 teachers and 9500 projected students enrolled. Because students attend virtually, they can attend from anywhere in the state. Student enrollment continues to increase each year. Notable is the growth of over 50% per year after piloting classes in Fall 2002 and Spring 2003 serving 860 enrollments (see Table 2). The goal of

SVS is to provide choice, accessibility, flexibility, quality, and equity in curricular offerings for students in the state.

Surveys were sent to all SVS teachers creating a case study population size of approximately 225 teachers. The sample size, however, depended on the number of teachers agreeing to participate in this study. The sample population was therefore described as self-selected SVS teachers. Use of a sample size calculator provided calculations for the sample size (Creative Research Systems, 2010). With a target population of 225 virtual school teachers and a 95% confidence level with a confidence interval of 10, a sample size of 68 is acceptable for this study.

Table 2

Selected Virtual School Enrollments and Projections

Semester	Actual 2003-2004	Actual 2004-2005	Actual 2005-2006	Actual 2006-2007	Actual 2007-2008	Projected 2008-2009
Summer	358	544	775	929	1796	2799
Fall	346	422	809	1255	2181	3285
Spring	458	599	929	1498	2642	3416
TOTAL	1162	1565	2513	3682	6619	9500

Research Design

Collaborative cultures in traditional high schools are an important feature for improving student achievement as research has pointed out (Brinton, 2007; Brky & Schneider, 2002; Dumay, 2009; Gruenert, 2005; Jerold, 2006; Lummis, 2001). The *School Culture Survey-Teacher Form* (Gruenert, 1998) instrument was developed to measure the teacher perceptions of collaborative culture in the traditional high school.

This is a quantitative case study using a non-probability sample Likert survey on teacher perceptions of the culture in the Selected Virtual School. Other demographics data were collected from the SVS teachers including gender, highest degree held,

teaching grade level, subject/content area, years of experience in virtual education, and total years of experience. An adapted version of the *School Culture Survey-Teacher Form* (SCS-TF) developed from an Expert Online Education Panel (EOEP) to establish face and content validity for the instrument, coupled with a request for demographic information was used to collect data. Fink (2006) states consistent information comes from a reliable survey. A valid survey produces accurate information.

With the original instrument, SCS-TF (Gruenent, 1998), a pilot survey was administered to 634 teachers in Indiana (Gruenert, 2005). A 79 item pilot survey was reduced to 35 items (see Table 3) using a varimax rotation, an item reduction method. A six factor instrument of 35 items emerged. Internal correlations and Cronbach's alphas were established for the six factor instrument. The reliability coefficients of the six factors were as follows: Collaborative Leadership (.910), Teacher Collaboration (.834), Unity of Purpose (.821), Professional Development (.867), Collegial Support (.796), and Learning Partnership (.658) (Gruenert, 1998). Validity was established using correlation methodology with the National Association of Secondary School Principals' CASE-IMS Climate Survey (Howard & Keefe, 1991). Table 3 illustrates the 35 items in the original SCS developed by Gruenert.

Table 3

School Culture Survey-Teacher Form Items

Items
1. Teachers utilize professional networks to obtain information and resources for classroom instruction.
2. Leaders value teachers' ideas.
3. Teachers have opportunities for dialogue and planning across grades and subjects.
4. Teachers trust each other.
5. Teachers support the mission of the school.
6. Teachers and parents have common expectations for student performance.
7. Leaders in this school trust the professional judgments of teachers.
8. Teachers spend considerable time planning together.

Items
9. Teachers regularly seek ideas from seminars, colleagues, and conferences.
10. Teachers are willing to help out whenever there is a problem.
11. Leaders take time to praise teachers that perform well.
12. The school mission provides a clear sense of direction for teachers.
13. Parents trust teachers' professional judgments.
14. Teachers are involved in the decision-making process.
15. Teachers take time to observe each other teaching.
16. Professional development is valued by the faculty.
17. Teachers' ideas are valued by other teachers.
18. Leaders in our school facilitate teachers working together.
19. Teachers understand the mission of the school.
20. Teachers are kept informed on current issues in the school.
21. Teachers and parents communicate frequently about student performance.
22. My involvement in policy or decision making is taken seriously.
23. Teachers are generally aware of what other teachers are teaching.
24. Teachers maintain a current knowledge base about the learning process.
25. Teachers work cooperatively in groups.
26. Teachers are rewarded for experimenting with new ideas and techniques.
27. The school mission statement reflects the values of the community.
28. Leaders support risk-taking and innovation in teaching.
29. Teachers work together to develop and evaluate programs and projects.
30. The faculty values school improvement.
31. Teaching performance reflects the mission of the school.
32. Administrators protect instruction and planning time.
33. Teaching practice disagreements are voiced openly and discussed.
34. Teachers are encouraged to share ideas.
35. Students generally accept responsibility for their schooling, for example they engage mentally in class and complete homework assignments.

Instrumentation

A two-part instrument (Appendix B) was employed for data collection in this research study: the *Virtual School Culture Survey-Teacher Form* (VSCS-TF) or adapted *School Culture Survey-Teacher Form* (SCS-TF) combined with a request for six demographic items to be addressed. Screen shots of the Web-based dyad survey are presented in Appendix C. An Expert Online Education Panel (EOEP) was utilized to adapt the SCS-TF. The EOEP members analyzed and provided feedback on the face and content validity to modify the survey. Items 27, 31, and 33 were deleted as a result of the

EOEP's recommendations. An additional question (question 9) was modified on the VSCS-TF. The end result was the VSCS-TF totaling 32 survey items. Participants were asked to respond to the electronic Web based survey with radio buttons for the demographics questionnaire and the VSCS-TF survey. The original SCS-TF was designed by Gruenert (1998) to measure culture in traditional schools. Permission was granted from the original survey author (Gruenert) to utilize and reprint the SCS-TF in this study (Appendix D). An adapted version of the SCS-TF or VSCS-TF, in electronic form, was used to measure culture in the Selected Virtual School. The VSCS-TF was a Web based or electronic survey. A case study survey or posttest only non-experimental design was applied to investigate the research questions.

Testing the Instrument and Data Collection

A trial run was conducted with an Expert Online Education Panel (EOEP) having experience with online classes at the researcher's local state virtual school. Each panel member was selected because of individual expertise and experience in virtual schools. The members were acting as individual professionals and not as school district representatives. Conducting a local trial run allowed the researcher to question participants for suggestive feedback on the survey, gather information for face and content validity, and additionally help eliminate researcher bias. The EOEP provided the needed feedback to modify the survey. The survey was then administered to the selected sample population.

Participants of this research study were contacted by a third party, a supervision and development director at SVS, via a cover letter e-mail (Appendix E) to ensure confidentially and avoid the appearance of power over. An invitation and informed

consent (Appendix F) was utilized to invite participants to engage in the survey. The objective was to gather information about the culture in the Selected Virtual School utilizing the *Virtual School Culture Survey-Teacher Form* (VSCS-TF). The SVS third party sent an e-mail containing a Web site address where the VSCS-TF could be found, a password to enter the survey, and a due date for completion. Each respondent was asked to respond to the adapted survey items on a Likert scale of 1 to 5 with 1 being strongly disagree and 5 being strongly agree. A follow-up/reminder email (Appendix G) contact was sent to increase response rate through the SVS third party. Upon completion of the survey, each respondent was sent a final email (Appendix H) thanking them for their response and offering to share an executive summary of results after completion of the study with any participant who might be interested. Approval for the study was granted from the University of Missouri – Columbia Institutional Review Board (IRB) and the Northwest Missouri State University IRB.

Survey responses were recorded in a database and spreadsheet and transferred to the Predictive Analytics SoftWare (PASW) Statistics (PASW Statistics 18, 2010) program for analysis. Descriptive statistics were calculated and data relationships were transferred in spreadsheets to the PASW for analysis.

Variables and Measures

Variables used in the survey have been summarized in Tables 4 and 5. The variables consisted of six independent variables that group respondents by common demographic characteristics and six dependent variables that group responses by factor categories. The independent demographic variables included gender, highest degree held, teaching grade level, subject/content area, years of experience in virtual education, and

total years of experience. The dependent variables included Collaborative Leadership, Teacher Collaboration, Professional Development, Collegial Support, Unity of Purpose, and Learning Partnership.

Table 4

Summary of Independent Variables in the Survey

Independent Variables
Gender (female, male)
Highest degree held (BS/BA, MS/MA/MEd, EdS, EdD/PhD)
Teaching grade level (7-8, 7-12, 9-12)
Subject/content area (Drivers Ed., Electives, English, Foreign Language, Health, Math, Orientation, Science, Social Studies)
Years of experience in virtual education (under 5 years, 5-9 years, 10-14 years, 15 years or more)
Total years of experience in education (under 5 years, 5-9 years, 10-14 years, 15-19 years, 20-24 years, 25-29 years, 30 years or more)

Data Analysis

To begin the data analysis process, descriptive statistics were calculated to summarize and describe the data collected in Research Question (RQ) 1. This data included frequencies, percentages, mean, and standard deviation for each item and subscale; and demographic data by frequency and percent. RQ2 utilized Cronbach's alpha and item total analysis to establish reliability and internal consistency for the adapted survey items. Field's (2005) criterion of 0.80 was applied for Cronbach's alpha. The correlation coefficient of rho=.3 for item total analysis was utilized.

In addressing RQ3, construct validity has been tested through the statistical techniques of Cronbach's alpha (Gruenert, 1998). Confirmatory construct validity was tested through principal component factor analysis with varimax rotation. The level of probability indicated for statistical significance was set at $p < .05$ (Field, 2005). A scree plot was analyzed to determine the relative importance of each factor. An eigenvalue of

over one represented a substantial amount of variance (Field). Data reduction analysis criteria recommended by Gruenert (1998) was followed to determine which factors and items to retain: "(a) a loading of 0.50 or higher, (b) cross-loading items must have a difference of 0.15 or higher, and (c) there must be a minimum of three items per factor" (p. 68). Additionally, face validity and content validity was established through utilization of an Expert Online Education Panel.

RQ4 was analyzed by the statistical techniques of a MANOVA to identify survey items discriminating between groups. RQ5 required the statistical techniques of a discriminant analysis to determine significant item clusters that predicted group membership.

Survey results were measured by subscale. There were six subscales, representing the six dependent variables. Responses from the adapted survey were coded on a Likert scale from 1- Strongly Disagree to 5 – Strongly Agree depending on the degree the statement describes the conditions in the Selected Virtual School (see Table 5). One represented strongly disagree, two represented disagree, three represented neutral, four represented agree, and five represented strongly agree. The code for all survey items in the same subscale were summed together and averaged for a composite score per subscale category. This subscale average composite score was used for statistical analysis. The Predictive Analytics SoftWare (PASW) Statistics (PASW Statistics 18, 2010), a statistical software program, was used for in-depth data analyses.

Table 5

Dependent Variables Identified with Virtual School Culture Survey-Teacher Form Items

Dependent Variables	Range	Items
Subscale factors	Likert (1-5)	
Collaborative Leadership	11-55	2, 7, 11, 14, 18, 20, 22, 26, 27, 30, 31
Teacher Collaboration	5-25	3, 8, 15, 23, 28
Professional Development	5-25	1, 9, 16, 24, 29
Collegial Support	4-20	4, 10, 17, 25
Learning Partnership	4-20	6, 13, 21, 32

Summary

Chapter three described the proposed methodology used within the study. The statement of the problem was given followed by the purpose of the study. Research questions were outlined to guide the study. The self-selected participants along with the research design were discussed. Instrumentation, testing the instrument and data collection, variables and measures, and proposed data analysis completed chapter three. Chapter four will provide the findings of the reliability and validity of the survey instrument and data derived from self reported teacher perceptions in the Selected Virtual School survey while chapter five will discuss findings, implications, conclusions, and recommendations for virtual school leaders and future research.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

The *School Culture Survey-Teacher Form* (Gruenert, 1998), located in Appendix A, was designed to determine the culture perceptions of teachers in traditional schools. Based upon the work of Gruenert, this study has a dual purpose. First, this study adapted the *School Culture Survey-Teacher Form* (SCS-TF) to measure the culture perceptions of virtual school teachers. The original SCS-TF has been determined to be reliable and valid for the certified educator teacher perceptions of culture in a traditional school setting, but no parallel instrument has been created to assess teacher perceptions of culture in the virtual school. Second, this study reported descriptive statistics of teacher perceptions about their culture experiences in the Selected Virtual School. Other data were collected about virtual teachers including gender, highest degree held, teaching grade level, subject/content area, years of experience in virtual education, and total years of experience. Survey data were collected via the adapted SCS-TF or *Virtual School Culture Survey-Teacher Form* (VSC-TF), located in Appendix B, and analyzed. The following research questions and null hypotheses were addressed in this study.

1. What are teacher perceptions of the Selected Virtual School (SVS) culture by item and by subscale components as measured with the adapted *School Culture Survey-Teacher Form* or *Virtual School Culture Survey-Teacher Form* (VSCS-TF) and reported by demographics?
2. How many items have internal consistency and are reliable on the *Virtual School Culture Survey-Teacher Form* (VSCS-TF)?

3. Can face, content, and confirmatory construct validity be established for the VSCS-TF?

   Ho3: Confirmatory construct validity cannot be established for the VSCS-TF.

4. Can survey items be identified that discriminate between demographic categories defined within the independent variables of gender, highest degree held, teaching grade level, subject/content area, years of experience in virtual education, and total years of experience?

   Ho4: Significant items cannot be identified to discriminate between or among demographic categories for the independent variables.

5. Are there significant clusters of survey items that predict group membership?

   Ho5: There are no significant item clusters that will predict group membership.

Review of Research Design

This was a quantitative case study using a non-probability sample Likert survey on teacher perceptions of the culture in the Selected Virtual School. Other demographic data were collected from the SVS teachers to include gender, highest degree held, teaching grade level, subject/content area, years of experience in virtual education, and total years of experience. An adapted version of the *School Culture Survey-Teacher Form* (SCS-TF) or *Virtual School Culture Survey-Teacher Form* (VSCS-TF) was developed from an Expert Online Education Panel (EOEP) to establish face and content validity for the instrument. The VSCS-TF coupled with a request for demographic information was used to collect data. Fink (2006) states consistent information comes from a reliable survey. A valid survey produces accurate information. A case study survey or posttest only non-experimental design was applied to investigate the research questions.

Surveys were sent to all Selected Virtual School (SVS) teachers creating a case study population size of approximately 225 teachers. The sample size was dependent on the number of teachers agreeing to participate in this study. The sample population was therefore described as self-selected SVS teachers. Use of a sample size calculator provided calculations for the sample size (Creative Research Systems, 2010). With a target population of 225 virtual school teachers and a 95% confidence level with a confidence interval of 10, a minimum sample size of 68 was generated using the calculator to determine the recommended number for this study.

Data Collection

Participants of this research study were contacted by a third party, a supervision and development director at the Selected Virtual School, via a cover letter e-mail (Appendix E) to ensure confidentially and avoid the appearance of power over. Surveys were conducted electronically by utilizing SurveyMonkey. Data were downloaded from SurveyMonkey, the survey collector, into Excel and loaded in the Predictive Analytics SoftWare (PASW) Statistics (PASW Statistics 18, 2010) statistical analysis software program. The invitation (Appendix F) yielded 83 respondents who chose to participate. Five participant survey responses were unusable because of incomplete answers to survey items. This provided 78 useable surveys for the study resulting in a 35% usable survey return rate.

Findings

Results of the study were used to address five research questions. Findings are reported by each research question.

Research Question One

Research question one asked what are teacher perceptions of the Selected Virtual School (SVS) culture by item and by subscale components as measured with the adapted *School Culture Survey-Teacher Form* or *Virtual School Culture Survey-Teacher Form* (VSCS-TF) and reported by demographics. Since the data were nominal, frequency and percentages were reported to show results (P. Messner, personal communication, July 2010).

Demographic breakdown by gender, highest degree held, and teacher grade level. Of the 78 survey respondents, 22 (28.2%) were males and 56 (71.8%) were females. Thirty-eight (48.7%) had a bachelors degree, and forty (51.3%) had a masters degree or higher. Two of the masters or higher degree teachers held a specialists degree and were added to the total. One indicated teaching at the 7-8 level and was added to the 7-12 grade level. Therefore, totals at the 7-12 grade level were twenty-three (29.5%). Fifty-five (70.5%) were teaching at the 9-12 grade level. Table 6 displays study group demographics in frequency and percent for gender, highest degree held, and teaching grade level.

Table 6

Demographic Breakdown of the Study Group by Gender, Highest Degree Held, and Teacher Grade Level (n=78)

Gender	Highest degree held	Teacher grade level
Male=22 (28.2%)	Bachelors=38 (48.7%)	7-12=23 (29.5%)
Female=56 (71.8%)	Masters or higher=40 (51.3%)	9-12=55 (70.5%)

Demographic breakdown by subject/content area, years of experience in virtual education, and total years of experience in education. Table 7 indicates frequency and percent of the demographic breakdown of the study group by subject/content area.

Driver's education and orientation had no responses and therefore were excluded from the table. English had the most responses with 17 (21.8%) followed by social studies with 16 (20.5%). Table 7 also depicts the years of experience in virtual education of the study group. Fifteen years or more had no responses and was not included in the table. Also 10-14 years had only one response and was added to the 5 years or more group. Fifty-nine (75.6%) of the responses were under 5 years highlighting the relatively newness of virtual schools. The total years of experience in education of the respondents is shown in Table 7. The largest group was 10-14 years with 22 (28.2%). The 25-29 years group had only three respondents and was added to the 20-29 years.

Table 7

Demographic Breakdown of the Study Group by Subject/Content Area, Years of Experience in Virtual Education and Total Years of Experience in Education (n=78)

Subject content area	Years of experience in virtual education	Total years of experience in education
Electives=7 (9.0%)	Under 5 years=59 (75.6%)	Under 5 years=11 (14.1%)
English=17 (21.8%)	5 years or more=19 (24.4%)	5-9 years=20 (25.6%)
Foreign Lang=9 (11.5%)		10-14 years=22 (28.2%)
Health=9 (11.5%)		15-19 years=7 (9.0%)
Math=10 (12.8%)		20-29 years=10 (12.8%)
Science=10 (12.8%)		30 years or more=8 (10.3%)
Social Studies=16 (20.5%)		

Gruenert's factors and survey items. Gruenert (1998) identified six factors from the original School Culture Survey using identical statistical parameters used in this research to determine the factors and items to retain: "(a) a loading of 0.50 or higher, (b) cross loading items must have a difference of 0.15 or higher, and (c) there must be a minimum of three items per factor" (p. 68). These six factors and the corresponding survey items are presented in Table 8.

Table 8

Dependent Variables Identified with School Culture Survey-Teacher Form Items

Dependent Variables	Range	Items
Subscale factors	Likert (1-5)	
Collaborative Leadership	11-55	2, 7, 11, 14, 18, 20, 22, 26, 28, 32, 34
Teacher Collaboration	6-30	3, 8, 15, 23, 29, 33
Professional Development	5-25	1, 9, 16, 24, 30
Collegial Support	4-20	4, 10, 17, 25
Unity of Purpose	5-25	5, 12, 19, 27, 31
Learning Partnership	4-20	6, 13, 21, 35

Virtual School Culture Survey-Teacher Form factors and survey items. An Expert Online Education Panel (EOEP) was utilized to adapt the SCS-TF. The EOEP members analyzed and provided feedback on the face and content validity to modify the survey. Items 27, 31, and 33 were deleted as a result of the EOEP's recommendations. An additional question (question 9) was modified on the VSCS-TF. The end result was the VSCS-TF totaling 32 survey items (Table 9). The VSCS-TF was administered to the SVS. The results follow.

Table 9

Dependent Variables Identified with Virtual School Culture Survey-Teacher Form Items

Dependent Variables	Range	Items
Subscale factors	Likert (1-5)	
Collaborative Leadership	11-55	2, 7, 11, 14, 18, 20, 22, 26, 27, 30, 31
Teacher Collaboration	5-25	3, 8, 15, 23, 28
Professional Development	5-25	1, 9, 16, 24, 29
Collegial Support	4-20	4, 10, 17, 25
Learning Partnership	4-20	6, 13, 21, 32

Collaborative Leadership (Gruenert) by gender. Table 10 displays the frequency and percent for the subscale, Collaborative Leadership, by gender by item of the teachers' responses to the survey. Item 22, policy involvement, shows 17 (77.3%) males agreeing.

Females indicate 36 (64.3%) agreed with item 31, share ideas. At the end of the table, the total for the average of all the responses is represented. On average, 60 of the 78 respondents (76.9%) agreed or strongly agreed that Collaborative Leadership occurred as measured by the 11 survey items within this construct. Many areas of interest are illustrated within the data in the tables. In the narrative however, Collaborative Leadership is highlighted with Tables 10 through 15.

Table 10

Frequencies and Percentages for Collaborative Leadership by Gender by Item (n = 78)

Item	Gender (n)	SD	D	N	A	SA
2. Ideas valued	Male (22)	0 (0.0%)	0 (0.0%)	0 (0.0%)	10 (45.5%)	12 (54.5%)
	Female (56)	0 (0.0%)	3 (5.4%)	7 (12.5%)	27 (48.2%)	19 (33.9%)
7. Teachers trusted	Male (22)	0 (0.0%)	0 (0.0%)	1 (4.5%)	8 (36.4%)	13 (59.1%)
	Female (56)	0 (0.0%)	2 (3.6%)	4 (7.1%)	34 (60.7%)	16 (28.6%)
11. Leaders praise	Male (22)	0 (0.0%)	0 (0.0%)	0 (0.0%)	12 (54.5%)	10 (45.5%)
	Female (56)	0 (0.0%)	3 (5.4%)	6 (10.7%)	29 (51.8%)	18 (32.1%)
14. Decision making	Male (22)	0 (0.0%)	0 (0.0%)	4 (18.2%)	14 (63.6%)	4 (18.2%)
	Female (56)	0 (0.0%)	9 (16.1%)	14 (25.0%)	25 (44.6%)	8 (14.3%)
18. Leaders facilitate	Male (22)	0 (0.0%)	2 (9.1%)	3 (13.6%)	13 (59.1%)	4 (18.2%)
	Female (56)	1 (1.8%)	2 (3.6%)	23 (41.1%)	26 (46.4%)	4 (7.1%)
20. Informed teachers	Male (22)	0 (0.0%)	0 (0.0%)	1 (4.5%)	10 (45.5%)	11 (50.0%)
	Female (56)	0 (0.0%)	1 (1.8%)	5 (8.9%)	28 (50.0%)	22 (39.3%)
22. Policy involvement	Male (22)	0 (0.0%)	0 (0.0%)	3 (13.6%)	17 (77.3%)	2 (9.1%)
	Female (56)	0 (0.0%)	3 (5.4%)	21 (37.5%)	24 (42.9%)	8 (14.3%)
26. Teachers rewarded	Male (22)	1 (4.5%)	1 (4.5%)	0 (0.0%)	15 (68.2%)	5 (22.7%)
	Female (56)	1 (1.8%)	2 (3.6%)	8 (14.3%)	30 (53.6%)	15 (26.8%)
27. Risk taking	Male (22)	0 (0.0%)	1 (4.5%)	2 (9.1%)	12 (54.5%)	7 (31.8%)
	Female (56)	1 (1.8%)	2 (3.6%)	15 (26.8%)	28 (50.0%)	10 (17.9%)
30. Instruction time	Male (22)	0 (0.0%)	1 (4.5%)	7 (31.8%)	8 (36.4%)	6 (27.3%)
	Female (56)	2 (3.6%)	5 (8.9%)	25 (44.6%)	21 (37.5%)	3 (5.4%)
31. Share ideas	Male (22)	0 (0.0%)	0 (0.0%)	2 (9.1%)	10 (45.5%)	10 (45.5%)
	Female (56)	0 (0.0%)	0 (0.0%)	7 (12.5%)	36 (64.3%)	13 (23.2%)
Total	n = 78	.5 (.6%)	3 (3.8%)	14 (17.9%)	40 (51.3%)	20 (25.6%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Collaborative Leadership (Gruenert) by highest degree held. Table 11 shows the frequency and percent for the subscale, Collaborative Leadership, by highest degree held

by item of the teachers' responses to the survey. Item 7, teachers trusted, illustrates 23 (60.5%) participants with a bachelors degree agreeing. Also, 60.5% of bachelors degree participants agreed with teachers rewarded and share ideas. Teachers with a masters degree shows 23 (57.5%) agreeing with share ideas. The total for the average of all the responses is represented at the end of the table. On average, 60 of the 78 respondents (76.9%) agreed or strongly agreed that Collaborative Leadership occurred as measured by the 11 survey items within this construct.

Table 11

Frequencies and Percentages for Collaborative Leadership by Highest Degree Held by Item (n = 78)

Item	Degree (n)	SD	D	N	A	SA
2. Ideas valued	Bachelors (38)	0 (0.0%)	2 (5.3%)	3 (7.9%)	20 (52.6%)	13 (34.2%)
	Masters or higher (40)	0 (0.0%)	1 (2.5%)	4 (10.0%)	17 (42.5%)	18 (45.0%)
7. Teachers trusted	Bachelors (38)	0 (0.0%)	1 (2.6%)	1 (2.6%)	23 (60.5%)	13 (34.2%)
	Masters or higher (40)	0 (0.0%)	1 (2.5%)	4 (10.0%)	19 (47.5%)	16 (40.0%)
11. Leaders praise	Bachelors (38)	0 (0.0%)	2 (5.3%)	2 (5.3%)	19 (50.0%)	15 (39.5%)
	Masters or higher (40)	0 (0.0%)	1 (2.5%)	4 (10.0%)	22 (55.0%)	13 (32.5%)
14. Decision making	Bachelors (38)	0 (0.0%)	4 (10.5%)	10 (26.3%)	18 (47.4%)	6 (15.8%)
	Masters or higher (40)	0 (0.0%)	5 (12.5%)	8 (20.0%)	21 (52.5%)	6 (15.0%)
18. Leaders facilitate	Bachelors (38)	1 (2.6%)	2 (5.3%)	10 (26.3%)	21 (55.3%)	4 (10.5%)
	Masters or higher (40)	0 (0.0%)	2 (5.0%)	16 (40.0%)	18 (45.0%)	4 (10.0%)
20. Informed teachers	Bachelors (38)	0 (0.0%)	1 (2.6%)	3 (7.9%)	20 (52.6%)	14 (36.8%)
	Masters or higher (40)	0 (0.0%)	0 (0.0%)	3 (7.5%)	18 (45.0%)	19 (47.5%)
22. Policy involvement	Bachelors (38)	0 (0.0%)	1 (2.6%)	13 (34.2%)	21 (55.3%)	3 (7.9%)
	Masters or higher (40)	0 (0.0%)	2 (5.0%)	11 (27.5%)	20 (50.0%)	7 (17.5%)
26. Teachers rewarded	Bachelors (38)	1 (2.6%)	1 (2.6%)	3 (7.9%)	23 (60.5%)	10 (26.3%)
	Masters or higher (40)	1 (2.5%)	2 (5.0%)	5 (12.5%)	22 (55.0%)	10 (25.0%)
27. Risk taking	Bachelors (38)	0 (0.0%)	2 (5.3%)	8 (21.1%)	21 (55.3%)	7 (18.4%)
	Masters or higher (40)	1 (2.5%)	1 (2.5%)	9 (22.5%)	19 (47.5%)	10 (25.0%)
30. Instruction time	Bachelors (38)	1 (2.6%)	2 (5.3%)	18 (47.4%)	12 (31.6%)	5 (13.2%)
	Masters or higher (40)	1 (2.5%)	4 (10.0%)	14 (35.0%)	17 (42.5%)	4 (10.0%)
31. Share ideas	Bachelors (38)	0 (0.0%)	0 (0.0%)	4 (10.5%)	23 (60.5%)	11 (28.9%)
	Masters or higher (40)	0 (0.0%)	0 (0.0%)	5 (12.5%)	23 (57.5%)	12 (30.0%)
Total	n = 78	.5 (.6%)	3 (3.8%)	14 (17.9%)	40 (51.3%)	20 (25.6%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Collaborative Leadership (Gruenert) by teaching grade level. Table 12 shows the frequency and percent for the subscale, Collaborative Leadership, by teaching grade level by item of the teachers' responses to the survey. Item 11, leaders praise, shows 16 (69.6%) 7-12 grade level respondents agreeing. Also, 7-12 grade level had 69.6% agreeing with share ideas, item 31. Teachers in 9-12 grade level had 32 (58.2%) agreeing with teachers rewarded. The total for the average of all the responses is represented at the end of the table. On average, 60 of the 78 respondents (76.9%) agreed or strongly agreed that Collaborative Leadership occurred as measured by the 11 survey items within this construct.

Table 12

Frequencies and Percentages for Collaborative Leadership by Teaching Grade Level by Item (n = 78)

Item	Grade level (n)	SD	D	N	A	SA
2. Ideas valued	7-12 (23)	0 (0.0%)	2 (8.7%)	2 (8.7%)	11 (47.8%)	8 (34.8%)
	9-12 (55)	0 (0.0%)	1 (1.8%)	5 (9.1%)	26 (47.3%)	23 (41.8%)
7. Teachers trusted	7-12 (23)	0 (0.0%)	1 (4.3%)	0 (0.0%)	15 (65.2%)	7 (30.4%)
	9-12 (55)	0 (0.0%)	1 (1.8%)	5 (9.1%)	27 (49.1%)	22 (40.0%)
11. Leaders praise	7-12 (23)	0 (0.0%)	0 (0.0%)	1 (4.3%)	16 (69.6%)	6 (26.1%)
	9-12 (55)	0 (0.0%)	3 (5.5%)	5 (9.1%)	25 (45.5%)	22 (40.0%)
14. Decision making	7-12 (23)	0 (0.0%)	5 (21.7%)	5 (21.7%)	10 (43.5%)	3 (13.0%)
	9-12 (55)	0 (0.0%)	4 (7.3%)	13 (23.6%)	29 (52.7%)	9 (16.4%)
18. Leaders facilitate	7-12 (23)	0 (0.0%)	1 (4.3%)	9 (39.1%)	12 (52.2%)	1 (4.3%)
	9-12 (55)	1 (1.8%)	3 (5.5%)	17 (30.9%)	27 (49.1%)	7 (12.7%)
20. Informed teachers	7-12 (23)	0 (0.0%)	1 (4.3%)	2 (8.7%)	10 (43.5%)	10 (43.5%)
	9-12 (55)	0 (0.0%)	0 (0.0%)	4 (7.3%)	28 (50.9%)	23 (41.8%)
22. Policy involvement	7-12 (23)	0 (0.0%)	1 (4.3%)	7 (30.4%)	14 (60.9%)	1 (4.3%)
	9-12 (55)	0 (0.0%)	2 (3.6%)	17 (30.9%)	27 (49.1%)	9 (16.4%)
26. Teachers rewarded	7-12 (23)	1 (4.3%)	1 (4.3%)	2 (8.7%)	13 (56.5%)	6 (26.1%)
	9-12 (55)	1 (1.8%)	2 (3.6%)	6 (10.9%)	32 (58.2%)	14 (25.5%)
27. Risk taking	7-12 (23)	1 (4.3%)	1 (4.3%)	5 (21.7%)	14 (60.9%)	2 (8.7%)
	9-12 (55)	0 (0.0%)	2 (3.6%)	12 (21.8%)	26 (47.3%)	15 (27.3%)
30. Instruction time	7-12 (23)	1 (4.3%)	2 (8.7%)	12 (52.2%)	7 (30.4%)	1 (4.3%)
	9-12 (55)	1 (1.8%)	4 (7.3%)	20 (36.4%)	22 (40.0%)	8 (14.5%)
31. Share ideas	7-12 (23)	0 (0.0%)	0 (0.0%)	2 (8.7%)	16 (69.6%)	5 (21.7%)
	9-12 (55)	0 (0.0%)	0 (0.0%)	7 (12.7%)	30 (54.5%)	18 (32.7%)

Item	Grade level (n)	SD	D	N	A	SA
Total	n = 78	.5 (.6%)	3 (3.8%)	14 (17.9%)	40 (51.3%)	20 (25.6%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Collaborative Leadership (Gruenert) by subject/content area. Table 13 shows the frequency and percent for the subscale, Collaborative Leadership, by subject/content area by item of the teachers' responses to the survey. Electives teachers show 6 (85.7%) agreeing with teachers trusted and leaders praise. Results for English teachers illustrate 13 (76.5%) agreeing on share ideas. Foreign language teachers show 7 (77.8%) agreeing with risk taking. Health had 6 (66.7%) agreeing with decision making. Math shows 8 (80.0%) agreeing with share ideas. Science teachers show 8 (80.0%) agreed on teachers rewarded. Social studies had 10 (62.5%) strongly agreeing on leaders praise, informed teachers, and share ideas. In addition, 62.5% of social studies teachers agreed on teachers rewarded. The total for the average of all the responses is represented at the end of the table. On average, 60 of the 78 respondents (76.9%) agreed or strongly agreed that Collaborative Leadership occurred as measured by the 11 survey items within this construct.

Table 13

Frequencies and Percentages for Collaborative Leadership by Subject/Content Area by Item (n = 78)

Item	Subject (n)	SD	D	N	A	SA
2. Ideas valued	Electives (7)	0 (0.0%)	1 (14.3%)	1 (14.3%)	5 (71.4%)	0 (0.0%)
	English (17)	0 (0.0%)	0 (0.0%)	1 (5.9%)	6 (35.3%)	10 (58.8%)
	Foreign Lang (9)	0 (0.0%)	1 (11.1%)	1 (11.1%)	3 (33.3%)	4 (44.4%)
	Health (9)	0 (0.0%)	0 (0.0%)	1 (11.1%)	5 (55.6%)	3 (33.3%)
	Math (10)	0 (0.0%)	1 (10.0%)	1 (10.0%)	6 (60.0%)	2 (20.0%)
	Science (10)	0 (0.0%)	0 (0.0%)	2 (20.0%)	5 (50.0%)	3 (30.0%)
	Social Studies (16)	0 (0.0%)	0 (0.0%)	0 (0.0%)	7 (43.8%)	9 (56.3%)
7. Teachers trusted	Electives (7)	0 (0.0%)	0 (0.0%)	0 (0.0%)	6 (85.7%)	1 (14.3%)
	English (17)	0 (0.0%)	0 (0.0%)	1 (5.9%)	9 (52.9%)	7 (41.2%)
	Foreign Lang (9)	0 (0.0%)	1 (11.1%)	0 (0.0%)	5 (55.6%)	3 (33.3%)
	Health (9)	0 (0.0%)	0 (0.0%)	1 (11.1%)	3 (33.3%)	5 (55.6%)
	Math (10)	0 (0.0%)	1 (10.0%)	1 (10.0%)	6 (60.0%)	2 (20.0%)

Item	Subject (n)	SD	D	N	A	SA
	Science (10)	0 (0.0%)	0 (0.0%)	2 (20.0%)	5 (50.0%)	3 (30.0%)
	Social Studies (16)	0 (0.0%)	0 (0.0%)	0 (0.0%)	8 (50.0%)	8 (50.0%)
11. Leaders praise	Electives (7)	0 (0.0%)	0 (0.0%)	0 (0.0%)	6 (85.7%)	1 (14.3%)
	English (17)	0 (0.0%)	0 (0.0%)	2 (11.8%)	9 (52.9%)	6 (35.3%)
	Foreign Lang (9)	0 (0.0%)	1 (11.1%)	0 (0.0%)	4 (44.4%)	4 (44.4%)
	Health (9)	0 (0.0%)	0 (0.0%)	3 (33.3%)	3 (33.3%)	3 (33.3%)
	Math (10)	0 (0.0%)	0 (0.0%)	0 (0.0%)	7 (70.0%)	3 (30.0%)
	Science (10)	0 (0.0%)	2 (20.0%)	1 (10.0%)	6 (60.0%)	1 (10.0%)
	Social Studies (16)	0 (0.0%)	0 (0.0%)	0 (0.0%)	6 (37.5%)	10 (62.5%)
14. Decision making	Electives (7)	0 (0.0%)	2 (28.6%)	1 (14.3%)	4 (57.1%)	0 (0.0%)
	English (17)	0 (0.0%)	2 (11.8%)	2 (11.8%)	10 (58.8%)	3 (17.6%)
	Foreign Lang (9)	0 (0.0%)	1 (11.1%)	3 (33.3%)	5 (55.6%)	0 (0.0%)
	Health (9)	0 (0.0%)	1 (11.1%)	2 (22.2%)	6 (66.7%)	0 (0.0%)
	Math (10)	0 (0.0%)	1 (10.0%)	2 (20.0%)	5 (50.0%)	2 (20.0%)
	Science (10)	0 (0.0%)	1 (10.0%)	3 (30.0%)	4 (40.0%)	2 (20.0%)
	Social Studies (16)	0 (0.0%)	1 (6.3%)	5 (31.3%)	5 (31.3%)	5 (31.3%)
18. Leaders facilitate	Electives (7)	0 (0.0%)	0 (0.0%)	3 (42.9%)	4 (57.1%)	0 (0.0%)
	English (17)	1 (5.9%)	0 (0.0%)	6 (35.3%)	7 (41.2%)	3 (17.6%)
	Foreign Lang (9)	0 (0.0%)	3 (33.3%)	2 (22.2%)	3 (33.3%)	1 (11.1%)
	Health (9)	0 (0.0%)	0 (0.0%)	5 (55.6%)	3 (33.3%)	1 (11.1%)
	Math (10)	0 (0.0%)	0 (0.0%)	3 (30.0%)	6 (60.0%)	1 (10.0%)
	Science (10)	0 (0.0%)	1 (10.0%)	2 (20.0%)	7 (70.0%)	0 (0.0%)
	Social Studies (16)	0 (0.0%)	0 (0.0%)	5 (31.3%)	9 (56.3%)	2 (12.5%)
20. Informed teachers	Electives (7)	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (42.9%)	4 (57.1%)
	English (17)	0 (0.0%)	0 (0.0%)	0 (0.0%)	8 (47.1%)	9 (52.9%)
	Foreign Lang (9)	0 (0.0%)	0 (0.0%)	0 (0.0%)	5 (55.6%)	4 (44.4%)
	Health (9)	0 (0.0%)	0 (0.0%)	3 (33.3%)	4 (44.4%)	2 (22.2%)
	Math (10)	0 (0.0%)	1 (10.0%)	0 (0.0%)	6 (60.0%)	3 (30.0%)
	Science (10)	0 (0.0%)	0 (0.0%)	3 (30.0%)	6 (60.0%)	1 (10.0%)
	Social Studies (16)	0 (0.0%)	0 (0.0%)	0 (0.0%)	6 (37.5%)	10 (62.5%)
22. Policy involvement	Electives (7)	0 (0.0%)	1 (14.3%)	1 (14.3%)	5 (71.4%)	0 (0.0%)
	English (17)	0 (0.0%)	0 (0.0%)	5 (29.4%)	9 (52.9%)	3 (17.6%)
	Foreign Lang (9)	0 (0.0%)	1 (11.1%)	3 (33.3%)	5 (55.6%)	0 (0.0%)
	Health (9)	0 (0.0%)	0 (0.0%)	5 (55.6%)	3 (33.3%)	1 (11.1%)
	Math (10)	0 (0.0%)	0 (0.0%)	2 (20.0%)	7 (70.0%)	1 (10.0%)
	Science (10)	0 (0.0%)	0 (0.0%)	6 (60.0%)	3 (30.0%)	1 (10.0%)
	Social Studies (16)	0 (0.0%)	1 (6.3%)	2 (12.5%)	9 (56.3%)	4 (25.0%)
26. Teachers rewarded	Electives (7)	1 (14.3%)	0 (0.0%)	0 (0.0%)	5 (71.4%)	1 (14.3%)
	English (17)	0 (0.0%)	2 (11.8%)	2 (11.8%)	5 (29.4%)	8 (47.1%)
	Foreign Lang (9)	0 (0.0%)	0 (0.0%)	0 (0.0%)	6 (66.7%)	3 (33.3%)
	Health (9)	0 (0.0%)	0 (0.0%)	3 (33.3%)	5 (55.6%)	1 (11.1%)
	Math (10)	0 (0.0%)	0 (0.0%)	2 (20.0%)	6 (60.0%)	2 (20.0%)

Item	Subject (n)	SD	D	N	A	SA
	Science (10)	1 (10.0%)	1 (10.0%)	0 (0.0%)	8 (80.0%)	0 (0.0%)
	Social Studies (16)	0 (0.0%)	0 (0.0%)	1 (6.3%)	10 (62.5%)	5 (31.3%)
27. Risk taking	Electives (7)	1 (14.3%)	1 (14.3%)	2 (28.6%)	3 (42.9%)	0 (0.0%)
	English (17)	0 (0.0%)	0 (0.0%)	4 (23.5%)	8 (47.1%)	5 (29.4%)
	Foreign Lang (9)	0 (0.0%)	0 (0.0%)	1 (11.1%)	7 (77.8%)	1 (11.1%)
	Health (9)	0 (0.0%)	0 (0.0%)	5 (55.6%)	2 (22.2%)	2 (22.2%)
	Math (10)	0 (0.0%)	1 (10.0%)	1 (10.0%)	7 (70.0%)	1 (10.0%)
	Science (10)	0 (0.0%)	1 (10.0%)	3 (30.0%)	6 (60.0%)	0 (0.0%)
	Social Studies (16)	0 (0.0%)	0 (0.0%)	1 (6.3%)	7 (43.8%)	8 (50.0%)
30. Instruction time	Electives (7)	1 (14.3%)	0 (0.0%)	2 (28.6%)	4 (57.1%)	0 (0.0%)
	English (17)	1 (5.9%)	0 (0.0%)	8 (47.1%)	8 (47.1%)	0 (0.0%)
	Foreign Lang (9)	0 (0.0%)	1 (11.1%)	4 (44.4%)	2 (22.2%)	2 (22.2%)
	Health (9)	0 (0.0%)	0 (0.0%)	4 (44.4%)	4 (44.4%)	1 (11.1%)
	Math (10)	0 (0.0%)	1 (10.0%)	3 (30.0%)	6 (60.0%)	0 (0.0%)
	Science (10)	0 (0.0%)	3 (30.0%)	3 (30.0%)	4 (40.0%)	0 (0.0%)
	Social Studies (16)	0 (0.0%)	1 (6.3%)	8 (50.0%)	1 (6.3%)	6 (37.5%)
31. Share ideas	Electives (7)	0 (0.0%)	0 (0.0%)	0 (0.0%)	5 (71.4%)	2 (28.6%)
	English (17)	0 (0.0%)	0 (0.0%)	1 (5.9%)	13 (76.5%)	3 (17.6%)
	Foreign Lang (9)	0 (0.0%)	0 (0.0%)	2 (22.2%)	4 (44.4%)	3 (33.3%)
	Health (9)	0 (0.0%)	0 (0.0%)	2 (22.2%)	4 (44.4%)	3 (33.3%)
	Math (10)	0 (0.0%)	0 (0.0%)	1 (10.0%)	8 (80.0%)	1 (10.0%)
	Science (10)	0 (0.0%)	0 (0.0%)	3 (30.0%)	6 (60.0%)	1 (10.0%)
	Social Studies (16)	0 (0.0%)	0 (0.0%)	0 (0.0%)	6 (37.5%)	10 (62.5%)
Total	n = 78	.5 (.6%)	3 (3.8%)	14 (17.9%)	40 (51.3%)	20 (25.6%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Collaborative Leadership (Gruenert) by years of experience in virtual education.

Table 14 shows the frequency and percent for the subscale, Collaborative Leadership, by years of experience in virtual education by item of the teachers' responses to the survey. Item 26, teachers rewarded, shows 37 (62.7%) teachers with under 5 years of experience agreeing. Five years of experience or more respondents had 11 (57.9%) agreeing with leaders facilitate and share ideas. The total for the average of all the responses is represented at the end of the table. On average, 60 of the 78 respondents (76.9%) agreed or strongly agreed that Collaborative Leadership occurred as measured by the 11 survey items within this construct.

Table 14

Frequencies and Percentages for Collaborative Leadership by Years of Experience in Virtual Education by Item (n = 78)

Item	Virtual experience (n)	SD	D	N	A	SA
2. Ideas valued	Under 5 (59)	0 (0.0%)	3 (5.1%)	4 (6.8%)	28 (47.5%)	24 (40.7%)
	5 or more (19)	0 (0.0%)	0 (0.0%)	3 (15.8%)	9 (47.4%)	7 (36.8%)
7. Teachers trusted	Under 5 (59)	0 (0.0%)	1 (1.7%)	3 (5.1%)	33 (55.9%)	22 (37.3%)
	5 or more (19)	0 (0.0%)	1 (5.3%)	2 (10.5%)	9 (47.4%)	7 (36.8%)
11. Leaders praise	Under 5 (59)	0 (0.0%)	1 (1.7%)	4 (6.8%)	31 (52.5%)	23 (39.0%)
	5 or more (19)	0 (0.0%)	2 (10.5%)	2 (10.5%)	10 (52.6%)	5 (26.3%)
14. Decision making	Under 5 (59)	0 (0.0%)	4 (6.8%)	15 (25.4%)	32 (54.2%)	8 (13.6%)
	5 or more (19)	0 (0.0%)	5 (26.3%)	3 (15.8%)	7 (36.8%)	4 (21.1%)
18. Leaders facilitate	Under 5 (59)	1 (1.7%)	3 (5.1%)	20 (33.9%)	28 (47.5%)	7 (11.9%)
	5 or more (19)	0 (0.0%)	1 (5.3%)	6 (31.6%)	11 (57.9%)	1 (5.3%)
20. Informed teachers	Under 5 (59)	0 (0.0%)	1 (1.7%)	2 (3.4%)	31 (52.5%)	25 (42.4%)
	5 or more (19)	0 (0.0%)	0 (0.0%)	4 (21.1%)	7 (36.8%)	8 (42.1%)
22. Policy involvement	Under 5 (59)	0 (0.0%)	1 (1.7%)	20 (33.9%)	31 (52.5%)	7 (11.9%)
	5 or more (19)	0 (0.0%)	2 (10.5%)	4 (21.1%)	10 (52.6%)	3 (15.8%)
26. Teachers rewarded	Under 5 (59)	0 (0.0%)	0 (0.0%)	7 (11.9%)	37 (62.7%)	15 (25.4%)
	5 or more (19)	2 (10.5%)	3 (15.8%)	1 (5.3%)	8 (42.1%)	5 (26.3%)
27. Risk taking	Under 5 (59)	0 (0.0%)	1 (1.7%)	11 (18.6%)	34 (57.6%)	13 (22.0%)
	5 or more (19)	1 (5.3%)	2 (10.5%)	6 (31.6%)	6 (31.6%)	4 (21.1%)
30. Instruction time	Under 5 (59)	1 (1.7%)	3 (5.1%)	28 (47.5%)	21 (35.6%)	6 (10.2%)
	5 or more (19)	1 (5.3%)	3 (15.8%)	4 (21.1%)	8 (42.1%)	3 (15.8%)
31. Share ideas	Under 5 (59)	0 (0.0%)	0 (0.0%)	6 (10.2%)	35 (59.3%)	18 (30.5%)
	5 or more (19)	0 (0.0%)	0 (0.0%)	3 (15.8%)	11 (57.9%)	5 (26.3%)
Total	n = 78	.5 (.6%)	3 (3.8%)	14 (17.9%)	40 (51.3%)	20 (25.6%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Collaborative Leadership (Gruenert) by total years of experience in education.

Table 15 shows the frequency and percent for the subscale, Collaborative Leadership, by total years of experience in education by item of the teachers' responses to the survey. Item 18, leaders facilitate, shows 8 (72.7%) teachers with under 5 years of experience agreeing. Respondents with 5-9 years experience had 11 (55.0%) agreeing with ideas valued and teacher rewarded. Teachers with 10-14 years of experience shows 16 (72.7%) agreeing with teachers trusted. Participants with 15-19 years of experience indicates 6 (85.7%) agreeing with policy involvement. Teachers with 20-29 years of experience

shows 7 (70.0%) agreeing on leaders praise, teachers rewarded, and share ideas. Thirty years or more of experience teachers shows 7 (87.5%) agreeing with decision making. At the end of the table, the total for the average of all the responses is represented. On average, 60 of the 78 respondents (76.9%) agreed or strongly agreed that Collaborative Leadership occurred as measured by the 11 survey items within this construct.

Table 15

Frequencies and Percentages for Collaborative Leadership by Total Years of Experience in Education by Item (n = 78)

Item	Total experience (n)	SD	D	N	A	SA
2. Ideas valued	Under 5 (11)	0 (0.0%)	1 (9.1%)	0 (0.0%)	6 (54.5%)	4 (36.4%)
	5-9 (20)	0 (0.0%)	0 (0.0%)	2 (10.0%)	11 (55.0%)	7 (35.0%)
	10-14 (22)	0 (0.0%)	1 (4.5%)	1 (4.5%)	13 (59.1%)	7 (31.8%)
	15-19 (7)	0 (0.0%)	1 (14.3%)	0 (0.0%)	1 (14.3%)	5 (71.4%)
	20-29 (10)	0 (0.0%)	0 (0.0%)	3 (30.0%)	4 (40.0%)	3 (30.0%)
	30 or more (8)	0 (0.0%)	0 (0.0%)	1 (12.5%)	2 (25.0%)	5 (62.5%)
7. Teachers trusted	Under 5 (11)	0 (0.0%)	0 (0.0%)	1 (9.1%)	4 (36.4%)	6 (54.5%)
	5-9 (20)	0 (0.0%)	0 (0.0%)	2 (10.0%)	10 (50.0%)	8 (40.0%)
	10-14 (22)	0 (0.0%)	1 (4.5%)	0 (0.0%)	16 (72.7%)	5 (22.7%)
	15-19 (7)	0 (0.0%)	1 (14.3%)	0 (0.0%)	2 (28.6%)	4 (57.1%)
	20-29 (10)	0 (0.0%)	0 (0.0%)	2 (20.0%)	4 (40.0%)	4 (40.0%)
	30 or more (8)	0 (0.0%)	0 (0.0%)	0 (0.0%)	6 (75.0%)	2 (25.0%)
11. Leaders praise	Under 5 (11)	0 (0.0%)	0 (0.0%)	1 (9.1%)	6 (54.5%)	4 (36.4%)
	5-9 (20)	0 (0.0%)	0 (0.0%)	3 (15.0%)	7 (35.0%)	10 (50.0%)
	10-14 (22)	0 (0.0%)	2 (9.1%)	1 (4.5%)	12 (54.5%)	7 (31.8%)
	15-19 (7)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4 (57.1%)	3 (42.9%)
	20-29 (10)	0 (0.0%)	1 (10.0%)	0 (0.0%)	7 (70.0%)	2 (20.0%)
	30 or more (8)	0 (0.0%)	0 (0.0%)	1 (12.5%)	5 (62.5%)	2 (25.0%)
14. Decision making	Under 5 (11)	0 (0.0%)	0 (0.0%)	4 (36.4%)	5 (45.5%)	2 (18.2%)
	5-9 (20)	0 (0.0%)	0 (0.0%)	7 (35.0%)	10 (50.0%)	3 (15.0%)
	10-14 (22)	0 (0.0%)	4 (18.2%)	4 (18.2%)	13 (59.1%)	1 (4.5%)
	15-19 (7)	0 (0.0%)	2 (28.6%)	1 (14.3%)	1 (14.3%)	3 (42.9%)
	20-29 (10)	0 (0.0%)	2 (20.0%)	2 (20.0%)	3 (30.0%)	3 (30.0%)
	30 or more (8)	0 (0.0%)	1 (12.5%)	0 (0.0%)	7 (87.5%)	0 (0.0%)
18. Leaders facilitate	Under 5 (11)	0 (0.0%)	1 (9.1%)	2 (18.2%)	8 (72.7%)	0 (0.0%)
	5-9 (20)	0 (0.0%)	1 (5.0%)	6 (30.0%)	10 (50.0%)	3 (15.0%)
	10-14 (22)	0 (0.0%)	1 (4.5%)	10 (45.5%)	9 (40.9%)	2 (9.1%)
	15-19 (7)	0 (0.0%)	0 (0.0%)	2 (28.6%)	3 (42.9%)	2 (28.6%)
	20-29 (10)	0 (0.0%)	1 (10.0%)	3 (30.0%)	5 (50.0%)	1 (10.0%)

Item	Total experience (n)	SD	D	N	A	SA
	30 or more (8)	1 (12.5%)	0 (0.0%)	3 (37.5%)	4 (50.0%)	0 (0.0%)
20. Informed teachers	Under 5 (11)	0 (0.0%)	0 (0.0%)	0 (0.0%)	7 (63.6%)	4 (36.4%)
	5-9 (20)	0 (0.0%)	0 (0.0%)	1 (5.0%)	10 (50.0%)	9 (45.0%)
	10-14 (22)	0 (0.0%)	0 (0.0%)	3 (13.6%)	10 (45.5%)	9 (40.9%)
	15-19 (7)	0 (0.0%)	1 (14.3%)	0 (0.0%)	3 (42.9%)	3 (42.9%)
	20-29 (10)	0 (0.0%)	0 (0.0%)	2 (20.0%)	4 (40.0%)	4 (40.0%)
	30 or more (8)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4 (50.0%)	4 (50.0%)
22. Policy involvement	Under 5 (11)	0 (0.0%)	0 (0.0%)	3 (27.3%)	7 (63.6%)	1 (9.1%)
	5-9 (20)	0 (0.0%)	0 (0.0%)	7 (35.0%)	10 (50.0%)	3 (15.0%)
	10-14 (22)	0 (0.0%)	2 (9.1%)	7 (31.8%)	11 (50.0%)	2 (9.1%)
	15-19 (7)	0 (0.0%)	0 (0.0%)	1 (14.3%)	6 (85.7%)	0 (0.0%)
	20-29 (10)	0 (0.0%)	1 (10.0%)	3 (30.0%)	4 (40.0%)	2 (20.0%)
	30 or more (8)	0 (0.0%)	0 (0.0%)	3 (37.5%)	3 (37.5%)	2 (25.0%)
26. Teachers rewarded	Under 5 (11)	0 (0.0%)	0 (0.0%)	2 (18.2%)	6 (54.5%)	3 (27.3%)
	5-9 (20)	0 (0.0%)	0 (0.0%)	1 (5.0%)	11 (55.0%)	8 (40.0%)
	10-14 (22)	1 (4.5%)	2 (9.1%)	3 (13.6%)	12 (54.5%)	4 (18.2%)
	15-19 (7)	0 (0.0%)	1 (14.3%)	0 (0.0%)	3 (42.9%)	3 (42.9%)
	20-29 (10)	1 (10.0%)	0 (0.0%)	1 (10.0%)	7 (70.0%)	1 (10.0%)
	30 or more (8)	0 (0.0%)	0 (0.0%)	1 (12.5%)	6 (75.0%)	1 (12.5%)
27. Risk taking	Under 5 (11)	0 (0.0%)	0 (0.0%)	2 (18.2%)	7 (63.6%)	2 (18.2%)
	5-9 (20)	0 (0.0%)	1 (5.0%)	3 (15.0%)	9 (45.0%)	7 (35.0%)
	10-14 (22)	1 (4.5%)	2 (9.1%)	6 (27.3%)	10 (45.5%)	3 (13.6%)
	15-19 (7)	0 (0.0%)	0 (0.0%)	1 (14.3%)	4 (57.1%)	2 (28.6%)
	20-29 (10)	0 (0.0%)	0 (0.0%)	4 (40.0%)	4 (40.0%)	2 (20.0%)
	30 or more (8)	0 (0.0%)	0 (0.0%)	1 (12.5%)	6 (75.0%)	1 (12.5%)
30. Instruction time	Under 5 (11)	0 (0.0%)	0 (0.0%)	4 (36.4%)	5 (45.5%)	2 (18.2%)
	5-9 (20)	0 (0.0%)	1 (5.0%)	10 (50.0%)	7 (35.0%)	2 (10.0%)
	10-14 (22)	1 (4.5%)	2 (9.1%)	8 (36.4%)	7 (31.8%)	4 (18.2%)
	15-19 (7)	0 (0.0%)	2 (28.6%)	1 (14.3%)	3 (42.9%)	1 (14.3%)
	20-29 (10)	0 (0.0%)	1 (10.0%)	3 (30.0%)	6 (60.0%)	0 (0.0%)
	30 or more (8)	1 (12.5%)	0 (0.0%)	6 (75.0%)	1 (12.5%)	0 (0.0%)
31. Share ideas	Under 5 (11)	0 (0.0%)	0 (0.0%)	1 (9.1%)	7 (63.6%)	3 (27.3%)
	5-9 (20)	0 (0.0%)	0 (0.0%)	2 (10.0%)	10 (50.0%)	8 (40.0%)
	10-14 (22)	0 (0.0%)	0 (0.0%)	3 (13.6%)	12 (54.5%)	7 (31.8%)
	15-19 (7)	0 (0.0%)	0 (0.0%)	1 (14.3%)	4 (57.1%)	2 (28.6%)
	20-29 (10)	0 (0.0%)	0 (0.0%)	1 (10.0%)	7 (70.0%)	2 (20.0%)
	30 or more (8)	0 (0.0%)	0 (0.0%)	1 (12.5%)	6 (75.0%)	1 (12.5%)
Total	n = 78	.5 (.6%)	3 (3.8%)	14 (17.9%)	40 (51.3%)	20 (25.6%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Teacher Collaboration (Gruenert) by gender. Table 16 shows the frequency and percent for the subscale, Teacher Collaboration, by gender by item of the teachers' responses to the survey. Item 15, observation, shows 10 (45.5%) males disagreeing. Females indicate 29 (51.8%) disagreed with item 8, plan together. At the end of the table, the total for the average of all the responses is represented. On average, 53 of the 78 respondents (67.9%) were neutral, disagreed, or strongly disagreed that Teacher Collaboration occurred as measured by the five survey items within this construct. Narratives with Tables 16 through 21 highlight Teacher Collaboration.

Table 16

Frequencies and Percentages for Teacher Collaboration by Gender by Item (n = 78)

Item	Gender (n)	SD	D	N	A	SA
3. Dialogue	Male (22)	0 (0.0%)	4 (18.2%)	2 (9.1%)	9 (40.9%)	7 (31.8%)
	Female (56)	1 (1.8%)	10 (17.9%)	10 (17.9%)	26 (46.4%)	9 (16.1%)
8. Plan together	Male (22)	0 (0.0%)	7 (31.8%)	8 (36.4%)	6 (27.3%)	1 (4.5%)
	Female (56)	8 (14.3%)	29 (51.8%)	14 (25.0%)	5 (8.9%)	0 (0.0%)
15. Observation	Male (22)	1 (4.5%)	10 (45.5%)	5 (22.7%)	5 (22.7%)	1 (4.5%)
	Female (56)	9 (16.1%)	28 (50.0%)	17 (30.4%)	2 (3.6%)	0 (0.0%)
23. Teaching aware	Male (22)	1 (4.5%)	7 (31.8%)	5 (22.7%)	7 (31.8%)	2 (9.1%)
	Female (56)	1 (1.8%)	13 (23.2%)	22 (39.3%)	19 (33.9%)	1 (1.8%)
28. Work together	Male (22)	0 (0.0%)	5 (22.7%)	7 (31.8%)	8 (36.4%)	2 (9.1%)
	Female (56)	3 (5.4%)	11 (19.6%)	25 (44.6%)	17 (30.4%)	0 (0.0%)
Total	n = 78	5 (6.4%)	25 (32.1%)	23 (29.5%)	21 (26.9%)	5 (6.4%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Teacher Collaboration (Gruenert) by highest degree held. Table 17 shows the frequency and percent for the subscale, Teacher Collaboration, by highest degree held by item of the teachers' responses to the survey. Item 15, observation, illustrates 21 (55.3%) participants with a bachelors degree disagreeing. Teachers with a masters degree shows 17 (42.5%) agreeing with teaching aware, 42.5% disagreeing with plan together and observation. The total for the average of all the responses is represented at the end of the table. On average, 53 of the 78 respondents (67.9%) were neutral, disagreed, or strongly

disagreed that Teacher Collaboration occurred as measured by the five survey items within this construct.

Table 17

Frequencies and Percentages for Teacher Collaboration by Highest Degree Held by Item (n = 78)

Item	Degree (n)	SD	D	N	A	SA
3. Dialogue	Bachelors (38)	1 (2.6%)	5 (13.2%)	5 (13.2%)	20 (52.6%)	7 (18.4%)
	Masters or higher (40)	0 (0.0%)	9 (22.5%)	7 (17.5%)	15 (37.5%)	9 (22.5%)
8. Plan together	Bachelors (38)	4 (10.5%)	19 (50.0%)	10 (26.3%)	4 (10.5%)	1 (2.6%)
	Masters or higher (40)	4 (10.0%)	17 (42.5%)	12 (30.0%)	7 (17.5%)	0 (0.0%)
15. Observation	Bachelors (38)	4 (10.5%)	21 (55.3%)	10 (26.3%)	2 (5.3%)	1 (2.6%)
	Masters or higher (40)	6 (15.0%)	17 (42.5%)	12 (30.0%)	5 (12.5%)	0 (0.0%)
23. Teaching aware	Bachelors (38)	2 (5.3%)	11 (28.9%)	14 (36.8%)	9 (23.7%)	2 (5.3%)
	Masters or higher (40)	0 (0.0%)	9 (22.5%)	13 (32.5%)	17 (42.5%)	1 (2.5%)
28. Work together	Bachelors (38)	1 (2.6%)	8 (21.1%)	18 (47.4%)	9 (23.7%)	2 (5.3%)
	Masters or higher (40)	2 (5.0%)	8 (20.0%)	14 (35.0%)	16 (40.0%)	0 (0.0%)
Total	n = 78	5 (6.4%)	25 (32.1%)	23 (29.5%)	21 (26.9%)	5 (6.4%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Teacher Collaboration (Gruenert) by teaching grade level. Table 18 shows the frequency and percent for the subscale, Teacher Collaboration, by teaching grade level by item of the teachers' responses to the survey. Item 8, plan together, shows 14 (60.9%) 7-12 grade level teachers disagreeing. Teachers in 9-12 grade level had 25 (45.5%) agreeing with dialogue, yet 45.5% disagreed with observation. The total for the average of all the responses is represented at the end of the table. On average, 53 of the 78 respondents (67.9%) were neutral, disagreed, or strongly disagreed that Teacher Collaboration occurred as measured by the five survey items within this construct.

Table 18

Frequencies and Percentages for Teacher Collaboration by Teaching Grade Level by Item (n = 78)

Item	Grade level (n)	SD	D	N	A	SA
3. Dialogue	7-12 (23)	0 (0.0%)	5(21.7%)	5(21.7%)	10 (43.5%)	3 (13.0%)
	9-12 (55)	1 (1.8%)	9 (16.4%)	7 (12.7%)	25 (45.5%)	13 (23.6%)
8. Plan together	7-12 (23)	3 (13.0%)	14 (60.9%)	4 (17.4%)	2 (8.7%)	0 (0.0%)
	9-12 (55)	5 (9.1%)	22 (40.0%)	18 (32.7%)	9 (16.4%)	1 (1.8%)
15. Observation	7-12 (23)	4 (17.4%)	13 (56.5%)	4 (17.4%)	2 (8.7%)	0 (0.0%)

Item	Grade level (n)	SD	D	N	A	SA
	9-12 (55)	6 (10.9%)	25 (45.5%)	18 (32.7%)	5 (9.1%)	1 (1.8%)
23. Teaching aware	7-12 (23)	1 (4.3%)	9 (39.1%)	5 (21.7%)	8 (34.8%)	0 (0.0%)
	9-12 (55)	1 (1.8%)	11 (20.0%)	22 (40.0%)	18 (32.7%)	3 (5.5%)
28. Work together	7-12 (23)	1 (4.3%)	7 (30.4%)	8 (34.8%)	7 (30.4%)	0 (0.0%)
	9-12 (55)	2 (3.6%)	9 (16.4%)	24 (43.6%)	18 (32.7%)	2 (3.6%)
Total	n = 78	5 (6.4%)	25 (32.1%)	23 (29.5%)	21 (26.9%)	5 (6.4%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Teacher Collaboration (Gruenert) by subject/content area. Table 19 shows the frequency and percent for the subscale, Teacher Collaboration, by subject/content area by item of the teachers' responses to the survey. Elective teachers show 5 (71.4%) are neutral on survey item of work together. Results for English teachers illustrate 10 (58.8%) disagreeing with survey item about observation. Foreign language teachers show 6 (66.7%) disagreeing with observation and work together. Health had 4 (44.4%) being neutral on observation, teaching aware, and work together. Also, 44.4% of the health teachers agreed with teaching aware, and work together. Math shows 6 (60.0%) disagreeing with observation. Science teachers show 6 (60.0%) disagree on plan together and observation. Social studies had 8 (50.0%) disagreeing on plan together. The total for the average of all the responses is represented at the end of the table. On average, 53 of the 78 respondents (67.9%) were neutral, disagreed, or strongly disagreed that Teacher Collaboration occurred as measured by the five survey items within this construct.

Table 19

Frequencies and Percentages for Teacher Collaboration by Subject/Content Area by Item (n = 78)

Item	Subject (n)	SD	D	N	A	SA
3. Dialogue	Electives (7)	0 (0.0%)	1 (14.3%)	1 (14.3%)	4 (57.1%)	1 (14.3%)
	English (17)	0 (0.0%)	2 (11.8%)	4 (23.5%)	8 (47.1%)	3 (17.6%)
	Foreign Language (9)	0 (0.0%)	4 (44.4%)	1 (11.1%)	3 (33.3%)	1 (11.1%)
	Health (9)	0 (0.0%)	2 (22.2%)	1 (11.1%)	3 (33.3%)	3 (33.3%)
	Math (10)	1 (10.0%)	3 (30.0%)	1 (10.0%)	5 (50.0%)	0 (0.0%)
	Science (10)	0 (0.0%)	1 (10.0%)	2 (20.0%)	5 (50.0%)	2 (20.0%)
	Social Studies (16)	0 (0.0%)	1 (6.3%)	2 (12.5%)	7 (43.8%)	6 (37.5%)

Item	Subject (n)	SD	D	N	A	SA
8. Plan together	Electives (7)	1 (14.3%)	2 (28.6%)	3 (42.9%)	1 (14.3%)	0 (0.0%)
	English (17)	2 (11.8%)	8 (47.1%)	6 (35.3%)	1 (5.9%)	0 (0.0%)
	Foreign Language (9)	2 (22.2%)	5 (55.6%)	0 (0.0%)	2 (22.2%)	0 (0.0%)
	Health (9)	1 (11.1%)	3 (33.3%)	2 (22.2%)	3 (33.3%)	0 (0.0%)
	Math (10)	0 (0.0%)	4 (40.0%)	5 (50.0%)	1 (10.0%)	0 (0.0%)
	Science (10)	0 (0.0%)	6 (60.0%)	3 (30.0%)	1 (10.0%)	0 (0.0%)
	Social Studies (16)	2 (12.5%)	8 (50.0%)	3 (18.8%)	2 (12.5%)	1 (6.3%)
15. Observation	Electives (7)	2 (28.6%)	1 (14.3%)	4 (57.1%)	0 (0.0%)	0 (0.0%)
	English (17)	2 (11.8%)	10 (58.8%)	4 (23.5%)	1 (5.9%)	0 (0.0%)
	Foreign Language (9)	2 (22.2%)	6 (66.7%)	0 (0.0%)	1 (11.1%)	0 (0.0%)
	Health (9)	1 (11.1%)	3 (33.3%)	4 (44.4%)	1 (11.1%)	0 (0.0%)
	Math (10)	0 (0.0%)	6 (60.0%)	2 (20.0%)	2 (20.0%)	0 (0.0%)
	Science (10)	0 (0.0%)	6 (60.0%)	3 (30.0%)	1 (10.0%)	0 (0.0%)
	Social Studies (16)	3 (18.8%)	6 (37.5%)	5 (31.3%)	1 (6.3%)	1 (6.3%)
23. Teaching aware	Electives (7)	0 (0.0%)	1 (14.3%)	4 (57.1%)	2 (28.6%)	0 (0.0%)
	English (17)	0 (0.0%)	3 (17.6%)	7 (41.2%)	7 (41.2%)	0 (0.0%)
	Foreign Language (9)	1 (11.1%)	4 (44.4%)	1 (11.1%)	3 (33.3%)	0 (0.0%)
	Health (9)	0 (0.0%)	1 (11.1%)	4 (44.4%)	4 (44.4%)	0 (0.0%)
	Math (10)	0 (0.0%)	4 (40.0%)	4 (40.0%)	2 (20.0%)	0 (0.0%)
	Science (10)	1 (10.0%)	4 (40.0%)	2 (20.0%)	3 (30.0%)	0 (0.0%)
	Social Studies (16)	0 (0.0%)	3 (18.8%)	5 (31.3%)	5 (31.3%)	3 (18.8%)
28. Work together	Electives (7)	1 (14.3%)	1 (14.3%)	5 (71.4%)	0 (0.0%)	0 (0.0%)
	English (17)	1 (5.9%)	2 (11.8%)	8 (47.1%)	6 (35.3%)	0 (0.0%)
	Foreign Language (9)	0 (0.0%)	6 (66.7%)	2 (22.2%)	1 (11.1%)	0 (0.0%)
	Health (9)	0 (0.0%)	1 (11.1%)	4 (44.4%)	4 (44.4%)	0 (0.0%)
	Math (10)	0 (0.0%)	2 (20.0%)	4 (40.0%)	4 (40.0%)	0 (0.0%)
	Science (10)	0 (0.0%)	2 (20.0%)	4 (40.0%)	4 (40.0%)	0 (0.0%)
	Social Studies (16)	1 (6.3%)	2 (12.5%)	5 (31.3%)	6 (37.5%)	2 (12.5%)
Total	n = 78	5 (6.4%)	25 (32.1%)	23 (29.5%)	21 (26.9%)	5 (6.4%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Teacher Collaboration (Gruenert) by years of experience in virtual education.

Table 20 shows the frequency and percent for the subscale, Teacher Collaboration, by years of experience in virtual education by item of the teachers' responses to the survey. Item 15, observation, shows 30 (50.8%) with under 5 years of experience disagreeing. Five years of experience or more had 10 (52.6%) agreeing with dialogue. The total for the average of all the responses is represented at the end of the table. On average, 53 of

the 78 respondents (67.9%) were neutral, disagreed, or strongly disagreed that Teacher Collaboration occurred as measured by the five survey items within this construct.

Table 20

Frequencies and Percentages for Teacher Collaboration by Years of Experience in Virtual Education by Item (n = 78)

Item	Virtual experience (n)	SD	D	N	A	SA
3. Dialogue	Under 5 (59)	1 (1.7%)	11 (18.6%)	11 (18.6%)	25 (42.4%)	11 (18.6%)
	5 or more (19)	0 (0.0%)	3 (15.8%)	1 (5.3%)	10 (52.6%)	5 (26.3%)
8. Plan together	Under 5 (59)	6 (10.2%)	27 (45.8%)	19 (32.2%)	6 (10.2%)	1 (1.7%)
	5 or more (19)	2 (10.5%)	9 (47.4%)	3 (15.8%)	5 (26.3%)	0 (0.0%)
15. Observation	Under 5 (59)	7 (11.9%)	30 (50.8%)	18 (30.5%)	3 (5.1%)	1 (1.7%)
	5 or more (19)	3 (15.8%)	8 (42.1%)	4 (21.1%)	4 (21.1%)	0 (0.0%)
23. Teaching aware	Under 5 (59)	1 (1.7%)	16 (27.1%)	24 (40.7%)	17 (28.8%)	1 (1.7%)
	5 or more (19)	1 (5.3%)	4 (21.1%)	3 (15.8%)	9 (47.4%)	2 (10.5%)
28. Work together	Under 5 (59)	1 (1.7%)	10 (16.9%)	27 (45.8%)	20 (33.9%)	1 (1.7%)
	5 or more (19)	2 (10.5%)	6 (31.6%)	5 (31.6%)	5 (31.6%)	1 (5.3%)
Total	n = 78	5 (6.4%)	25 (32.1%)	23 (29.5%)	21 (26.9%)	5 (6.4%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Teacher Collaboration (Gruenert) by total years of experience in education.

Table 21 shows the frequency and percent for the subscale, Teacher Collaboration, by total years of experience in education by item of the teachers' responses to the survey. Item 8, observation, 8 (72.7%) with under 5 years of experience disagreeing. Respondents with 5-9 years experience had 10 (50.0%) neutral with work together. Teachers with 10-14 years of experience show 11 (50.0%) agreed with teaching aware. Participants with 15-19 years of experience indicate 6 (85.7%) disagreeing with plan together. Teachers with 20-29 years of experience show 6 (60.0%) disagreeing on observation. Thirty years or more of experience teachers show 5 (62.5%) disagreeing with observation and 62.5% neutral on work together. The total for the average of all the responses is represented at the end of the table. On average, 53 of the 78 respondents

(67.9%) were neutral, disagreed, or strongly disagreed that Teacher Collaboration occurred as measured by the five survey items within this construct.

Table 21

Frequencies and Percentages for Teacher Collaboration by Total Years of Experience in Education by Item (n = 78)

Item	Total experience (n)	SD	D	N	A	SA
3. Dialogue	Under 5 (11)	1 (9.1%)	3 (27.3%)	0 (0.0%)	5 (45.5%)	2 (18.2%)
	5-9 (20)	0 (0.0%)	2 (10.0%)	4 (20.0%)	9 (45.0%)	5 (25.0%)
	10-14 (22)	0 (0.0%)	5 (22.7%)	2 (9.1%)	10 (45.5%)	5 (22.7%)
	15-19 (7)	0 (0.0%)	1 (14.3%)	2 (28.6%)	3 (42.9%)	1 (14.3%)
	20-29 (10)	0 (0.0%)	1 (10.0%)	2 (20.0%)	5 (50.0%)	2 (20.0%)
	30 or more (8)	0 (0.0%)	2 (25.0%)	2 (25.0%)	3 (37.5%)	1 (12.5%)
8. Plan together	Under 5 (11)	0 (0.0%)	6 (54.5%)	3 (27.3%)	2 (18.2%)	0 (0.0%)
	5-9 (20)	3 (15.0%)	9 (45.0%)	5 (25.0%)	2 (10.0%)	1 (5.0%)
	10-14 (22)	4 (18.2%)	6 (27.3%)	6 (27.3%)	6 (27.3%)	0 (0.0%)
	15-19 (7)	0 (0.0%)	6 (85.7%)	1 (14.3%)	0 (0.0%)	0 (0.0%)
	20-29 (10)	0 (0.0%)	5 (50.0%)	4 (40.0%)	1 (10.0%)	0 (0.0%)
	30 or more (8)	1 (12.5%)	4 (50.0%)	3 (37.5%)	0 (0.0%)	0 (0.0%)
15. Observation	Under 5 (11)	0 (0.0%)	8 (72.7%)	1 (9.1%)	2 (18.2%)	0 (0.0%)
	5-9 (20)	3 (15.0%)	8 (40.0%)	8 (40.0%)	0 (0.0%)	1 (5.0%)
	10-14 (22)	5 (22.7%)	6 (27.3%)	7 (31.8%)	4 (18.2%)	0 (0.0%)
	15-19 (7)	1 (14.3%)	5 (71.4%)	1 (14.3%)	0 (0.0%)	0 (0.0%)
	20-29 (10)	0 (0.0%)	6 (60.0%)	3 (30.0%)	1 (10.0%)	0 (0.0%)
	30 or more (8)	1 (12.5%)	5 (62.5%)	2 (25.0%)	0 (0.0%)	0 (0.0%)
23. Teaching aware	Under 5 (11)	0 (0.0%)	4 (36.4%)	4 (36.4%)	3 (27.3%)	0 (0.0%)
	5-9 (20)	0 (0.0%)	5 (25.0%)	8 (40.0%)	5 (25.0%)	2 (10.0%)
	10-14 (22)	1 (4.5%)	2 (9.1%)	7 (31.8%)	11 (50.0%)	1 (4.5%)
	15-19 (7)	0 (0.0%)	2 (28.6%)	1 (14.3%)	4 (57.1%)	0 (0.0%)
	20-29 (10)	1 (10.0%)	4 (40.0%)	3 (30.0%)	2 (20.0%)	0 (0.0%)
	30 or more (8)	0 (0.0%)	3 (37.5%)	4 (50.0%)	1 (12.5%)	0 (0.0%)
28. Work together	Under 5 (11)	0 (0.0%)	2 (18.2%)	3 (27.3%)	6 (54.5%)	0 (0.0%)
	5-9 (20)	1 (5.0%)	4 (20.0%)	10 (50.0%)	4 (20.0%)	1 (5.0%)
	10-14 (22)	1 (4.5%)	5 (22.7%)	9 (40.9%)	6 (27.3%)	1 (4.5%)
	15-19 (7)	0 (0.0%)	2 (28.6%)	1 (14.3%)	4 (57.1%)	0 (0.0%)
	20-29 (10)	0 (0.0%)	2 (20.0%)	4 (40.0%)	4 (40.0%)	0 (0.0%)
	30 or more (8)	1 (12.5%)	1 (12.5%)	5 (62.5%)	1 (12.5%)	0 (0.0%)
Total	n = 78	5 (6.4%)	25 (32.1%)	23 (29.5%)	21 (26.9%)	5 (6.4%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Professional Development (Gruenert) by gender. Table 22 shows the frequency and percent for the subscale, Professional Development, by gender by item of the teachers' responses to the survey. Items 1, 16, 24, professional networks, PD valued, and knowledge base show 14 (63.6%) males agreeing. Females indicate 38 (67.9%) agreed with item 1, professional networks. At the end of the table, the total for the average of all the responses is represented. On average, 69 of the 78 respondents (88.5%) agreed or strongly agreed that Professional Development occurred as measured by the five survey items within this construct. Narratives with Tables 22 through 27 highlight Professional Development.

Table 22

Frequencies and Percentages for Professional Development by Gender by Item (n = 78)

Item	Gender (n)	SD	D	N	A	SA
1. Professional networks	Male (22)	0 (0.0%)	1 (4.5%)	1 (4.5%)	14 (63.6%)	6 (27.3%)
	Female (56)	0 (0.0%)	1 (1.8%)	6 (10.7%)	38 (67.9%)	11 (19.6%)
9. Seek ideas	Male (22)	0 (0.0%)	1 (4.5%)	2 (9.1%)	11 (50.0%)	8 (36.4%)
	Female (56)	0 (0.0%)	1 (1.8%)	13 (23.2%)	33 (58.9%)	9 (16.1%)
16. PD valued	Male (22)	0 (0.0%)	0 (0.0%)	1 (4.5%)	14 (63.6%)	7 (31.8%)
	Female (56)	0 (0.0%)	0 (0.0%)	8 (14.3%)	25 (44.6%)	23 (41.1%)
24. Knowledge base	Male (22)	0 (0.0%)	0 (0.0%)	2 (9.1%)	14 (63.6%)	6 (27.3%)
	Female (56)	0 (0.0%)	1 (1.8%)	4 (7.1%)	37 (66.1%)	14 (25.0%)
29. Values improvement	Male (22)	0 (0.0%)	0 (0.0%)	1 (4.5%)	13 (59.1%)	8 (36.4%)
	Female (56)	0 (0.0%)	1 (1.8%)	4 (7.1%)	29 (51.8%)	22 (39.3%)
Total	n = 78	0 (0.0%)	1 (1.3%)	8 (10.3%)	46 (59.0%)	23 (29.5%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Professional Development (Gruenert) by highest degree held. Table 23 shows the frequency and percent for the subscale, Professional Development, by highest degree held by item of the teachers' responses to the survey. Item 1, professional network, illustrates 29 (76.3%) participants with a bachelors degree agreeing. Teachers with a masters degree shows 25 (62.5%) agreeing with knowledge base. The total for the average of all the responses is represented at the end of the table. On average, 69 of the

78 respondents (88.5%) agreed or strongly agreed that Professional Development occurred as measured by the five survey items within this construct.

Table 23

Frequencies and Percentages for Professional Development by Highest Degree Held by Item (n = 78)

Item	Degree (n)	SD	D	N	A	SA
1. Professional networks	Bachelors (38)	0 (0.0%)	0 (0.0%)	3 (7.9%)	29 (76.3%)	6 (15.8%)
	Masters or higher (40)	0 (0.0%)	2 (5.0%)	4 (10.0%)	23 (57.5%)	11 (27.5%)
9. Seek ideas	Bachelors (38)	0 (0.0%)	1 (2.6%)	7 (18.4%)	24 (63.2%)	6 (15.8%)
	Masters or higher (40)	0 (0.0%)	1 (2.5%)	8 (20.0%)	20 (50.0%)	11 (27.5%)
16. PD valued	Bachelors (38)	0 (0.0%)	0 (0.0%)	5 (13.2%)	19 (50.0%)	14 (36.8%)
	Masters or higher (40)	0 (0.0%)	0 (0.0%)	4 (10.0%)	20 (50.0%)	16 (40.0%)
24. Knowledge base	Bachelors (38)	0 (0.0%)	0 (0.0%)	3 (7.9%)	26 (68.4%)	9 (23.7%)
	Masters or higher (40)	0 (0.0%)	1 (2.5%)	3 (7.5%)	25 (62.5%)	11 (27.5%)
29. Values improvement	Bachelors (38)	0 (0.0%)	0 (0.0%)	3 (7.9%)	20 (52.6%)	15 (39.5%)
	Masters or higher (40)	0 (0.0%)	1 (2.5%)	2 (5.0%)	22 (55.0%)	15 (37.5%)
Total	n = 78	0 (0.0%)	1 (1.3%)	8 (10.3%)	46 (59.0%)	23 (29.5%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Professional Development (Gruenert) by teaching grade level. Table 24 shows the frequency and percent for the subscale, Professional Development, by teaching grade level by item of the teachers' responses to the survey. Item 24, knowledge base, shows 17 (73.9%) 7-12 grade level teachers agreeing. Teachers in 9-12 grade level had 38 (69.1%) agreeing with professional networks. The total for the average of all the responses is represented at the end of the table. On average, 69 of the 78 respondents (88.5%) agreed or strongly agreed that Professional Development occurred as measured by the five survey items within this construct.

Table 24

Frequencies and Percentages for Professional Development by Teaching Grade Level by Item (n = 78)

Item	Grade level (n)	SD	D	N	A	SA
1. Professional networks	7-12 (23)	0 (0.0%)	0 (0.0%)	4 (17.4%)	14 (60.9%)	5 (21.7%)
	9-12 (55)	0 (0.0%)	2 (3.6%)	3 (5.5%)	38 (69.1%)	12 (21.8%)
9. Seek ideas	7-12 (23)	0 (0.0%)	1 (4.3%)	4 (17.4%)	11 (47.8%)	7 (30.4%)
	9-12 (55)	0 (0.0%)	1 (1.8%)	11 (20.0%)	33 (60.0%)	10 (18.2%)
16. PD valued	7-12 (23)	0 (0.0%)	0 (0.0%)	1 (4.3%)	12 (52.2%)	10 (43.5%)

Item	Grade level (n)	SD	D	N	A	SA
	9-12 (55)	0 (0.0%)	0 (0.0%)	8 (14.5%)	27 (49.1%)	20 (36.4%)
24. Knowledge base	7-12 (23)	0 (0.0%)	0 (0.0%)	0 (0.0%)	17 (73.9%)	6 (26.1%)
	9-12 (55)	0 (0.0%)	1 (1.8%)	6 (10.9%)	34 (61.8%)	14 (25.5%)
29. Values improvement	7-12 (23)	0 (0.0%)	0 (0.0%)	0 (0.0%)	14 (60.9%)	9 (39.1%)
	9-12 (55)	0 (0.0%)	1 (1.8%)	5 (9.1%)	28 (50.9%)	21 (38.2%)
Total	n = 78	0 (0.0%)	1 (1.3%)	8 (10.3%)	46 (59.0%)	23 (29.5%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Professional Development (Gruenert) by subject/content area. Table 25 shows the frequency and percent for the subscale, Professional Development, by subject/content area by item of the teachers' responses to the survey. Electives teachers show 6 (85.7%) agreeing with knowledge base. Results for English teachers illustrate 11 (64.7%) agreeing on professional networks. Foreign language teachers show 6 (66.7%) agreeing with professional networks, seek ideas, PD valued, and knowledge base. Health had 6 (66.7%) agreeing on knowledge base. Math respondents show 9 (90.0%) agreeing with knowledge base and values improvement. Science teachers show 8 (80.0%) agree on professional networks. Social studies had 11 (68.8%) agreeing on seek ideas. The total for the average of all the responses is represented at the end of the table. On average, 69 of the 78 respondents (88.5%) agreed or strongly agreed that Professional Development occurred as measured by the five survey items within this construct.

Table 25

Frequencies and Percentages for Professional Development by Subject/Content Area by Item (n = 78)

Item	Subject (n)	SD	D	N	A	SA
1. Professional networks	Electives (7)	0 (0.0%)	0 (0.0%)	2 (28.6%)	5 (71.4%)	0 (0.0%)
	English (17)	0 (0.0%)	1 (5.9%)	1 (5.9%)	11 (64.7%)	4 (23.5%)
	Foreign Language (9)	0 (0.0%)	1 (11.1%)	0 (0.0%)	6 (66.7%)	2 (22.2%)
	Health (9)	0 (0.0%)	0 (0.0%)	0 (0.0%)	5 (55.6%)	4 (44.4%)
	Math (10)	0 (0.0%)	0 (0.0%)	2 (20.0%)	7 (70.0%)	1 (10.0%)
	Science (10)	0 (0.0%)	0 (0.0%)	1 (10.0%)	8 (80.0%)	1 (10.0%)
	Social Studies (16)	0 (0.0%)	0 (0.0%)	1 (6.3%)	10 (62.5%)	5 (31.3%)
9. Seek ideas	Electives (7)	0 (0.0%)	0 (0.0%)	2 (28.6%)	4 (57.1%)	1 (14.3%)
	English (17)	0 (0.0%)	0 (0.0%)	4 (23.5%)	7 (41.2%)	6 (35.3%)

Item	Subject (n)	SD	D	N	A	SA
	Foreign Language (9)	0 (0.0%)	0 (0.0%)	0 (0.0%)	6 (66.7%)	3 (33.3%)
	Health (9)	0 (0.0%)	1 (11.1%)	3 (33.3%)	4 (44.4%)	1 (11.1%)
	Math (10)	0 (0.0%)	0 (0.0%)	2 (20.0%)	7 (70.0%)	1 (10.0%)
	Science (10)	0 (0.0%)	1 (10.0%)	2 (20.0%)	5 (50.0%)	2 (20.0%)
	Social Studies (16)	0 (0.0%)	0 (0.0%)	2 (12.5%)	11 (68.8%)	3 (18.8%)
16. PD valued	Electives (7)	0 (0.0%)	0 (0.0%)	2 (28.6%)	2 (28.6%)	3 (42.9%)
	English (17)	0 (0.0%)	0 (0.0%)	2 (11.8%)	5 (29.4%)	10 (58.8%)
	Foreign Language (9)	0 (0.0%)	0 (0.0%)	0 (0.0%)	6 (66.7%)	3 (33.3%)
	Health (9)	0 (0.0%)	0 (0.0%)	1 (11.1%)	5 (55.6%)	3 (33.3%)
	Math (10)	0 (0.0%)	0 (0.0%)	1 (10.0%)	7 (70.0%)	2 (20.0%)
	Science (10)	0 (0.0%)	0 (0.0%)	3 (30.0%)	5 (50.0%)	2 (20.0%)
	Social Studies (16)	0 (0.0%)	0 (0.0%)	0 (0.0%)	9 (56.3%)	7 (43.8%)
24. Knowledge base	Electives (7)	0 (0.0%)	0 (0.0%)	0 (0.0%)	6 (85.7%)	1 (14.3%)
	English (17)	0 (0.0%)	0 (0.0%)	2 (11.8%)	9 (52.9%)	6 (35.3%)
	Foreign Language (9)	0 (0.0%)	0 (0.0%)	0 (0.0%)	6 (66.7%)	3 (33.3%)
	Health (9)	0 (0.0%)	0 (0.0%)	1 (11.1%)	6 (66.7%)	2 (22.2%)
	Math (10)	0 (0.0%)	0 (0.0%)	0 (0.0%)	9 (90.0%)	1 (10.0%)
	Science (10)	0 (0.0%)	1 (10.0%)	1 (10.0%)	7 (70.0%)	1 (10.0%)
	Social Studies (16)	0 (0.0%)	0 (0.0%)	2 (12.5%)	8 (50.0%)	6 (37.5%)
29. Values improvement	Electives (7)	0 (0.0%)	0 (0.0%)	1 (14.3%)	3 (42.9%)	3 (42.9%)
	English (17)	0 (0.0%)	0 (0.0%)	1 (5.9%)	8 (47.1%)	8 (47.1%)
	Foreign Language (9)	0 (0.0%)	0 (0.0%)	0 (0.0%)	5 (55.6%)	4 (44.4%)
	Health (9)	0 (0.0%)	0 (0.0%)	1 (11.1%)	5 (55.6%)	3 (33.3%)
	Math (10)	0 (0.0%)	0 (0.0%)	0 (0.0%)	9 (90.0%)	1 (10.0%)
	Science (10)	0 (0.0%)	1 (10.0%)	1 (10.0%)	6 (60.0%)	2 (20.0%)
	Social Studies (16)	0 (0.0%)	0 (0.0%)	1 (6.3%)	6 (37.5%)	9 (56.3%)
Total	n = 78	0 (0.0%)	1 (1.3%)	8 (10.3%)	46 (59.0%)	23 (29.5%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Professional Development (Gruenert) by years of experience in virtual education.

Table 26 shows the frequency and percent for the subscale, Professional Development, by years of experience in virtual education by item of the teachers' responses to the survey. Items 1 and 24, professional networks and knowledge base, show 39 (66.1%) teachers with under 5 years of experience agreeing. Five years of experience or more respondents had 13 (68.4%) agreeing with professional networks and seek ideas. The total for the average of all the responses is represented at the end of the table. On average, 69 of the

78 respondents (88.5%) agreed or strongly agreed that Professional Development occurred as measured by the five survey items within this construct.

Table 26

Frequencies and Percentages for Professional Development by Years of Experience in Virtual Education by Item (n = 78)

Item	Virtual experience (n)	SD	D	N	A	SA
1. Professional networks	Under 5 (59)	0 (0.0%)	2 (3.4%)	7 (11.9%)	39 (66.1%)	11 (18.6%)
	5 or more (19)	0 (0.0%)	0 (0.0%)	0 (0.0%)	13 (68.4%)	6 (31.6%)
9. Seek ideas	Under 5 (59)	0 (0.0%)	2 (3.4%)	13 (22.0%)	31 (52.5%)	13 (22.0%)
	5 or more (19)	0 (0.0%)	0 (0.0%)	2 (10.5%)	13 (68.4%)	4 (21.1%)
16. PD valued	Under 5 (59)	0 (0.0%)	0 (0.0%)	5 (8.5%)	29 (49.2%)	25 (42.4%)
	5 or more (19)	0 (0.0%)	0 (0.0%)	4 (21.1%)	10 (52.6%)	5 (26.3%)
24. Knowledge base	Under 5 (59)	0 (0.0%)	0 (0.0%)	5 (8.5%)	39 (66.1%)	15 (25.4%)
	5 or more (19)	0 (0.0%)	1 (5.3%)	1 (5.3%)	12 (63.2%)	5 (26.3%)
29. Values improvement	Under 5 (59)	0 (0.0%)	0 (0.0%)	3 (5.1%)	34 (57.6%)	22 (37.3%)
	5 or more (19)	0 (0.0%)	1 (5.3%)	2 (10.5%)	8 (42.1%)	8 (42.1%)
Total	n = 78	0 (0.0%)	1 (1.3%)	8 (10.3%)	46 (59.0%)	23 (29.5%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Professional Development (Gruenert) by total years of experience in education.

Table 27 shows the frequency and percent for the subscale, Professional Development, by total years of experience in education by item of the teachers' responses to the survey. Items 1 and 29, professional networks and values improvement, shows 8 (72.7%) teachers with under 5 years of experience agreeing. Respondents with 5-9 years experience had 15 (75.0%) agree with professional networks. Teachers with 10-14 years of experience show 18 (81.8%) agreed with knowledge base. Participants with 15-19 years of experience indicate 6 (85.7%) agreeing with knowledge base. Teachers with 20-29 years of experience show 6 (60.0%) agreeing on professional networks, seek ideas, PD valued, and values improvement. Thirty years or more of experience teachers show 6 (75.0%) agreeing with professional networks. The total for the average of all the responses is represented at the end of the table. On average, 69 of the 78 respondents

(88.5%) agreed or strongly agreed that Professional Development occurred as measured by the five survey items within this construct.

Table 27

Frequencies and Percentages for Professional Development by Total Years of Experience in Education by Item (n = 78)

Item	Total experience (n)	SD	D	N	A	SA
1. Professional networks	Under 5 (11)	0 (0.0%)	1 (9.1%)	0 (0.0%)	8 (72.7%)	2 (18.2%)
	5-9 (20)	0 (0.0%)	0 (0.0%)	2 (10.0%)	15 (75.0%)	3 (15.0%)
	10-14 (22)	0 (0.0%)	0 (0.0%)	2 (9.1%)	13 (59.1%)	7 (31.8%)
	15-19 (7)	0 (0.0%)	0 (0.0%)	1 (14.3%)	4 (57.1%)	2 (28.6%)
	20-29 (10)	0 (0.0%)	1 (10.0%)	1 (10.0%)	6 (60.0%)	2 (20.0%)
	30 or more (8)	0 (0.0%)	0 (0.0%)	1 (12.5%)	6 (75.0%)	1 (12.5%)
9. Seek ideas	Under 5 (11)	0 (0.0%)	1 (9.1%)	1 (9.1%)	7 (63.6%)	2 (18.2%)
	5-9 (20)	0 (0.0%)	0 (0.0%)	2 (10.0%)	13 (65.0%)	5 (25.0%)
	10-14 (22)	0 (0.0%)	0 (0.0%)	6 (27.3%)	12 (54.5%)	4 (18.2%)
	15-19 (7)	0 (0.0%)	1 (14.3%)	1 (14.3%)	4 (57.1%)	1 (14.3%)
	20-29 (10)	0 (0.0%)	0 (0.0%)	1 (10.0%)	6 (60.0%)	3 (30.0%)
	30 or more (8)	0 (0.0%)	0 (0.0%)	4 (50.0%)	2 (25.0%)	2 (25.0%)
16. PD valued	Under 5 (11)	0 (0.0%)	0 (0.0%)	0 (0.0%)	5 (45.5%)	6 (54.5%)
	5-9 (20)	0 (0.0%)	0 (0.0%)	2 (10.0%)	8 (40.0%)	10 (50.0%)
	10-14 (22)	0 (0.0%)	0 (0.0%)	4 (18.2%)	11 (50.0%)	7 (31.8%)
	15-19 (7)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4 (57.1%)	3 (42.9%)
	20-29 (10)	0 (0.0%)	0 (0.0%)	1 (10.0%)	6 (60.0%)	3 (30.0%)
	30 or more (8)	0 (0.0%)	0 (0.0%)	2 (25.0%)	5 (62.5%)	1 (12.5%)
24. Knowledge base	Under 5 (11)	0 (0.0%)	0 (0.0%)	1 (9.1%)	7 (63.6%)	3 (27.3%)
	5-9 (20)	0 (0.0%)	0 (0.0%)	1 (5.0%)	11 (55.0%)	8 (40.0%)
	10-14 (22)	0 (0.0%)	0 (0.0%)	0 (0.0%)	18 (81.8%)	4 (18.2%)
	15-19 (7)	0 (0.0%)	0 (0.0%)	0 (0.0%)	6 (85.7%)	1 (14.3%)
	20-29 (10)	0 (0.0%)	1 (10.0%)	2 (20.0%)	5 (50.0%)	2 (20.0%)
	30 or more (8)	0 (0.0%)	0 (0.0%)	2 (25.0%)	4 (50.0%)	2 (25.0%)
29. Values improvement	Under 5 (11)	0 (0.0%)	0 (0.0%)	0 (0.0%)	8 (72.7%)	3 (27.3%)
	5-9 (20)	0 (0.0%)	0 (0.0%)	2 (10.0%)	7 (35.0%)	11 (55.0%)
	10-14 (22)	0 (0.0%)	0 (0.0%)	2 (9.1%)	12 (54.5%)	8 (36.4%)
	15-19 (7)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4 (57.1%)	3 (42.9%)
	20-29 (10)	0 (0.0%)	1 (10.0%)	0 (0.0%)	6 (60.0%)	3 (30.0%)
	30 or more (8)	0 (0.0%)	0 (0.0%)	1 (12.5%)	5 (62.5%)	2 (25.0%)
Total	n = 78	0 (0.0%)	1 (1.3%)	8 (10.3%)	46 (59.0%)	23 (29.5%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Collegial Support (Gruenert) by gender. Table 28 shows the frequency and percent for the subscale, Collegial Support, by gender by item of the teachers' responses to the survey. Items 17, ideas valued, show 15 (68.2%) males agreeing. Females indicate 38 (67.9%) agreed with item 10, helping out. At the end of the table, the total for the average of all the responses is represented. On average, 56 of the 78 respondents (71.8%) agreed or strongly agreed that Collegial Support occurred as measured by the four survey items within this construct. Narratives with Tables 28 through 33 highlight Collegial Support.

Table 28

Frequencies and Percentages for Collegial Support by Gender by Item (n = 78)

Item	Gender (n)	SD	D	N	A	SA
4. Trust	Male (22)	0 (0.0%)	0 (0.0%)	4 (18.2%)	12 (54.5%)	6 (27.3%)
	Female (56)	0 (0.0%)	1 (1.8%)	12 (21.4%)	34 (60.7%)	9 (16.1%)
10. Helping out	Male (22)	0 (0.0%)	1 (4.5%)	1 (4.5%)	12 (54.5%)	8 (36.4%)
	Female (56)	0 (0.0%)	0 (0.0%)	6 (10.7%)	38 (67.9%)	12 (21.4%)
17. Ideas valued	Male (22)	0 (0.0%)	0 (0.0%)	2 (9.1%)	15 (68.2%)	5 (22.7%)
	Female (56)	0 (0.0%)	1 (1.8%)	7 (12.5%)	33 (58.9%)	15 (26.8%)
25. Cooperation	Male (22)	0 (0.0%)	7 (31.8%)	8 (36.4%)	5 (22.7%)	2 (9.1%)
	Female (56)	3 (5.4%)	11 (19.6%)	23 (41.1%)	19 (33.9%)	0 (0.0%)
Total	n = 78	1 (1.3%)	5 (6.4%)	16 (20.5%)	42 (53.8%)	14 (17.9%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Collegial Support (Gruenert) by highest degree held. Table 29 shows the frequency and percent for the subscale, Collegial Support, by highest degree held by item of the teachers' responses to the survey. Item 17, ideas valued, illustrates 25 (65.8%) participants with a bachelors degree agreeing. Teachers with a masters degree show 27 (67.5%) agreeing with helping out. The total for the average of all the responses is represented at the end of the table. On average, 56 of the 78 respondents (71.8%) agreed or strongly agreed that Collegial Support occurred as measured by the four survey items within this construct.

Table 29

Frequencies and Percentages for Collegial Support by Highest Degree Held by Item (n = 78)

Item	Degree (n)	SD	D	N	A	SA
4. Trust	Bachelors (38)	0 (0.0%)	1 (2.6%)	8 (21.1%)	24 (63.2%)	5 (13.2%)
	Masters or higher (40)	0 (0.0%)	0 (0.0%)	8 (20.0%)	22 (55.0%)	10 (25.0%)
10. Helping out	Bachelors (38)	0 (0.0%)	1 (2.6%)	5 (13.2%)	23 (60.5%)	9 (23.7%)
	Masters or higher (40)	0 (0.0%)	0 (0.0%)	2 (5.0%)	27 (67.5%)	11 (27.5%)
17. Ideas valued	Bachelors (38)	0 (0.0%)	1 (2.6%)	3 (7.9%)	25 (65.8%)	9 (23.7%)
	Masters or higher (40)	0 (0.0%)	0 (0.0%)	6 (15.0%)	23 (57.5%)	11 (27.5%)
25. Cooperation	Bachelors (38)	1 (2.6%)	11 (28.9%)	15 (39.5%)	9 (23.7%)	2 (5.3%)
	Masters or higher (40)	2 (5.0%)	7 (17.5%)	16 (40.0%)	15 (37.5%)	0 (0.0%)
Total	n = 78	1 (1.3%)	5 (6.4%)	16 (20.5%)	42 (53.8%)	14 (17.9%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Collegial Support (Gruenert) by teaching grade level. Table 30 shows the frequency and percent for the subscale, Collegial Support, by teaching grade level by item of the teachers' responses to the survey. Items 10 and 17, helping out and ideas valued, show 16 (69.6%) 7-12 grade level teachers agreeing. Teachers in 9-12 grade level had 35 (63.6%) agreeing with trust. The total for the average of all the responses is represented at the end of the table. On average, 56 of the 78 respondents (71.8%) agreed or strongly agreed that Collegial Support occurred as measured by the four survey items within this construct.

Table 30

Frequencies and Percentages for Collegial Support by Teaching Grade Level by Item (n = 78)

Item	Grade level (n)	SD	D	N	A	SA
4. Trust	7-12 (23)	0 (0.0%)	1 (4.3%)	6 (26.1%)	11 (47.8%)	5 (21.7%)
	9-12 (55)	0 (0.0%)	0 (0.0%)	10 (18.2%)	35 (63.6%)	10 (18.2%)
10. Helping out	7-12 (23)	0 (0.0%)	0 (0.0%)	1 (4.3%)	16 (69.6%)	6 (26.1%)
	9-12 (55)	0 (0.0%)	1 (1.8%)	6 (10.9%)	34 (61.8%)	14 (25.5%)
17. Ideas valued	7-12 (23)	0 (0.0%)	0 (0.0%)	1 (4.3%)	16 (69.6%)	6 (26.1%)
	9-12 (55)	0 (0.0%)	1 (1.8%)	8 (14.5%)	32 (58.2%)	14 (25.5%)
25. Cooperation	7-12 (23)	1 (4.3%)	8 (34.8%)	8 (34.8%)	6 (26.1%)	0 (0.0%)
	9-12 (55)	2 (3.6%)	10 (18.2%)	23 (41.8%)	18 (32.7%)	2 (3.6%)
Total	n = 78	1 (1.3%)	5 (6.4%)	16 (20.5%)	42 (53.8%)	14 (17.9%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Collegial Support (Gruenert) by subject/content area. Table 31 shows the frequency and percent for the subscale, Collegial Support, by subject/content area by item of the teachers' responses to the survey. Electives teachers show 4 (57.1%) agreeing with trust, helping out, and ideas valued. In addition, 57.1% were neutral on cooperation. Results for English teachers illustrate 10 (58.8%) agreeing on helping out. Foreign language teachers show 7 (77.8%) agreeing with trust and helping out. Health had 5 (55.6%) respondents agreeing on helping out. Math shows 10 (100.0%) teachers agreeing with ideas valued. Science teachers show 10 (100.0%) agree on trust. Social studies respondents had 11 (68.8%) agreeing on trust. The total for the average of all the responses is represented at the end of the table. On average, 56 of the 78 respondents (71.8%) agreed or strongly agreed that Collegial Support occurred as measured by the four survey items within this construct.

Table 31

Frequencies and Percentages for Collegial Support by Subject/Content Area by Item (n = 78)

Item	Subject (n)	SD	D	N	A	SA
4. Trust	Electives (7)	0 (0.0%)	0 (0.0%)	2 (28.6%)	4 (57.1%)	1 (14.3%)
	English (17)	0 (0.0%)	0 (0.0%)	6 (35.3%)	8 (47.1%)	3 (17.6%)
	Foreign Language (9)	0 (0.0%)	0 (0.0%)	1 (11.1%)	7 (77.8%)	1 (11.1%)
	Health (9)	0 (0.0%)	0 (0.0%)	3 (33.3%)	2 (22.2%)	4 (44.4%)
	Math (10)	0 (0.0%)	1 (10.0%)	3 (30.0%)	4 (40.0%)	2 (20.0%)
	Science (10)	0 (0.0%)	0 (0.0%)	0 (0.0%)	10 (100.0%)	0 (0.0%)
	Social Studies (16)	0 (0.0%)	0 (0.0%)	1 (6.3%)	11 (68.8%)	4 (25.0%)
10. Helping out	Electives (7)	0 (0.0%)	0 (0.0%)	1 (14.3%)	4 (57.1%)	2 (28.6%)
	English (17)	0 (0.0%)	0 (0.0%)	1 (5.9%)	10 (58.8%)	6 (35.3%)
	Foreign Language (9)	0 (0.0%)	0 (0.0%)	0 (0.0%)	7 (77.8%)	2 (22.2%)
	Health (9)	0 (0.0%)	0 (0.0%)	1 (11.1%)	5 (55.6%)	3 (33.3%)
	Math (10)	0 (0.0%)	0 (0.0%)	0 (0.0%)	8 (80.0%)	2 (20.0%)
	Science (10)	0 (0.0%)	1 (10.0%)	1 (10.0%)	8 (80.0%)	0 (0.0%)
	Social Studies (16)	0 (0.0%)	0 (0.0%)	3 (18.8%)	8 (50.0%)	5 (31.3%)
17. Ideas valued	Electives (7)	0 (0.0%)	0 (0.0%)	3 (42.9%)	4 (57.1%)	0 (0.0%)
	English (17)	0 (0.0%)	1 (5.9%)	1 (5.9%)	8 (47.1%)	7 (41.2%)
	Foreign Language (9)	0 (0.0%)	0 (0.0%)	0 (0.0%)	6 (66.7%)	3 (33.3%)

Item	Subject (n)	SD	D	N	A	SA
	Health (9)	0 (0.0%)	0 (0.0%)	2 (22.2%)	4 (44.4%)	3 (33.3%)
	Math (10)	0 (0.0%)	0 (0.0%)	0 (0.0%)	10 (100.0%)	0 (0.0%)
	Science (10)	0 (0.0%)	0 (0.0%)	2 (20.0%)	7 (70.0%)	1 (10.0%)
	Social Studies (16)	0 (0.0%)	0 (0.0%)	1 (6.3%)	9 (56.3%)	6 (37.5%)
25. Cooperation	Electives (7)	1 (14.3%)	2 (28.6%)	4 (57.1%)	0 (0.0%)	0 (0.0%)
	English (17)	1 (5.9%)	2 (11.8%)	8 (47.1%)	6 (35.3%)	0 (0.0%)
	Foreign Language (9)	0 (0.0%)	5 (55.6%)	1 (11.1%)	3 (33.3%)	0 (0.0%)
	Health (9)	0 (0.0%)	1 (11.1%)	4 (44.4%)	4 (44.4%)	0 (0.0%)
	Math (10)	0 (0.0%)	1 (10.0%)	5 (50.0%)	4 (40.0%)	0 (0.0%)
	Science (10)	0 (0.0%)	3 (30.0%)	3 (30.0%)	4 (40.0%)	0 (0.0%)
	Social Studies (16)	1 (6.3%)	4 (25.0%)	6 (37.5%)	3 (18.8%)	2 (12.5%)
Total	n = 78	1 (1.3%)	5 (6.4%)	16 (20.5%)	42 (53.8%)	14 (17.9%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Collegial Support (Gruenert) by years of experience in virtual education. Table 32 shows the frequency and percent for the subscale, Collegial Support, by years of experience in virtual education by item of the teachers' responses to the survey. Items 17, ideas valued, shows 37 (62.7%) teachers with under 5 years of experience agreeing. Five years of experience or more teachers had 14 (73.7%) agreeing with helping out. The total for the average of all the responses is represented at the end of the table. On average, 56 of the 78 respondents (71.8%) agreed or strongly agreed that Collegial Support occurred as measured by the four survey items within this construct.

Table 32

Frequencies and Percentages for Collegial Support by Years Experience in Virtual Education by Item (n = 78)

Item	Virtual experience (n)	SD	D	N	A	SA
4. Trust	Under 5 (59)	0 (0.0%)	1 (1.7%)	13 (22.0%)	33 (55.9%)	12 (20.3%)
	5 or more (19)	0 (0.0%)	0 (0.0%)	3 (15.8%)	13 (68.4%)	3 (15.8%)
10. Helping out	Under 5 (59)	0 (0.0%)	0 (0.0%)	7 (11.9%)	36 (61.0%)	16 (27.1%)
	5 or more (19)	0 (0.0%)	1 (5.3%)	0 (0.0%)	14 (73.7%)	4 (21.1%)
17. Ideas valued	Under 5 (59)	0 (0.0%)	1 (1.7%)	4 (6.8%)	37 (62.7%)	17 (28.8%)
	5 or more (19)	0 (0.0%)	0 (0.0%)	5 (26.3%)	11 (57.9%)	3 (15.8%)
25. Cooperation	Under 5 (59)	1 (1.7%)	13 (22.0%)	28 (47.5%)	16 (27.1%)	1 (1.7%)
	5 or more (19)	2 (10.5%)	5 (26.3%)	3 (15.8%)	8 (42.1%)	1 (5.3%)
Total	n = 78	1 (1.3%)	5 (6.4%)	16 (20.5%)	42 (53.8%)	14 (17.9%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Collegial Support (Gruenert) by total years of experience in education. Table 33 shows the frequency and percent for the subscale, Collegial Support, by total years of experience in education by item of the teachers' responses to the survey. Item 4, trust, shows 8 (72.7%) teachers with under 5 years of experience agreeing. Respondents with 5-9 years experience had 12 (60.0%) agreeing with helping out. Teachers with 10-14 years of experience show 16 (72.7%) agreeing with helping out. Participants with 15-19 years of experience indicate 5 (71.4%) agreeing with helping out and ideas valued. Teachers with 20-29 years of experience show 8 (80.0%) agreeing on trust and ideas valued. Thirty years or more of experience teachers show 6 (75.0%) agreeing with ideas valued. The total for the average of all the responses is represented at the end of the table. On average, 56 of the 78 respondents (71.8%) agreed or strongly agreed that Collegial Support occurred as measured by the four survey items within this construct.

Table 33

Frequencies and Percentages for Collegial Support by Total Years Experience in Education by Item (n = 78)

Item	Total experience (n)	SD	D	N	A	SA
4. Trust	Under 5 (11)	0 (0.0%)	0 (0.0%)	1 (9.1%)	8 (72.7%)	2 (18.2%)
	5-9 (20)	0 (0.0%)	0 (0.0%)	5 (25.0%)	9 (45.0%)	6 (30.0%)
	10-14 (22)	0 (0.0%)	0 (0.0%)	6 (27.3%)	13 (59.1%)	3 (13.6%)
	15-19 (7)	0 (0.0%)	1 (14.3%)	1 (14.3%)	4 (57.1%)	1 (14.3%)
	20-29 (10)	0 (0.0%)	0 (0.0%)	1 (10.0%)	8 (80.0%)	1 (10.0%)
	30 or more (8)	0 (0.0%)	0 (0.0%)	2 (25.0%)	4 (50.0%)	2 (25.0%)
10. Helping out	Under 5 (11)	0 (0.0%)	0 (0.0%)	2 (18.2%)	5 (45.5%)	4 (36.4%)
	5-9 (20)	0 (0.0%)	0 (0.0%)	1 (5.0%)	12 (60.0%)	7 (35.0%)
	10-14 (22)	0 (0.0%)	0 (0.0%)	1 (4.5%)	16 (72.7%)	5 (22.7%)
	15-19 (7)	0 (0.0%)	0 (0.0%)	0 (0.0%)	5 (71.4%)	2 (28.6%)
	20-29 (10)	0 (0.0%)	1 (10.0%)	1 (10.0%)	7 (70.0%)	1 (10.0%)
	30 or more (8)	0 (0.0%)	0 (0.0%)	2 (25.0%)	5 (62.5%)	1 (12.5%)
17. Ideas valued	Under 5 (11)	0 (0.0%)	0 (0.0%)	1 (9.1%)	7 (63.6%)	3 (27.3%)
	5-9 (20)	0 (0.0%)	0 (0.0%)	2 (10.0%)	10 (50.0%)	8 (40.0%)
	10-14 (22)	0 (0.0%)	0 (0.0%)	3 (13.6%)	12 (54.5%)	7 (31.8%)
	15-19 (7)	0 (0.0%)	0 (0.0%)	1 (14.3%)	5 (71.4%)	1 (14.3%)
	20-29 (10)	0 (0.0%)	0 (0.0%)	2 (20.0%)	8 (80.0%)	0 (0.0%)
	30 or more (8)	0 (0.0%)	1 (12.5%)	0 (0.0%)	6 (75.0%)	1 (12.5%)
25. Cooperation	Under 5 (11)	0 (0.0%)	3 (27.3%)	4 (36.4%)	4 (36.4%)	0 (0.0%)
	5-9 (20)	1 (5.0%)	5 (25.0%)	8 (40.0%)	5 (25.0%)	1 (5.0%)
	10-14 (22)	1 (4.5%)	4 (18.2%)	9 (40.9%)	7 (31.8%)	1 (4.5%)
	15-19 (7)	0 (0.0%)	2 (28.6%)	1 (14.3%)	4 (57.1%)	0 (0.0%)
	20-29 (10)	0 (0.0%)	3 (30.0%)	3 (30.0%)	4 (40.0%)	0 (0.0%)
	30 or more (8)	1 (12.5%)	1 (12.5%)	6 (75.0%)	0 (0.0%)	0 (0.0%)
Total	n = 78	1 (1.3%)	5 (6.4%)	16 (20.5%)	42 (53.8%)	14 (17.9%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Unity of Purpose (Gruenert) by gender. Table 34 shows the frequency and percent for the subscale, Unity of Purpose, by gender by item of the teachers' responses to the survey. Items 5 and19, support mission and understand mission, show 13 (59.4%) males agreeing. Females indicate 37 (66.1%) agreed with item 12, clear sense. At the end of the table, the total for the average of all the responses is represented. On average, 70 of the 78 respondents (89.7%) agreed or strongly agreed that Unity of Purpose occurred as

measured by the three survey items within this construct. Narratives with Tables 34 through 39 highlight Unity of Purpose.

Table 34

Frequencies and Percentages for Unity of Purpose by Gender by Item (n = 78)

Item	Gender (n)	SD	D	N	A	SA
5. Support mission	Male (22)	0 (0.0%)	0 (0.0%)	0 (0.0%)	13 (59.1%)	9 (40.9%)
	Female (56)	0 (0.0%)	1 (1.8%)	4 (7.1%)	35 (62.5%)	16 (28.6%)
12. Clear sense	Male (22)	0 (0.0%)	0 (0.0%)	2 (9.1%)	10 (45.5%)	10 (45.5%)
	Female (56)	0 (0.0%)	0 (0.0%)	5 (8.9%)	37 (66.1%)	14 (25.0%)
19. Understand mission	Male (22)	0 (0.0%)	0 (0.0%)	2 (9.1%)	13 (59.1%)	7 (31.8%)
	Female (56)	0 (0.0%)	2 (3.6%)	9 (16.1%)	30 (53.6%)	15 (26.8%)
Total	n = 78	0 (0.0%)	1 (1.3%)	7 (9.0%)	46 (59.0%)	24 (30.8%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Unity of Purpose (Gruenert) by highest degree held. Table 35 shows the frequency and percent for the subscale, Unity of Purpose, by highest degree held by item of the teachers' responses to the survey. Item 5, support mission, illustrates 29 (76.3%) participants with a bachelors degree agreeing. Teachers with a masters degree show 21 (52.5%) agreeing with clear sense. The total for the average of all the responses is represented at the end of the table. On average, 70 of the 78 respondents (89.7%) agreed or strongly agreed that Unity of Purpose occurred as measured by the three survey items within this construct.

Table 35

Frequencies and Percentages for Unity of Purpose by Highest Degree Held by Item (n = 78)

Item	Degree (n)	SD	D	N	A	SA
5. Support mission	Bachelors (38)	0 (0.0%)	1 (2.6%)	0 (0.0%)	29 (76.3%)	8 (21.1%)
	Masters or higher (40)	0 (0.0%)	0 (0.0%)	4 (10.0%)	19 (47.5%)	17 (42.5%)
12. Clear sense	Bachelors (38)	0 (0.0%)	0 (0.0%)	2 (5.3%)	26 (68.4%)	10 (26.3%)
	Masters or higher (40)	0 (0.0%)	0 (0.0%)	5 (12.5%)	21 (52.5%)	14 (35.0%)
19. Understand mission	Bachelors (38)	0 (0.0%)	0 (0.0%)	4 (10.5%)	25 (65.8%)	9 (23.7%)
	Masters or higher (40)	0 (0.0%)	2 (5.0%)	7 (17.5%)	18 (45.0%)	13 (32.5%)
Total	n = 78	0 (0.0%)	1 (1.3%)	7 (9.0%)	46 (59.0%)	24 (30.8%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Unity of Purpose (Gruenert) by teaching grade level. Table 36 shows the frequency and percent for the subscale, Unity of Purpose, by teaching grade level by item of the teachers' responses to the survey. Item 5, support mission, shows 16 (69.6%) 7-12 grade level teachers agreeing. Teachers in 9-12 grade level had 32 (58.2%) agreeing with support mission and clear sense. The total for the average of all the responses is represented at the end of the table. On average, 70 of the 78 respondents (89.7%) agreed or strongly agreed that Unity of Purpose occurred as measured by the three survey items within this construct.

Table 36

Frequencies and Percentages for Unity of Purpose by Teaching Grade Level by Item (n = 78)

Item	Grade level (n)	SD	D	N	A	SA
5. Support mission	7-12 (23)	0 (0.0%)	1 (4.3%)	0 (0.0%)	16 (69.6%)	6 (26.1%)
	9-12 (55)	0 (0.0%)	0 (0.0%)	4 (7.3%)	32 (58.2%)	19 (34.5%)
12. Clear sense	7-12 (23)	0 (0.0%)	0 (0.0%)	2 (8.7%)	15 (65.2%)	6 (26.1%)
	9-12 (55)	0 (0.0%)	0 (0.0%)	5 (9.1%)	32 (58.2%)	18 (32.7%)
19. Understand mission	7-12 (23)	0 (0.0%)	0 (0.0%)	5 (21.7%)	12 (52.2%)	6 (26.1%)
	9-12 (55)	0 (0.0%)	2 (3.6%)	6 (10.9%)	31 (56.4%)	16 (29.1%)
Total	n = 78	0 (0.0%)	1 (1.3%)	7 (9.0%)	46 (59.0%)	24 (30.8%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Unity of Purpose (Gruenert) by subject/content area. Table 37 shows the frequency and percent for the subscale, Unity of Purpose, by subject/content area by item of the teachers' responses to the survey. Electives teachers show 5 (71.4%) agreeing with clear sense. Results for English teachers illustrate 12 (70.6%) agreeing with support mission. Foreign language teachers show 7 (77.8%) agreeing with clear sense. Health respondents had 7 (77.8%) agreeing on clear sense. Math participants show 9 (90.0%) agreeing on understand mission. Science teachers show 8 (80.0%) agree on support mission. Social studies teachers had 10 (62.5%) agreeing on understand mission. The total for the average of all the responses is represented at the end of the table. On average,

70 of the 78 respondents (89.7%) agreed or strongly agreed that Unity of Purpose occurred as measured by the three survey items within this construct.

Table 37

Frequencies and Percentages for Unity of Purpose by Subject/Content Area by Item (n = 78)

Item	Subject (n)	SD	D	N	A	SA
5. Support mission	Electives (7)	0 (0.0%)	0 (0.0%)	1 (14.3%)	3 (42.9%)	3 (42.9%)
	English (17)	0 (0.0%)	0 (0.0%)	0 (0.0%)	12 (70.6%)	5 (29.4%)
	Foreign Language (9)	0 (0.0%)	0 (0.0%)	0 (0.0%)	6 (66.7%)	3 (33.3%)
	Health (9)	0 (0.0%)	0 (0.0%)	1 (11.1%)	4 (44.4%)	4 (44.4%)
	Math (10)	0 (0.0%)	1 (10.0%)	0 (0.0%)	7 (70.0%)	2 (20.0%)
	Science (10)	0 (0.0%)	0 (0.0%)	2 (20.0%)	8 (80.0%)	0 (0.0%)
	Social Studies (16)	0 (0.0%)	0 (0.0%)	0 (0.0%)	8 (50.0%)	8 (50.0%)
12. Clear sense	Electives (7)	0 (0.0%)	0 (0.0%)	0 (0.0%)	5 (71.4%)	2 (28.6%)
	English (17)	0 (0.0%)	0 (0.0%)	4 (23.5%)	6 (35.3%)	7 (41.2%)
	Foreign Language (9)	0 (0.0%)	0 (0.0%)	0 (0.0%)	7 (77.8%)	2 (22.2%)
	Health (9)	0 (0.0%)	0 (0.0%)	0 (0.0%)	7 (77.8%)	2 (22.2%)
	Math (10)	0 (0.0%)	0 (0.0%)	1 (10.0%)	7 (70.0%)	2 (20.0%)
	Science (10)	0 (0.0%)	0 (0.0%)	2 (20.0%)	7 (70.0%)	1 (10.0%)
	Social Studies (16)	0 (0.0%)	0 (0.0%)	0 (0.0%)	8 (50.0%)	8 (50.0%)
19. Understand mission	Electives (7)	0 (0.0%)	1 (14.3%)	0 (0.0%)	3 (42.9%)	3 (42.9%)
	English (17)	0 (0.0%)	0 (0.0%)	6 (35.3%)	5 (29.4%)	6 (35.3%)
	Foreign Language (9)	0 (0.0%)	0 (0.0%)	1 (11.1%)	5 (55.6%)	3 (33.3%)
	Health (9)	0 (0.0%)	0 (0.0%)	2 (22.2%)	4 (44.4%)	3 (33.3%)
	Math (10)	0 (0.0%)	0 (0.0%)	1 (10.0%)	9 (90.0%)	0 (0.0%)
	Science (10)	0 (0.0%)	1 (10.0%)	1 (10.0%)	7 (70.0%)	1 (10.0%)
	Social Studies (16)	0 (0.0%)	0 (0.0%)	0 (0.0%)	10 (62.5%)	6 (37.5%)
Total	n = 78	0 (0.0%)	1 (1.3%)	7 (9.0%)	46 (59.0%)	24 (30.8%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Unity of Purpose (Gruenert) by years of experience in virtual education. Table 38 shows the frequency and percent for the subscale, Unity of Purpose, by years of experience in virtual education by item of the teachers' responses to the survey. Item 5, support mission, shows 38 (64.4%) teachers with under 5 years of experience agreeing. Five years of experience or more teachers had 10 (52.6%) agreeing with support mission and clear sense. The total for the average of all the responses is represented at the end of

the table. On average, 70 of the 78 respondents (89.7%) agreed or strongly agreed that Unity of Purpose occurred as measured by the three survey items within this construct.

Table 38

Frequencies and Percentages for Unity of Purpose by Years of Experience in Virtual Education by Item (n = 78)

Item	Virtual experience (n)	SD	D	N	A	SA
5. Support mission	Under 5 (59)	0 (0.0%)	1 (1.7%)	2 (3.4%)	38 (64.4%)	18 (30.5%)
	5 or more (19)	0 (0.0%)	0 (0.0%)	2 (10.5%)	10 (52.6%)	7 (36.8%)
12. Clear sense	Under 5 (59)	0 (0.0%)	0 (0.0%)	3 (5.1%)	37 (62.7%)	19 (32.2%)
	5 or more (19)	0 (0.0%)	0 (0.0%)	4 (21.1%)	10 (52.6%)	5 (26.3%)
19. Understand mission	Under 5 (59)	0 (0.0%)	1 (1.7%)	8 (13.6%)	35 (59.3%)	15 (25.4%)
	5 or more (19)	0 (0.0%)	1 (5.3%)	3 (15.8%)	8 (42.1%)	7 (36.8%)
Total	n = 78	0 (0.0%)	1 (1.3%)	7 (9.0%)	46 (59.0%)	24 (30.8%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Unity of Purpose (Gruenert) by total years of experience in education. Table 39 shows the frequency and percent for the subscale, Unity of Purpose, by total years of experience in education by item of the teachers' responses to the survey. Item 5, support mission, shows 8 (72.7%) teachers with under 5 years of experience agreeing. Respondents with 5-9 years experience had 13 (65.0%) agreeing with clear sense. Teachers with 10-14 years of experience show 15 (68.2%) agreed with clear sense. Participants with 15-19 years of experience indicate 5 (71.4%) agreeing with support mission. Teachers with 20-29 years of experience show 7 (70.0%) agreeing on support mission. Thirty years or more of experience teachers show 5 (62.5%) agreeing with understand mission. The total for the average of all the responses is represented at the end of the table. On average, 70 of the 78 respondents (89.7%) agreed or strongly agreed that Unity of Purpose occurred as measured by the three survey items within this construct.

Table 39

Frequencies and Percentages for Unity of Purpose by Total Years of Experience in Education by Item (n = 78)

Item	Total experience (n)	SD	D	N	A	SA
5. Support mission	Under 5 (11)	0 (0.0%)	0 (0.0%)	0 (0.0%)	8 (72.7%)	3 (27.3%)
	5-9 (20)	0 (0.0%)	0 (0.0%)	1 (5.0%)	11 (55.0%)	8 (40.0%)
	10-14 (22)	0 (0.0%)	0 (0.0%)	1 (3.5%)	13 (59.1%)	8 (36.4%)
	15-19 (7)	0 (0.0%)	1 (14.3%)	0 (0.0%)	5 (70.4%)	1 (14.3%)
	20-29 (10)	0 (0.0%)	0 (0.0%)	1 (10.0%)	7 (70.0%)	2 (20.0%)
	30 or more (8)	0 (0.0%)	0 (0.0%)	1 (12.5%)	4 (50.0%)	3 (37.5%)
12. Clear sense	Under 5 (11)	0 (0.0%)	0 (0.0%)	1 (9.1%)	7 (63.6%)	3 (27.3%)
	5-9 (20)	0 (0.0%)	0 (0.0%)	1 (5.0%)	13 (65.0%)	6 (30.0%)
	10-14 (22)	0 (0.0%)	0 (0.0%)	2 (9.1%)	15 (68.2%)	5 (22.7%)
	15-19 (7)	0 (0.0%)	0 (0.0%)	1 (14.3%)	4 (57.1%)	2 (28.6%)
	20-29 (10)	0 (0.0%)	0 (0.0%)	2 (20.0%)	4 (40.0%)	4 (40.0%)
	30 or more (8)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4 (50.0%)	4 (50.0%)
19. Understand mission	Under 5 (11)	0 (0.0%)	0 (0.0%)	2 (18.2%)	7 (63.6%)	2 (18.2%)
	5-9 (20)	0 (0.0%)	0 (0.0%)	2 (10.0%)	11 (55.0%)	7 (35.0%)
	10-14 (22)	0 (0.0%)	1 (4.5%)	2 (9.1%)	12 (54.5%)	7 (31.8%)
	15-19 (7)	0 (0.0%)	0 (0.0%)	2 (28.6%)	4 (57.1%)	1 (14.3%)
	20-29 (10)	0 (0.0%)	1 (10.0%)	1 (10.0%)	4 (40.0%)	4 (40.0%)
	30 or more (8)	0 (0.0%)	0 (0.0%)	2 (25.0%)	5 (62.5%)	1 (12.5%)
Total	n = 78	0 (0.0%)	1 (1.3%)	7 (9.0%)	46 (59.0%)	24 (30.8%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Learning Partnership (Gruenert) by gender. Table 40 shows the frequency and percent for the subscale, Learning Partnership, by gender by item of the teachers' responses to the survey. Item 21, communications, shows 17 (77.3%) males agreeing. Females indicate 44 (78.6%) agreed with item 13, parents trust. The total for the average of all the responses is represented at the end of the table. On average, 60 of the 78 respondents (76.9%) agreed or strongly agreed that Learning Partnership occurred as measured by the four survey items within this construct. Narratives with Tables 40 through 45 highlight Learning Partnership.

Table 40

Frequencies and Percentages for Learning Partnership by Gender by Item (n = 78)

Item	Gender (n)	SD	D	N	A	SA
6. Expectations	Male (22)	0 (0.0%)	1 (4.5%)	5 (22.7%)	12 (54.5%)	4 (18.2%)
	Female (56)	0 (0.0%)	6 (10.7%)	17 (30.4%)	30 (53.6%)	3 (5.4%)
13. Parents trust	Male (22)	0 (0.0%)	0 (0.0%)	2 (9.1%)	15 (68.2%)	5 (22.7%)
	Female (56)	0 (0.0%)	1 (1.8%)	9 (16.1%)	44 (78.6%)	2 (3.6%)
21. Communications	Male (22)	0 (0.0%)	0 (0.0%)	1 (4.5%)	17 (77.3%)	4 (18.2%)
	Female (56)	0 (0.0%)	3 (5.4%)	7 (12.5%)	30 (53.6%)	16 (28.6%)
32. Responsibility	Male (22)	0 (0.0%)	0 (0.0%)	5 (22.7%)	14 (63.6%)	3 (13.6%)
	Female (56)	2 (3.6%)	2 (3.6%)	14 (25.0%)	36 (64.3%)	2 (3.6%)
Total	n = 78	.5 (.6%)	3 (3.8%)	15 (19.2%)	50 (64.1%)	10 (12.8%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Learning Partnership (Gruenert) by highest degree held. Table 41 shows the frequency and percent for the subscale, Learning Partnership, by highest degree held by item of the teachers' responses to the survey. Item 13, parents trust, illustrates 27 (71.1%) participants with a bachelors degree agreeing. Teachers with a masters degree show 32 (80.0%) agreeing with parents trust as well. The total for the average of all the responses is represented at the end of the table. On average, 60 of the 78 respondents (76.9%) agreed or strongly agreed that Learning Partnership occurred as measured by the four survey items within this construct.

Table 41

Frequencies and Percentages for Learning Partnership by Highest Degree Held by Item (n = 78)

Item	Degree (n)	SD	D	N	A	SA
6. Expectations	Bachelors (38)	0 (0.0%)	3 (7.9%)	12 (31.6%)	21 (55.3%)	2 (5.3%)
	Masters or higher (40)	0 (0.0%)	4 (10.0%)	10 (25.0%)	21 (52.5%)	5 (12.5%)
13. Parents trust	Bachelors (38)	0 (0.0%)	0 (0.0%)	8 (21.1%)	27 (71.1%)	3 (7.9%)
	Masters or higher (40)	0 (0.0%)	1 (2.5%)	3 (7.5%)	32 (80.0%)	4 (10.0%)
21. Communications	Bachelors (38)	0 (0.0%)	3 (7.9%)	2 (5.3%)	26 (68.4%)	7 (18.4%)
	Masters or higher (40)	0 (0.0%)	0 (0.0%)	6 (15.0%)	21 (52.5%)	13 (32.5%)
32. Responsibility	Bachelors (38)	1 (2.6%)	2 (5.3%)	11 (28.9%)	22 (57.9%)	2 (5.3%)
	Masters or higher (40)	1 (2.5%)	0 (0.0%)	8 (20.0%)	28 (70.0%)	3 (7.5%)
Total	n = 78	.5 (.6%)	3 (3.8%)	15 (19.2%)	50 (64.1%)	10 (12.8%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Learning Partnership (Gruenert) by teaching grade level. Table 42 shows the frequency and percent for the subscale, Learning Partnership, by teaching grade level by item of the teachers' responses to the survey. Item 13, parents trust, show 18 (78.3%) 7-12 grade level teachers agreeing. Teachers in 9-12 grade level had 41 (74.5%) agreeing with parents trust, too. The total for the average of all the responses is represented at the end of the table. On average, 60 of the 78 respondents (76.9%) agreed or strongly agreed that Learning Partnership occurred as measured by the four survey items within this construct.

Table 42

Frequencies and Percentages for Learning Partnership by Teaching Grade Level by Item (n = 78)

Item	Grade level (n)	SD	D	N	A	SA
6. Expectations	7-12 (23)	0 (0.0%)	3 (13.0%)	9 (39.1%)	8 (34.8%)	3 (13.0%)
	9-12 (55)	0 (0.0%)	4 (7.3%)	13 (23.6%)	34 (61.8%)	4 (7.3%)
13. Parents trust	7-12 (23)	0 (0.0%)	1 (4.3%)	2 (8.7%)	18 (78.3%)	2 (8.7%)
	9-12 (55)	0 (0.0%)	0 (0.0%)	9 (16.4%)	41 (74.5%)	5 (9.1%)
21. Communications	7-12 (23)	0 (0.0%)	1 (4.3%)	2 (8.7%)	13 (56.5%)	7 (30.4%)
	9-12 (55)	0 (0.0%)	2 (3.6%)	6 (10.9%)	34 (61.8%)	13 (23.6%)
32. Responsibility	7-12 (23)	1 (4.3%)	1 (4.3%)	3 (13.0%)	17 (73.9%)	1 (4.3%)
	9-12 (55)	1 (1.8%)	1 (1.8%)	16 (29.1%)	33 (60.0%)	4 (7.3%)
Total	n = 78	.5 (.6%)	3 (3.8%)	15 (19.2%)	50 (64.1%)	10 (12.8%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Learning Partnership (Gruenert) by subject/content area. Table 43 shows the frequency and percent for the subscale, Learning Partnership, by subject/content area by item of the teachers' responses to the survey. Electives teachers show 5 (71.4%) agreeing with parents trust. Results for English teachers illustrate 14 (82.4%) agreeing with parents trust. Foreign language teachers show 8 (88.9%) agreeing with parents trust. Health respondents had 6 (66.7%) agreeing on parents trust and responsibility. Math teachers show 8 (80.0%) agreeing on parents trust. Science teachers show 9 (90.0%) agree on communications. Social studies respondents had 11 (68.8%) agreeing on responsibility.

The total for the average of all the responses is represented at the end of the table. On average, 60 of the 78 respondents (76.9%) agreed or strongly agreed that Learning Partnership occurred as measured by the four survey items within this construct.

Table 43

Frequencies and Percentages for Learning Partnership by Subject/Content Area by Item (n = 78)

Item	Subject (n)	SD	D	N	A	SA
6. Expectations	Electives (7)	0 (0.0%)	1 (14.3%)	2 (28.6%)	4 (57.1%)	0 (0.0%)
	English (17)	0 (0.0%)	2 (11.8%)	3 (17.6%)	11 (64.7%)	1 (5.9%)
	Foreign Language (9)	0 (0.0%)	1 (11.1%)	0 (0.0%)	7 (77.8%)	1 (11.1%)
	Health (9)	0 (0.0%)	0 (0.0%)	4 (44.4%)	3 (33.3%)	2 (22.2%)
	Math (10)	0 (0.0%)	2 (20.0%)	2 (20.0%)	5 (50.0%)	1 (10.0%)
	Science (10)	0 (0.0%)	0 (0.0%)	6 (60.0%)	4 (40.0%)	0 (0.0%)
	Social Studies (16)	0 (0.0%)	1 (6.3%)	5 (31.3%)	8 (50.0%)	2 (12.5%)
13. Parents trust	Electives (7)	0 (0.0%)	1 (14.3%)	1 (14.3%)	5 (71.4%)	0 (0.0%)
	English (17)	0 (0.0%)	0 (0.0%)	2 (11.8%)	14 (82.4%)	1 (5.9%)
	Foreign Language (9)	0 (0.0%)	0 (0.0%)	1 (11.1%0	8 (88.9%)	0 (0.0%)
	Health (9)	0 (0.0%)	0 (0.0%)	2 (22.2%)	6 (66.7%)	1 (11.1%)
	Math (10)	0 (0.0%)	0 (0.0%)	0 (0.0%)	8 (80.0%)	2 (20.0%)
	Science (10)	0 (0.0%)	0 (0.0%)	2 (20.0%)	8 (80.0%)	0 (0.0%)
	Social Studies (16)	0 (0.0%)	0 (0.0%)	3 (18.8%)	10 (62.5%)	3 (18.8%)
21. Communications	Electives (7)	0 (0.0%)	1 (14.3%)	1 (14.3%)	4 (57.1%)	1 (14.3%)
	English (17)	0 (0.0%)	0 (0.0%)	0 (0.0%)	11 (64.7%)	6 (35.3%)
	Foreign Language (9)	0 (0.0%)	0 (0.0%)	0 (0.0%)	5 (55.6%)	4 (44.4%)
	Health (9)	0 (0.0%)	1 (11.1%)	1 (11.1%)	5 (55.6%)	2 (22.2%)
	Math (10)	0 (0.0%)	1 (10.0%)	3 (30.0%)	4 (40.0%)	2 (20.0%)
	Science (10)	0 (0.0%)	0 (0.0%)	1 (10.0%)	9 (90.0%)	0 (0.0%)
	Social Studies (16)	0 (0.0%)	0 (0.0%)	2 (12.5%)	9 (56.3%)	5 (31.3%)
32. Responsibility	Electives (7)	1 (14.3%)	1 (14.3%)	0 (0.0%)	5 (71.4%)	0 (0.0%)
	English (17)	0 (0.0%)	0 (0.0%)	5 (29.4%)	11 (64.7%)	1 (5.9%)
	Foreign Language (9)	0 (0.0%)	1 (11.1%)	1 (11.1%)	7 (77.8%)	0 (0.0%)
	Health (9)	0 (0.0%)	0 (0.0%)	3 (33.3%)	6 (66.7%)	0 (0.0%)
	Math (10)	1 (10.0%)	0 (0.0%)	3 (30.0%)	5 (50.0%)	1 (10.0%)
	Science (10)	0 (0.0%)	0 (0.0%)	5 (50.0%)	5 (50.0%)	0 (0.0%)
	Social Studies (16)	0 (0.0%)	0 (0.0%)	2 (12.5%)	11 (68.8%)	3 (18.8%)
Total	n = 78	.5 (.6%)	3 (3.8%)	15 (19.2%)	50 (64.1%)	10 (12.8%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Learning Partnership (Gruenert) by years of experience in virtual education.

Table 44 shows the frequency and percent for the subscale, Learning Partnership, by

years of experience in virtual education by item of the teachers' responses to the survey. Item 13, parents trust, shows 45 (76.3%) teachers with under 5 years of experience agreeing. Five years of experience or more teachers had 14 (73.7%) agreeing with parents trust. The total for the average of all the responses is represented at the end of the table. On average, 60 of the 78 respondents (76.9%) agreed or strongly agreed that Learning Partnership occurred as measured by the four survey items within this construct.

Table 44

Frequencies and Percentages for Learning Partnership by Years of Experience in Virtual Education by Item (n = 78)

Item	Virtual experience (n)	SD	D	N	A	SA
6. Expectations	Under 5 (59)	0 (0.0%)	6 (10.2%)	17 (28.8%)	31 (52.5%)	5 (8.5%)
	5 or more (19)	0 (0.0%)	1 (5.3%)	5 (26.3%)	11 (57.9%)	2 (10.5%)
13. Parents trust	Under 5 (59)	0 (0.0%)	0 (0.0%)	9 (15.3%)	45 (76.3%)	5 (8.5%)
	5 or more (19)	0 (0.0%)	1 (5.3%)	2 (10.5%)	14 (73.7%)	2 (10.5%)
21. Communications	Under 5 (59)	0 (0.0%)	3 (5.1%)	7 (11.9%)	35 (59.3%)	14 (23.7%)
	5 or more (19)	0 (0.0%)	0 (0.0%)	1 (5.3%)	12 (63.2%)	6 (31.6%)
32. Responsibility	Under 5 (59)	2 (3.4%)	2 (3.4%)	13 (22.0%)	39 (66.1%)	3 (5.1%)
	5 or more (19)	0 (0.0%)	0 (0.0%)	6 (31.6%)	11 (57.9%)	2 (10.5%)
Total	n = 78	.5 (.6%)	3 (3.8%)	15 (19.2%)	50 (64.1%)	10 (12.8%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Learning Partnership (Gruenert) by total years of experience in education. Table 45 shows the frequency and percent for the subscale, Learning Partnership, by total years of experience in education by item of the teachers' responses to the survey. Item 32, responsibility, shows 8 (72.7%) teachers with under 5 years of experience agreeing. Respondents with 5-9 years experience had 14 (70.0%) agreeing with parents trust. Teachers with 10-14 years of experience show 19 (86.4%) agreed with parents trust. Participants with 15-19 years of experience indicate 6 (85.7%) agreeing with parents trust. Teachers with 20-29 years of experience show 9 (90.0%) agreeing on responsibility, item 32. Thirty years or more of experience teachers show 6 (75.0%)

agreeing with parents trust and communications. The total for the average of all the responses is represented at the end of the table. On average, 60 of the 78 respondents (76.9%) agreed or strongly agreed that Learning Partnership occurred as measured by the four survey items within this construct.

Table 45

Frequencies and Percentages for Learning Partnership by Total Years of Experience in Education by Item (n = 78)

Item	Total experience (n)	SD	D	N	A	SA
6. Expectations	Under 5 (11)	0 (0.0%)	1 (9.1%)	3 (27.3%)	5 (45.5%)	2 (18.2%)
	5-9 (20)	0 (0.0%)	1 (5.0%)	5 (25.0%)	12 (60.0%)	2 (10.0%)
	10-14 (22)	0 (0.0%)	2 (9.1%)	5 (22.7%)	14 (63.6%)	1 (4.5%)
	15-19 (7)	0 (0.0%)	2 (28.6%)	2 (28.6%)	2 (28.6%)	1 (14.3%)
	20-29 (10)	0 (0.0%)	0 (0.0%)	4 (40.0%)	6 (60.0%)	0 (0.0%)
	30 or more (8)	0 (0.0%)	1 (12.5%)	3 (37.5%)	3 (37.5%)	1 (12.5%)
13. Parents trust	Under 5 (11)	0 (0.0%)	0 (0.0%)	3 (27.3%)	7 (63.6%)	1 (9.1%)
	5-9 (20)	0 (0.0%)	0 (0.0%)	4 (20.0%)	14 (70.0%)	2 (10.0%)
	10-14 (22)	0 (0.0%)	1 (4.5%)	1 (4.5%)	19 (86.4%)	1 (4.5%)
	15-19 (7)	0 (0.0%)	0 (0.0%)	0 (0.0%)	6 (85.7%)	1 (14.3%)
	20-29 (10)	0 (0.0%)	0 (0.0%)	2 (20.0%)	7 (70.0%)	1 (10.0%)
	30 or more (8)	0 (0.0%)	0 (0.0%)	1 (12.5%)	6 (75.0%)	1 (12.5%)
21. Communications	Under 5 (11)	0 (0.0%)	1 (9.1%)	0 (0.0%)	6 (54.5%)	4 (36.4%)
	5-9 (20)	0 (0.0%)	1 (5.0%)	2 (10.0%)	11 (55.0%)	6 (30.0%)
	10-14 (22)	0 (0.0%)	0 (0.0%)	4 (18.2%)	13 (59.1%)	5 (22.7%)
	15-19 (7)	0 (0.0%)	1 (14.3%)	1 (14.3%)	3 (42.9%)	2 (28.6%)
	20-29 (10)	0 (0.0%)	0 (0.0%)	1 (10.0%)	8 (80.0%)	1 (10.0%)
	30 or more (8)	0 (0.0%)	0 (0.0%)	0 (0.0%)	6 (75.0%)	2 (25.0%)
32. Responsibility	Under 5 (11)	0 (0.0%)	1 (9.1%)	1 (9.1%)	8 (72.7%)	1 (9.1%)
	5-9 (20)	0 (0.0%)	1 (5.0%)	7 (35.0%)	10 (50.0%)	2 (10.0%)
	10-14 (22)	1 (4.5%)	0 (0.0%)	6 (27.3%)	14 (63.6%)	1 (4.5%)
	15-19 (7)	1 (14.3%)	0 (0.0%)	2 (28.6%)	4 (57.1%)	0 (0.0%)
	20-29 (10)	0 (0.0%)	0 (0.0%)	1 (10.0%)	9 (90.0%)	0 (0.0%)
	30 or more (8)	0 (0.0%)	0 (0.0%)	2 (25.0%)	5 (62.5%)	1 (12.5%)
Total	n = 78	.5 (.6%)	3 (3.8%)	15 (19.2%)	50 (64.1%)	10 (12.8%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

All subscales (Gruenert). Table 46 depicts frequency and percent for all subscales. There were no significant differences in Likert scale scores within each subscale and the independent variables. However, scores varied between subscales. Unity

of Purpose, and Professional Development ranked one and two with nearly 90% of the respondents in agreement on survey items under those subscales. Collaborative Leadership, and Learning Partnership ranked third with 76.9% of respondents agreeing or strongly agreeing with survey items under those subscales. Ranking fifth was Collegial Support with 71.7% of the all respondents agreeing or strongly agreeing. Teacher Collaboration, however, ranked last with only 33.3% of the 78 respondents agreeing or strongly agreeing.

Table 46

Frequencies and Percentages by Subscale Factor (n = 78)

Subscale factor	SD/D	N	A/SA
Collaborative Leadership	4 (5.1%)	14 (17.9%)	60 (76.9%)
Teacher Collaboration	30 (38.5%)	23 (29.5%)	26 (33.3%)
Professional Development	1 (1.3%)	8 (10.3%)	69 (88.5%)
Collegial Support	6 (7.7%)	16 (20.5%)	56 (71.7%)
Unity of Purpose	1 (1.3%)	7 (9.0%)	70 (89.8%)
Learning Partnership	3.5 (4.4%)	15 (19.2%)	60 (76.9%)

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Research Question Two

The second research question was concerned with how many items have internal consistency and are reliable on the *Virtual School Culture Survey-Teacher Form* (VSCS-TF). Cronbach's alpha was applied to determine the reliability and internal consistency of this instrument. Gruenert (1998) established the reliability of the *School Culture Survey-Teacher Form*. Based on recommendations by Field (2005), the standard was set at > 0.80. Cronk (2010) notes a reliability coefficient close to 1.00 indicates good internal consistency and a coefficient close to 0.00 indicates poor consistency. The Cronbach's alpha reliability coefficient for the VSCS-TF was found to be 0.931 (n=78). Table 47 depicts the VSCS-TF internal consistency reliability utilizing Cronbach's alpha.

Table 47

Virtual School Culture Survey-Teacher Form Reliability Data

Survey	n	Reliability Coefficient
VSCS-TF	78	0.931

Cronk (2010) indicates another way to test reliability is to assess internal consistency of the data by conducting an item-total analysis. The Spearman *rho* correlation was used to conduct this analysis because the data were nominal. According to Cronk, item-total correlations should be positive and greater than 0.3 to indicate internal consistency. Tables 48-53 illustrate that Collaborative Leadership, Teacher Collaboration, Collegial Support, Professional Development, Unity of Purpose, and Learning Partnership subscales were found to be internally consistent within each subscale as none of the Spearman *rho* correlation values fell below 0.4. Table 54 shows that all subscales within the survey were also found to be internally consistent with *rho* values in the 0.6 to 0.9 range.

Table 48

Spearman rho Correlations for Collaborative Leadership Items

Item	*n*	*rho*	*p*
2. Ideas valued	78	0.690	0.000
7. Teachers trusted	78	0.692	0.000
11. Leaders praise	78	0.681	0.000
14. Decision making	78	0.713	0.000
18. Leaders facilitate	78	0.476	0.000
20. Informed teachers	78	0.707	0.000
22. Policy involvement	78	0.701	0.000
26. Teachers rewarded	78	0.728	0.000
27. Risk taking	78	0.770	0.000
30. Instruction time	78	0.574	0.000
31. Share ideas	78	0.645	0.000

Table 49

Spearman rho Correlations for Teacher Collaboration Items

Item	*n*	*rho*	*p*
3. Dialogue	78	0.709	0.000
8. Plan together	78	0.766	0.000
15. Observation	78	0.760	0.000
23. Teaching aware	78	0.660	0.000
28. Work together	78	0.746	0.000

Table 50

Spearman rho Correlations for Collegial Support Items

Item	*n*	*rho*	*p*
4. Trust	78	0.654	0.000
10. Helping out	78	0.680	0.000
17. Ideas valued	78	0.766	0.000
25. Cooperation	78	0.734	0.000

Table 51

Spearman rho Correlations for Professional Development Items

Item	*n*	*rho*	*p*
1. Professional networks	78	0.551	0.000
9. Seek ideas	78	0.693	0.000
16. PD valued	78	0.656	0.000
24. Knowledge base	78	0.753	0.000
29. Values improvement	78	0.755	0.000

Table 52

Spearman rho Correlations for Unity of Purpose Items

Item	*n*	*rho*	*p*
5. Support mission	78	0.727	0.000
12. Clear sense	78	0.815	0.000
19. Understand mission	78	0.868	0.000

Table 53

Spearman rho Correlations for Learning Partnership Items

Item	*n*	*rho*	*p*
6. Expectations	78	0.789	0.000
13. Parents trust	78	0.635	0.000
21. Communications	78	0.734	0.000
32. Responsibility	78	0.738	0.000

Table 54

Spearman rho Correlations between Subscales

Subscales	*n*	*rho*	*p*
Collaborative Leadership	78	0.900	0.000
Teacher Collaboration	78	0.657	0.000
Professional Development	78	0.735	0.000
Collegial Support	78	0.787	0.000
Unity of Purpose	78	0.702	0.000
Learning Partnership	78	0.648	0.000

Research Question Three

The third research question investigated the face, content, and confirmatory construct validity for the *Virtual School Culture Survey-Teacher Form* (VSCS-TF). An Expert Online Education Panel (EOEP), described in chapter three, established face and content validity for the instrument (VSCS-TF) prior to administration of the survey to the Selected Virtual School (SVS). Items 27, 31, and 33 were deleted as a result of the EOEP's recommendations. An additional question (question 9) was modified on the VSCS-TF. The end result was the VSCS-TF totaling 32 survey items. Gruenert (1998) established construct validity on the original *School Culture Survey-Teacher Form* (SCS-TF). Confirmatory construct validity of the VSCS-TF (n = 78) with the teachers in the SVS was tested using the principal component analysis as the extraction method. Varimax rotation was applied to the data. Factor initial loadings followed Field's (2005)

recommendation of retention of factors with an eigenvalue of greater than 1.0. Data were then reduced according to Gruenert's (1998) guidelines to determine which factors and items to retain: "(a) a loading of 0.50 or higher, (b) cross loading items must have a difference of 0.15 or higher, and (c) there must be a minimum of three items per factor" (p. 68).

Principal component analysis based on responses to the VSCS-TF initially yielded seven factors. The scree plot test indicated the retention of seven factors. Eigenvalues for each factor one to seven were above 1.00. Field (2005) suggests an eigenvalue of 1.00 as the accepted standard to determine the appropriate number of factors to retain.

The criterion established for the retention of items and factors used by Gruenert (1998) in his study yielded four factors and the survey was reduced to 21 items in this study. Items 10, 11, 17, 20, and 31 were eliminated because they did not produce a factor loading of at least 0.50. Item 23 was eliminated due to the cross loading difference of highest and next highest loading was 0.14 or lower. Items 6, 13, 26, 27, and 30 were eliminated because they were contained within a factor with two or fewer items with adequate loading. Factor loadings with an absolute value greater than 0.5 were interpreted (Gruenert, 1998). Table 55 represents the seven factor loadings of survey items after 10 iterations for the VSCS-TF.

Table 55

Varimax Rotated Factor Pattern with Seven Factors Rotated for 32 Items (n = 78)

Item	F1	F2	F3	F4	F5	F6	F7
1	.39	.53*	.07	-.22	.04	.28	.05
2	.05	.19	.40	.58*	.13	.33	.00
3	.50*	.17	.40	.10	-.15	-.10	.24
4	.17	.04	.70*	.28	.02	.13	.06
5	-.01	.32	.74*	.21	.07	.10	-.05

Item	F1	F2	F3	F4	F5	F6	F7
6**	.16	.11	.45	.14	.02	.70*	.17
7	.11	.15	.21	.76*	.14	.09	-.02
8	.77*	.12	.08	.12	-.12	.20	.06
9	.19	.61*	.20	.10	-.13	.04	.31
10***	.13	.17	.46	-.04	.29	.35	.38
11***	-.26	.30	.15	.44	.33	.13	.47
12	.02	.68*	.09	.24	.39	-.10	-.06
13**	.15	-.02	-.02	.20	.28	.71*	.01
14	.32	.10	.08	.66*	.34	.12	.00
15	.83*	.12	-.01	.14	-.06	.05	-.13
16	-.04	.55*	.10	.24	.34	.14	.06
17***	.34	.24	.39	.02	.48	.25	.11
18	.61*	.13	.09	.04	.37	-.10	.28
19	.19	.82*	.19	.18	.03	.03	-.02
20***	-.03	.43	.43	.37	.42	-.13	.01
21	.00	.40	.58*	.23	.16	.21	-.11
22	.09	.24	.06	.72*	.05	.04	.30
23#	.51*	.07	.55*	-.14	.15	-.07	.08
24	.13	.51*	.38	.07	.35	.12	.22
25	.79*	.08	.08	-.07	.23	.19	.13
26**	.09	.15	.07	.15	.81*	.22	.03
27**	.16	.19	.10	.32	.66*	.08	.16
28	.76*	-.07	.14	.30	.33	.00	-.11
29	.07	.54*	.18	.37	.22	.07	.16
30**	.44	.17	-.07	.29	.23	.28	.53*
31***	.21	.43	.44	.20	.25	-.17	.42
32	-.01	.29	.30	.50*	.00	.48	-.37
	F1	F2	F3	F4	F5**	F6**	F7**
Total Factor Items	6	7	3	5	2	2	1

*Indicates factor loading of .50 or higher
#Indicates item lost due to cross loading difference of .14 or lower
**Indicates factors or items lost due to two items or less loaded
***Indicates item lost due to lack of factor loading at .50 or higher

Table 56 represents the final list of items and newly named factors meeting the criteria applied to the data. The Revised VSCS-TF contains four factors and 21 survey items.

Table 56

Identification of Dependent Variables Contained in the Revised VSCS-TF (n = 78)

Factor	Range	Items
Collegial Collaboration	6-30	3, 8 , 15, 18, 25, 28
School Improvement	7-35	1, 9, 12, 16, 19, 24, 29
Collegial Communication	3-15	4, 5, 21
Leader Partnership	5-25	2, 7, 14, 22, 32

The factors identified for the population in this case study using the VSCS-TF did not align with the factors identified in the original SCS-TF (Gruenert, 1998). The VSCS-TF yielded four factors while the SCS-TF yielded six. There were little item similarities between factors on each of the independent surveys. The null hypothesis, confirmatory construct validity cannot be established for the VSCS-TF in relation to the established factors of the original SCS-TF, was accepted in the case of research question three. The Revised VSCS-TF with the 21 items is located in Appendix I reduced from 32 original items.

Research Question Four

Research question four investigated the identification of survey items that discriminate between demographic categories defined within the independent variables. Cronk (2010) describes Multivariate Analysis of Variance (MANOVA) as a test that involves more than one dependent variable and is used to reduce Type I error inflation. A one-way MANOVA was calculated examining the effect of gender on the 32 survey items. Table 57 indicates no significant effect was found ($Lambda(32,45) = .523$, $p = .219$). None of the 32 survey items were significantly influenced by gender. The null hypothesis was accepted.

Table 57

One-way MANOVA comparing 32 Survey Items by Gender

Effect		Value	*F*	Hypothesis df	Error df	*p*
Gender	Wilks' Lambda	.523	1.281	32	45	.219

A one-way MANOVA was calculated examining the effect of highest degree held on the 32 survey items. Table 58 indicates no significant effect was found (*Lambda*(32,45) = .741, p = .981). None of the 32 survey items were significantly influenced by highest degree held. The null hypothesis was accepted.

Table 58

One-way MANOVA comparing 32 Survey Items by Highest Degree Held

Effect		Value	*F*	Hypothesis df	Error df	*p*
Highest degree held	Wilks' Lambda	.741	.492	32	45	.981

A one-way MANOVA was calculated examining the effect of teaching grade level on the 32 survey items. Table 59 indicates no significant effect was found (*Lambda*(32,45) = .616, p = .648). None of the 32 survey items were significantly influenced by teaching grade level. The null hypothesis was accepted.

Table 59

One-way MANOVA comparing 32 Survey Items by Teaching Grade Level

Effect		Value	*F*	Hypothesis df	Error df	*p*
Teaching grade level	Wilks' Lambda	.616	.877	32	45	.648

A one-way MANOVA was calculated examining the effect of subject/content area on the 32 survey items. Table 60 indicates no significant effect was found

(*Lambda*(192,244) = .040, p = .729). None of the 32 survey items were significantly influenced by subject/content area. The null hypothesis was accepted.

Table 60

One-way MANOVA comparing 32 Survey Items by Subject/Content Level

Effect		Value	*F*	Hypothesis df	Error df	*p*
Subject/content area	Wilks' Lambda	.040	.919	192	244.875	.729

A one-way MANOVA was calculated examining the effect of years of experience in virtual education on the 32 survey items. Table 61 indicates no significant effect was found (*Lambda*(32,45) = .538, p = .277). None of the 32 survey items were significantly influenced by years of experience in virtual education. The null hypothesis was accepted.

Table 61

One-way MANOVA comparing 32 Survey Items by Years of Experience in Virtual Education

Effect		Value	*F*	Hypothesis df	Error df	*p*
Virtual experience	Wilks' Lambda	.538	1.207	32	45	.277

A one-way MANOVA was calculated examining the effect of total years of experience in education on the 32 survey items. Table 62 indicates no significant effect was found (*Lambda*(160,208) = .075, p = .777). None of the 32 survey items were significantly influenced by total years of experience in education. The null hypothesis was accepted.

Table 62

One-way MANOVA comparing 32 Survey Items by Total Years Experience in Education

Effect		Value	*F*	Hypothesis df	Error df	*p*
Total experience	Wilks' Lambda	.075	.891	160	208.186	.777

The null hypothesis of significant items cannot be identified to discriminate between or among demographic categories for the independent variables was therefore accepted. No survey items were significantly influenced by the independent variables.

Research Question Five

Research question five was to examine significant clusters of survey items that predict group membership. Discriminant analysis was utilized to predict group membership. Since there were no significant findings on the MANOVA test run on the independent variables previously in research question four, follow- up analysis was not appropriate. No further analysis was attempted.

Summary

The summary of findings for the research questions are presented here. They are organized in order by the research questions.

1. Study group demographics were broken down (frequency and percent) by gender, highest degree held, teaching grade level, subject/content area, years of experience in virtual education, and total years of experience in education. Of the 78 survey respondents, 22 (28.2%) were males and 56 (71.8%) were females. Thirty-eight (48.7%) had a bachelors degree, and forty (51.3%) had a masters degree or higher. Two of the masters or higher degree teachers held a specialists degree and were added to the total. One indicated teaching at the 7-8 level and was added to the 7-12 grade level. Therefore, totals at the 7-12 grade level were 23 (29.5%). Fifty-five (70.5%) were teaching at 9-12. Driver's education and orientation had no responses and therefore were excluded from subject/content area data. English had the most responses with 21.8% followed by social studies

with 20.5%. Fifteen years or more had no responses and was not included in the years of experience in virtual education data. Also 10-14 years had only one response and was added to the 5 years or more group. Fifty-nine (75.6%) of the responses were under 5 years highlighting the relatively newness of virtual schools. The largest group for total years of experience in education was 10-14 years with 28.2%. The 25-29 years group had only three respondents and was added to 20-29 years.

2. Descriptive statistics of frequency and percent were calculated for dependent variables (Collaborative Leadership, Teacher Collaboration, Professional Development, Collegial Support, Unity of Purpose, Learning Partnership subscales) by independent variables (gender, highest degree held, teaching grade level, subject/content area, virtual experience, total experience) by survey item (32 items). Table 63 summarizes frequency and percent for all subscales. Unity of Purpose, and Professional Development subscales ranked one and two with nearly 90% agreement on total survey items. Collaborative Leadership, and Learning Partnership ranked third with 76.9% of respondents agreeing or strongly agreeing with survey items contained. Ranking fifth was Collegial Support with 71.7% agreeing or strongly agreeing. Teacher Collaboration, however, ranked last with a showing of only 33.3% of the 78 respondents agreeing or strongly agreeing.

Table 63

Frequencies and Percentages by Subscale Factor (n = 78)

Subscale factor	SD/D	N	A/SA	Rank
Unity of Purpose	1 (1.3%)	7 (9.0%)	70 (89.8%)	1
Professional Development	1 (1.3%)	8 (10.3%)	69 (88.5%)	2
Learning Partnership	3.5 (5.1%)	15 (19.2%)	60 (76.9%)	3
Collaborative Leadership	4 (5.1%)	14 (17.9%)	60 (76.9%)	3
Collegial Support	6 (7.7%)	16 (20.5%)	56 (71.7%)	5
Teacher Collaboration	30 (38.5%)	23 (29.5%)	26 (33.3%)	6

Note. SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

3. Reliability and internal consistency tests were run on the *Virtual School Culture Survey-Teacher Form* (VSCS-TF). Cronbach alpha was calculated at .930. Spearman rho values, assessing internal consistency of the data, were > .4 on all items within the subscales or dependent variables. Rho values between subscales ranged between .6 and .9.
4. Face, content, and confirmatory construct validity on the VSCS-TF was tested. Face and content validity was established on the VSCS-TF with an Expert Online Education Panel. Utilizing confirmatory factor analysis, construct validity was not confirmed with the VSCS-TF and the original *School Culture Survey-Teacher Form* by Gruenert. However, a new instrument was created, the Revised VSCS-TF, with four factors and 21 survey items.
5. A MANOVA on each the independent variables yielded no significant effect on the 32 survey items. None of the 32 survey items were significantly influenced by any of the demographic groups. Therefore, no follow-up discriminant analysis was attempted. Table 64 summaries the MANOVA data.

Table 64

One-way MANOVA comparing 32 Survey Items by Demographic Groups

Effect		Value	*F*	Hypothesis df	Error df	*p*
Gender	Wilks' Lambda	.523	1.281	32	45	.219
Highest degree held	Wilks' Lambda	.741	.492	32	45	.981
Teaching grade level	Wilks' Lambda	.616	.877	32	45	.648
Subject/content area	Wilks' Lambda	.040	.919	192	244.875	.729
Virtual experience	Wilks' Lambda	.538	1.207	32	45	.277
Total experience	Wilks' Lambda	.075	.891	160	208.186	.777

The purpose of this study was to create a parallel instrument to the *School Culture Survey-Teacher Form* (Gruenert, 1998) in order to measure the culture perceptions of a virtual school and to provide for the lack of information on the teacher perspectives of the virtual school culture. Study group demographics were broken down (frequency and percent) by gender, highest degree held, teaching grade level, subject/content area, years of experience in virtual education, and total years of experience in education. Descriptive statistics of frequency and percent were calculated for dependent variables (Collaborative Leadership, Teacher Collaboration, Professional Development, Collegial Support, Unity of Purpose, Learning Partnership subscales) by independent variables (gender, highest degree held, teaching grade level, subject/content area, virtual experience, total experience) by survey item (32 items).

Reliability and internal consistency tests were run on the *Virtual School Culture Survey-Teacher Form* (VSCS-TF) and found the VSCS-TF instrument to be very reliable. Face, content, and confirmatory construct validity on the VSCS-TF were tested. Face and

content validity were established. Confirmatory construct validity using confirmatory factor analysis produced a new Revised VSCS-TF instrument with 21 items and four factors. A MANOVA on each the independent variables yielded no significant effect on the 32 survey items. Therefore, no follow-up discriminant analysis was attempted.

CHAPTER FIVE

DISCUSSION OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Overview of the Study

The importance of the underlying culture of virtual schools could significantly affect student achievement and school improvement efforts. The purpose of this study was to create a parallel instrument to the *School Culture Survey-Teacher Form* (Gruenert, 1998), located in Appendix A, in order to measure the culture perceptions of a virtual school and to provide for the lack of information on the perspectives of the virtual school culture. Surveys were sent to all Selected Virtual School teachers creating a case study population size of approximately 225 teachers. Survey data were collected through the *Virtual School Culture Survey-Teacher Form* (VSCS-TF), located in Appendix B. Data were analyzed statistically to address the purposes of the study.

Learnings from a Virtual School Culture Survey

This research produced learnings from the study of virtual school culture. They are outlined below.

1. A collaborative culture is an imperative to build and nurture for a virtual school leader developing a successful school. Much like a lawn needs building up and nurturing, i.e. reseeding, aerating, fertilizing, and watering, by the homeowner to be a healthy lawn; likewise the virtual school leader developing a successful school needs to build and nurture a collaborative, healthy culture.
2. An instrument was adapted to measure the virtual school culture. The new instrument, the Revised Virtual School Culture Survey-Teacher Form (Appendix I), contains four factors and 21 items. It was found to be reliable and valid. Other researchers and educators could use it to measure culture in their virtual schools.

3. Four new factors were created: (a) Collegial Collaboration, (b) School Improvement, (c) Collegial Communication, and (d) Leader Partnership. Collegial Collaboration signals an attention to the isolation in virtual schools. There is a need for teachers to collaborate as they do in a bricks and mortar school. School Improvement points to the commitment of virtual teachers to understand the school's mission and improve the school. Collegial Communication involves teachers trusting each other, supporting the school mission, and communicating with parents. Finally, Leader Partnership allows teachers and students to have key roles in the virtual school.
4. Leadership and collaboration seemed to be blurred in the thinking of the virtual school teachers. Survey items tied to leadership and collaboration were not clearly delineated by the respondents in this case study. This may have occurred because of the isolation teachers' experience. Virtual school leaders are their main source of information and collaboration because virtual school teachers generally work independently from their homes.
5. The leader is the key to collaboration in the virtual school. Collaboration makes sense in leadership of schools (Evans & Teddlie, 1995; Johnson & Asera, 1999; Riordan & da Costa, 1998; Thomas, 1997).
6. Virtual school teachers are similar in demographics with brick and mortar teachers. For example, gender and highest degree held are similar to brick and mortar teachers.
7. Parent collaboration with virtual school teachers is as good as or better than brick and mortar teachers. Possibly this occurs due to the fact that virtual school

teachers have required periodic contacts with parents and students even though they are virtual.

8. Virtual school teachers rated the opportunity to observe other teachers low, yet they have the technology to accomplish this. Training may improve the opportunity to observe.

Discussion of Findings

Research questions sought to create a valid and reliable instrument for measuring culture in the virtual school. In addition, perceptions were elicited with regard to virtual school culture. The findings created a new instrument to measure culture in the virtual school and illuminated the virtual school culture. A complete summary of findings is located in chapter four for review.

Demographics

Study group demographics are discussed by gender, highest degree held, teaching grade level, subject/content area, years of experience in virtual education, and total years of experience in education.

Gender. Two and half times as many female as males responded to the survey. As observed with the virtual school, this is typical of brick and mortar schools as well.

Highest degree held. An even split was found with approximately 50% each in teachers holding a bachelors degree and teachers holding a masters or higher degree. Again, this is typical of brick and mortar schools and virtual schools seem to have the same characteristic.

Grade level. The highest percent was 70.5% at the 9-12 grade level. Given my tacit knowledge of virtual schools, this is pretty typical. Many of them are at the high school level.

Subject/content area. Drivers' education and orientation were excluded from the data because of no responses. This was a little puzzling because drivers' education is a popular class with students and orientation is generally a required class in virtual schools. However, the Selected Virtual School teaching staff is comparatively small. Therefore, they may teach several subject/content areas which might account for some subjects/content areas receiving no responses or they may have been simply overlooked.

English and social studies were close with the highest number of teachers. I expected to see math and science to have similar high numbers of teachers as English and social studies with core classes being the focus of any type of school.

Virtual education experience. Fifteen years or more years of virtual education experience had no responses and was not included. Also the 10-14 years category had only one response and was added to the 5 years or more group. The category under 5 years of experience had 75.6% of the responses. This highlights the relatively newness of virtual schools. The younger generation of teachers embraces the opportunity to try something new and work with technology in this very new and different world.

Total years of experience in education. The largest group was the 10-14 years of total years of experience in education with 28.2%. Under 5 years, 5-9 years, and 10-14 comprised almost 70% of the total years in experience in education. Again, implying a fairly young group of educators employed in virtual schools.

Descriptive Statistics

Descriptive statistics of frequency and percent were calculated for dependent variables (Collaborative Leadership, Teacher Collaboration, Professional Development, Collegial Support, Unity of Purpose, Learning Partnership subscales) by independent variables (gender, highest degree held, teaching grade level, subject/content area, virtual experience, total experience) by survey item (32 items). The heart of this data is illustrated in Table 62 located in chapter four. Unity of Purpose, and Professional Development subscales ranked one and two with nearly 90% agreement on total survey items. Collaborative Leadership, and Learning Partnership ranked third with 76.9% of respondents agreeing or strongly agreeing with survey items contained. Ranking fifth was Collegial Support with 71.7% agreeing or strongly agreeing. Teacher Collaboration, however, ranked last with a showing of only 33.3% of the 78 respondents agreeing or strongly agreeing.

With my tacit knowledge, I would have expected Collaborative Leadership to rank higher, if not the highest ranking factor. Teachers in virtual schools are basically isolated generally, and look to the leadership for guidance and collaborative efforts. Yet, Collaborative Leadership ranked third at 77%. It could have been limited because of the case study, but the fact remains it is lower. Leadership is critical to any organization. Shared leadership and decision making is a primary component of a school's collaborative culture (Lummis, 2001). Collaboration makes sense in leadership of schools (Evans & Teddlie, 1995; Johnson & Asera, 1999; Riordan & da Costa, 1998; Thomas, 1997). Cultural connections and conventional relationships are the foundational pillars of collaborative cultures (Sergiovanni, 2004). Leadership and culture are so closely

connected that “leadership and culture may be two sides of the same coin” (Schein, 2004). Successful schools seem to have strong, functional cultures aligned with a vision of excellent schooling. Recognizing, acknowledging and understanding culture is essential to leading the organization (Lynch, 2006). Likewise should be the case with virtual schools. In addition, there seemed to be some confusion regarding Teacher Collaboration and Collaborative Leadership as participants responded to the survey items which may have accounted for lower agreement rate.

Interestingly, Learning Partnership had a 77% agreement, yet almost all of the respondents agreed that parents trusted them. Surprisingly, Professional Development and Unity of Purpose were nearly 90%. Teachers felt Professional Development was strongly embedded into the Selected Virtual School. As is the case with Unity of Purpose, teachers felt that they knew and understood the mission of their school.

Collegial Support ranked fifth at 71%. Isolation may have been the reason for lower agreement. It is clear that Teacher Collaboration, with only 33% in agreement and ranking last, was extremely low in agreement among the teachers signaling a call for attention. Collaboration is and has been successful in brick and mortar schools, and such should be the case in the virtual school if attention is given. Collaboration has ranked in the top six factors that help teachers teach well since 1956 in traditional schools. From 1996 forward, however, teachers ranked it as number one (NEA, 2003). Similarly to Collegial Support, this indicates the isolation felt by virtual teachers in the virtual world of teaching of not being able to connect or communicate with their colleagues on a regular basis. Akhavan (2005) advises creating and sustaining collaborative cultures takes work, effort, and focus.

Instrument

Discussion on the VSCS-TF instrument follows highlighting reliability, item total analysis, face and content validity, and confirmatory construct validity.

Reliability. Cronbach's alpha was applied to determine the reliability and internal consistency of this instrument. Based on recommendations by Field (2005), the standard was set at > 0.80. Cronk (2010) notes a reliability coefficient close to 1.00 indicates good internal consistency and a coefficient close to 0.00 indicates poor consistency. The Cronbach's alpha reliability coefficient for the VSCS-TF was found to be 0.931 (n=78).

Item-total analysis. Cronk (2010) indicates another way to test reliability is to assess internal consistency of the data by conducting an item-total analysis. The Spearman *rho* correlation was used to conduct this analysis because the data were nominal. According to Cronk, item-total correlations should be positive and greater than 0.3 to indicate internal consistency. On all items within the subscales none of the Spearman *rho* correlation values fell below 0.4. All subscales within the survey were also found to be internally consistent with *rho* values in the 0.6 to 0.9 range. Therefore, the VSCS-TF was found to be a reliable instrument.

Face and content validity. VSCS-TF face, and content validity was tested and was established on the VSCS-TF with an Expert Online Education Panel (EOEP) prior to administration of the survey to the Selected Virtual School (SVS). Items 27, 31, and 33 were deleted as a result of the EOEP's recommendations. An additional question (question 9) was modified on the VSCS-TF. The end result was the VSCS-TF totaling 32 survey items.

Confirmatory construct validity. Using the principal component analysis as the extraction method, confirmatory construct validity of the VSCS-TF (n = 78) with the teachers in the SVS was tested. Varimax rotation was applied to the data. Factor initial loadings followed Field's (2005) recommendation of retention of factors with an eigenvalue of greater than 1.0. Data were then reduced according to Gruenert's (1998) guidelines to determine which factors and items to retain: "(a) a loading of 0.50 or higher, (b) cross loading items must have a difference of 0.15 or higher, and (c) there must be a minimum of three items per factor" (p. 68).

Principal component analysis based on responses to the VSCS-TF initially yielded seven factors. The criterion established for the retention of items and factors recommended by Gruenert (1998) yielded four factors and the survey was reduced to 21 items. The final list of items and newly named factors meeting the criteria applied to the data are: (a) Collegial Collaboration, (b) School Improvement, (c) Collegial Communication, and (d) Leader Partnership.

Utilizing confirmatory factor analysis, construct validity was not confirmed with the VSCS-TF and the original *School Culture Survey-Teacher Form* by Gruenert. However, a new instrument was created, the Revised VSCS-TF, with four factors and 21 survey items.

Comparatives

The following narrative describes tests utilized to identify survey items that discriminant between demographic categories and examine for significant clusters of survey items that predict group membership. The MANOVA and discriminant analysis are the featured tests.

MANOVA. Cronk (2010) describes Multivariate Analysis of Variance (MANOVA) as a test that involves more than one dependent variable and is used to reduce Type I error inflation. A one-way MANOVA was calculated examining the effect of each of the independent variables (gender, highest degree held, teacher grade level, subject/content area, years experience in virtual education, and total years experience) on the 32 survey items. No significant effect was found with any of the independent variables. None of the 32 survey items were significantly influenced by the independent variables. Therefore, significant items could not be identified to discriminate between or among demographic categories for the independent variables. No follow-up discriminant analysis was attempted. No significant difference was found between and among the demographic groups in this study.

Discriminant analysis. The original plan was to examine for significant clusters of survey items that predict group membership. Discriminant analysis was to be utilized to predict group membership. Since there were no significant findings on the MANOVA tests run on the independent variables previously, follow- up analysis was not appropriate. No further analysis was attempted.

Implications

Three implications resulted from the findings and discussion of virtual school culture.

Instrument

The new Revised Virtual School Culture Survey may be used to measure culture in virtual schools with similar teacher populations. By utilizing the instrument, leaders

could better understand their school culture; thereby providing the opportunity for improving student achievement and school improvement.

Collaboration

Clearly, teachers feel collaboration is a key element in improvement of teaching. Obviously, this in turn would have a positive effect on student achievement. Something all schools should be striving to attain. It only makes sense that leaders should cultivate the notion of collaboration to improve student achievement whether it is a virtual school or brick and mortar.

Leadership

Leaders must understand culture and all its relationships to lead their school toward excellence. Anything less would be reducing students' opportunity to learn. Understanding and shaping the culture is key to a school's success in student learning and school improvement (Peterson, 2002).

Conclusions

This study established a revised instrument that is reliable and valid to be used with other similar populations of teachers. Study results can be utilized to inform educational leaders and researchers seeking to build a collaborative culture with their teachers in a virtual environment. Leaders understanding culture in their virtual schools would profit by influencing the shaping of culture in their school. Schein's (2004) definition of organizational culture gives leaders a good starting point to investigate culture in their virtual school. Schools will not become what students deserve until cultural patterns and ways are shaped to support learning (Deal & Peterson, 1999).

Recommendations for Leaders in Virtual Schools

1. Building and nurturing a collaborative culture is an imperative for a virtual school leader.
2. The 21 items and four factors retained after data reduction for the Revised Virtual School Culture Survey may be used by other researchers and virtual school leaders in like collaborative virtual environments to query culture perceptions of teachers.
3. Leaders in virtual schools should look for ways to allow teachers to collaborate more in their virtual environments to encourage Collaborative Leadership and Collegial Collaboration.
4. Leadership in virtual schools should note that they are the key to collaboration in virtual schools.
5. Virtual leaders should devise ways for increasing communications with parents and students to improve leader partnerships.
6. Leadership should recognize the need for continual, and timely training for virtual school teachers.
7. Virtual school leaders should bring teachers together in a face to face meeting at least 2 to 3 times a year for a collaboration and training institute.
8. Virtual school teachers need to be trained on how to collaborate virtually.

Recommendations for Further Study

1. A larger sample population to investigate would be very beneficial and strengthen the findings of the study.

2. Researchers using the *School Culture Survey-Teacher Form* (Gruenert, 1998) should analyze construct validity of the instrument with regards to their population sample.
3. This study could be replicated within several different selected virtual schools to establish the teachers' perceptions of culture.

Summary

The importance of the underlying culture of virtual schools could significantly affect student achievement and school improvement efforts. Building and nurturing a collaborative culture is an imperative for a virtual school leader developing a successful school. The leader is key to this collaboration in the virtual school. Collaboration makes sense in leadership of schools (Evans & Teddlie, 1995; Johnson & Asera, 1999; Riordan & da Costa, 1998; Thomas, 1997).

Clearly, teachers feel collaboration is a key element in improvement of teaching. Obviously, this in turn would have a positive effect on student achievement. Something all schools should be striving to attain. Leaders must understand culture and all its relationships to lead their school toward excellence. Anything less would be reducing students' opportunity to learn. Understanding and shaping the culture is key to a school's success in student learning and school improvement (Peterson, 2002). Schools will not become what students deserve until cultural patterns and ways are shaped to support learning (Deal & Peterson, 1999).

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Appendix A

School Culture Survey

Directions: Circle the response that best describes the conditions at your school for each item.

1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree

To what degree do these statements describe the conditions at your school?

	SD	D	N	A	SA
1. Teachers utilize professional networks to obtain information and resources for classroom instruction.	1	2	3	4	5
2. Leaders value teachers' ideas.	1	2	3	4	5
3. Teachers have opportunities for dialogue and planning across grades and subjects.	1	2	3	4	5
4. Teachers trust each other.	1	2	3	4	5
5. Teachers support the mission of the school.	1	2	3	4	5
6. Teachers and parents have common expectations for student performance.	1	2	3	4	5
7. Leaders in this school trust the professional judgments of teachers.	1	2	3	4	5
8. Teachers spend considerable time planning together.	1	2	3	4	5
9. Teachers regularly seek ideas from seminars, colleagues, and conferences.	1	2	3	4	5
10. Teachers are willing to help out whenever there is a problem.	1	2	3	4	5
11. Leaders take time to praise teachers that perform well.	1	2	3	4	5
12. The school mission provides a clear sense of direction for teachers.	1	2	3	4	5
13. Parents trust teachers' professional judgments.	1	2	3	4	5
14. Teachers are involved in the decision-making process.	1	2	3	4	5
15. Teachers take time to observe each other teaching.	1	2	3	4	5
16. Professional development is valued by the faculty.	1	2	3	4	5
17. Teachers' ideas are valued by other teachers.	1	2	3	4	5
18. Leaders in our school facilitate teachers working together.	1	2	3	4	5
19. Teachers understand the mission of the school.	1	2	3	4	5
20. Teachers are kept informed on current issues in the school.	1	2	3	4	5
21. Teachers and parents communicate frequently about student performance.	1	2	3	4	5
22. My involvement in policy or decision making is taken seriously.	1	2	3	4	5
23. Teachers are generally aware of what other teachers are teaching.	1	2	3	4	5
24. Teachers maintain a current knowledge base about the learning process.	1	2	3	4	5
25. Teachers work cooperatively in groups.	1	2	3	4	5
26. Teachers are rewarded for experimenting with new ideas and techniques.	1	2	3	4	5
27. The school mission statement reflects the values of the community.	1	2	3	4	5
28. Leaders support risk-taking and innovation in teaching.	1	2	3	4	5
29. Teachers work together to develop and evaluate programs and projects.	1	2	3	4	5
30. The faculty values school improvement.	1	2	3	4	5
31. Teaching performance reflects the mission of the school.	1	2	3	4	5
32. Administrators protect instruction and planning time.	1	2	3	4	5
33. Teaching practice disagreements are voiced openly and discussed.	1	2	3	4	5
34. Teachers are encouraged to share ideas.	1	2	3	4	5
35. Students generally accept responsibility for their schooling, for example they engage mentally in class and complete homework assignments.	1	2	3	4	5

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Appendix B

Demographics Survey

Please select the item that most closely matches your response.

1. Gender

○ Female ○ Male

2. Highest degree held

○ BS/BA ○ MS/MA/MEd ○ EdS ○ EdD/PhD

3. Teaching grade level

○ 7-8 ○ 7-12 ○ 9-12

4. Subject/content area

○ Drivers Ed ○ Electives ○ English ○ Foreign Language ○ Health

○ Math ○ Orientation ○ Science ○ Social Studies

5. Years of experience in virtual education

○ under 5 years ○ 5-9 years ○ 10-14 years ○ 15 years or more

6. Total years of experience in education

○ under 5 years ○ 5-9 years ○ 10-14 years ○ 15-19 years

○ 20-24 years ○ 25-29 years ○ 30 years or more

Virtual School Culture Survey

To what degree do these statements describe the conditions at your school?

Rate each statement on the following scale:

1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree

1. Teachers utilize professional networks to obtain information and resources for classroom instruction.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

2. Leaders value teachers' ideas.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

3. Teachers have opportunities for dialogue and planning across grades and subjects.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

4. Teachers trust each other.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

5. Teachers support the mission of the school.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

6. Teachers and parents have common expectations for student performance.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

7. Leaders in this school trust the professional judgments of teachers.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

8. Teachers spend considerable time planning together.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

9. Teachers regularly seek ideas from seminars, colleagues, and/or conferences.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

10. Teachers are willing to help out whenever there is a problem.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

11. Leaders take time to praise teachers that perform well.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

12. The school mission provides a clear sense of direction for teachers.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

13. Parents trust teachers' professional judgments.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

14. Teachers are involved in the decision-making process.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

15. Teachers take time to observe each other teaching.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

16. Professional development is valued by the faculty.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

17. Teachers' ideas are valued by other teachers.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

18. Leaders in our school facilitate teachers working together.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

19. Teachers understand the mission of the school.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

20. Teachers are kept informed on current issues in the school.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

21. Teachers and parents communicate frequently about student performance.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

22. My involvement in policy or decision making is taken seriously.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

23. Teachers are generally aware of what other teachers are teaching.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

24. Teachers maintain a current knowledge base about the learning process.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

25. Teachers work cooperatively in groups.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

26. Teachers are rewarded for experimenting with new ideas and techniques.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

27. Leaders support risk-taking and innovation in teaching.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

28. Teachers work together to develop and evaluate programs and projects.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

29. The faculty values school improvement.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

30. Administrators protect instruction and planning time.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

31. Teachers are encouraged to share ideas.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

32. Students generally accept responsibility for their schooling, for example they engage mentally in class and complete homework assignments.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

Thank you very much for taking time to participate in my research study. Your valuable input is greatly appreciated! Please contact me if you have any questions or would like a copy of the final results of this study.

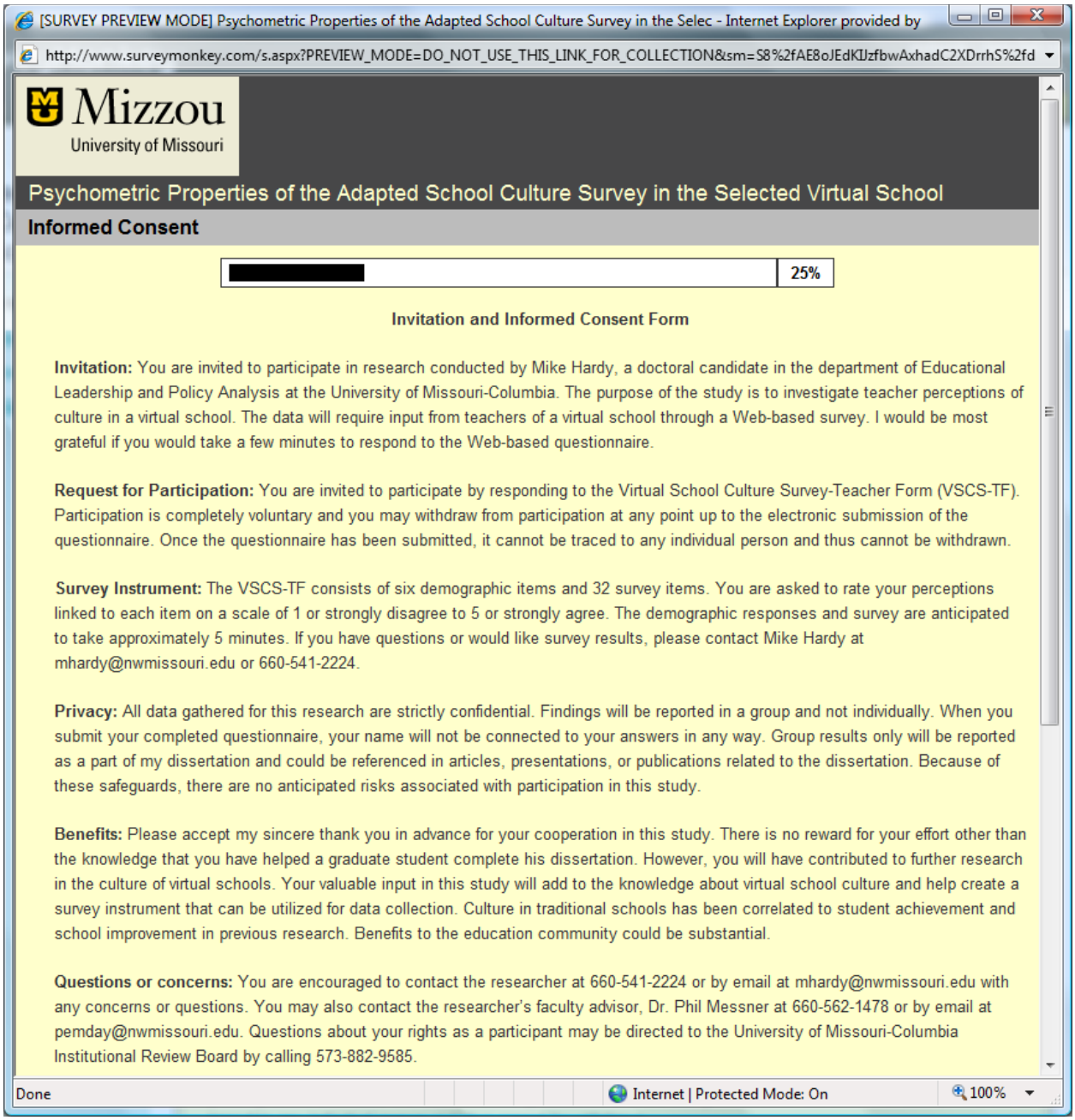
Mike R. Hardy
Email: mhardy@nwmissouri.edu
Phone: 660.541.2224

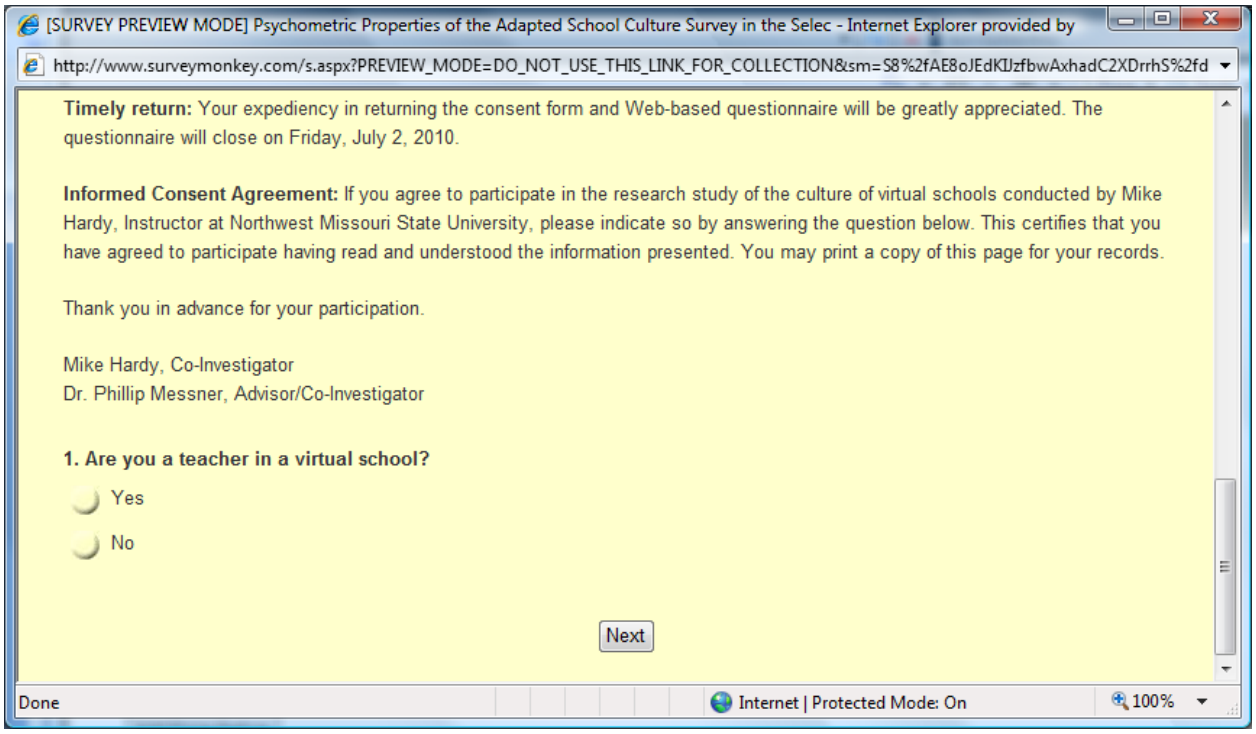
Prev Done

Note: Revised in electronic form with author permission.

Appendix C

Screen Shots of Web-based Virtual School Culture Survey

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Timely return: Your expediency in returning the consent form and Web-based questionnaire will be greatly appreciated. The questionnaire will close on Friday, July 2, 2010.
Informed Consent Agreement: If you agree to participate in the research study of the culture of virtual schools conducted by Mike Hardy, Instructor at Northwest Missouri State University, please indicate so by answering the question below. This certifies that you have agreed to participate having read and understood the information presented. You may print a copy of this page for your records.
Thank you in advance for your participation.
Mike Hardy, Co-Investigator
Dr. Phillip Messner, Advisor/Co-Investigator
1. Are you a teacher in a virtual school?
Yes
No
Next
Done
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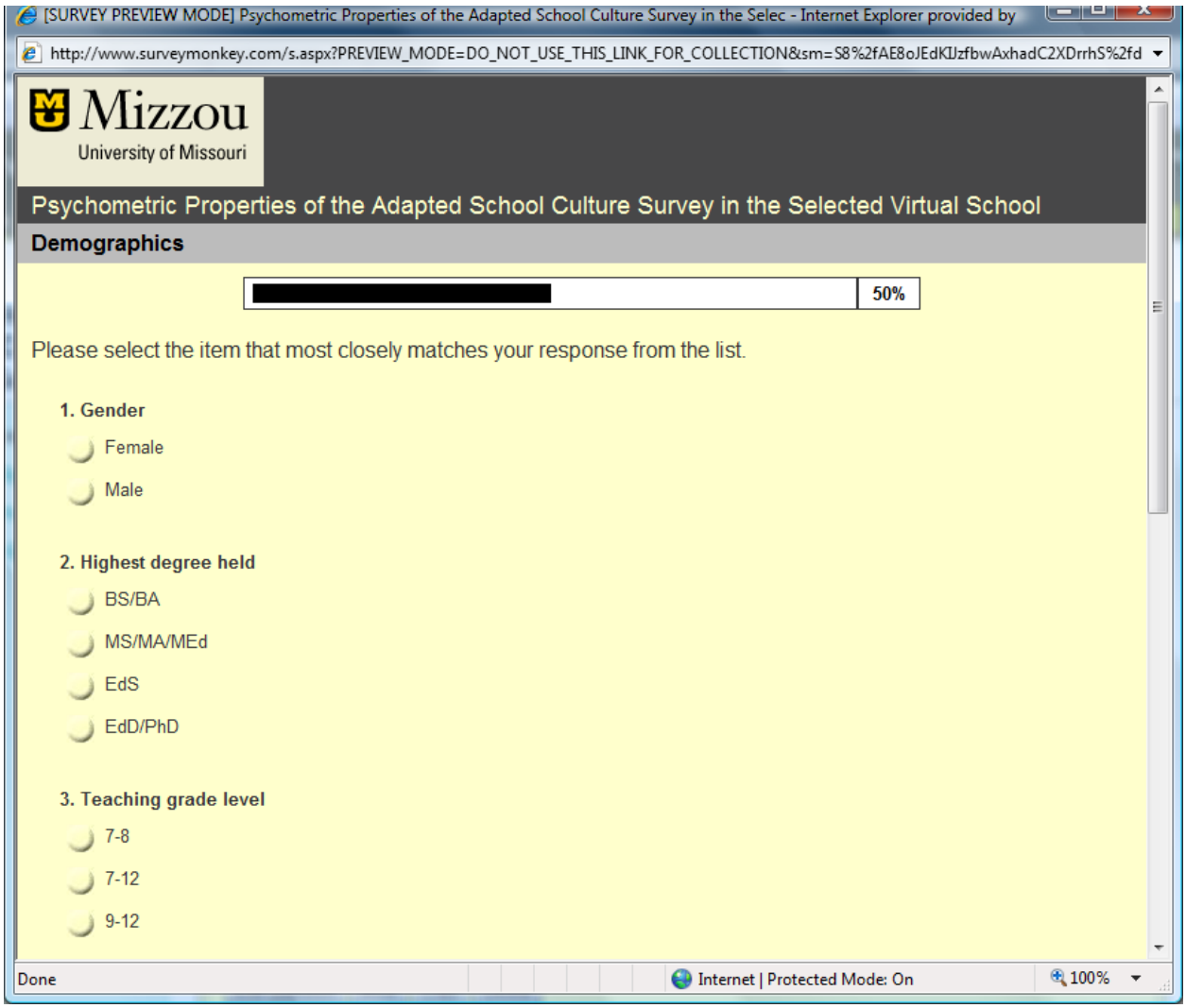
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Mizzou
University of Missouri
Psychometric Properties of the Adapted School Culture Survey in the Selected Virtual School
Demographics
50%
Please select the item that most closely matches your response from the list.
1. Gender
Female
Male
2. Highest degree held
BS/BA
MS/MA/MEd
EdS
EdD/PhD
3. Teaching grade level
7-8
7-12
9-12
Done
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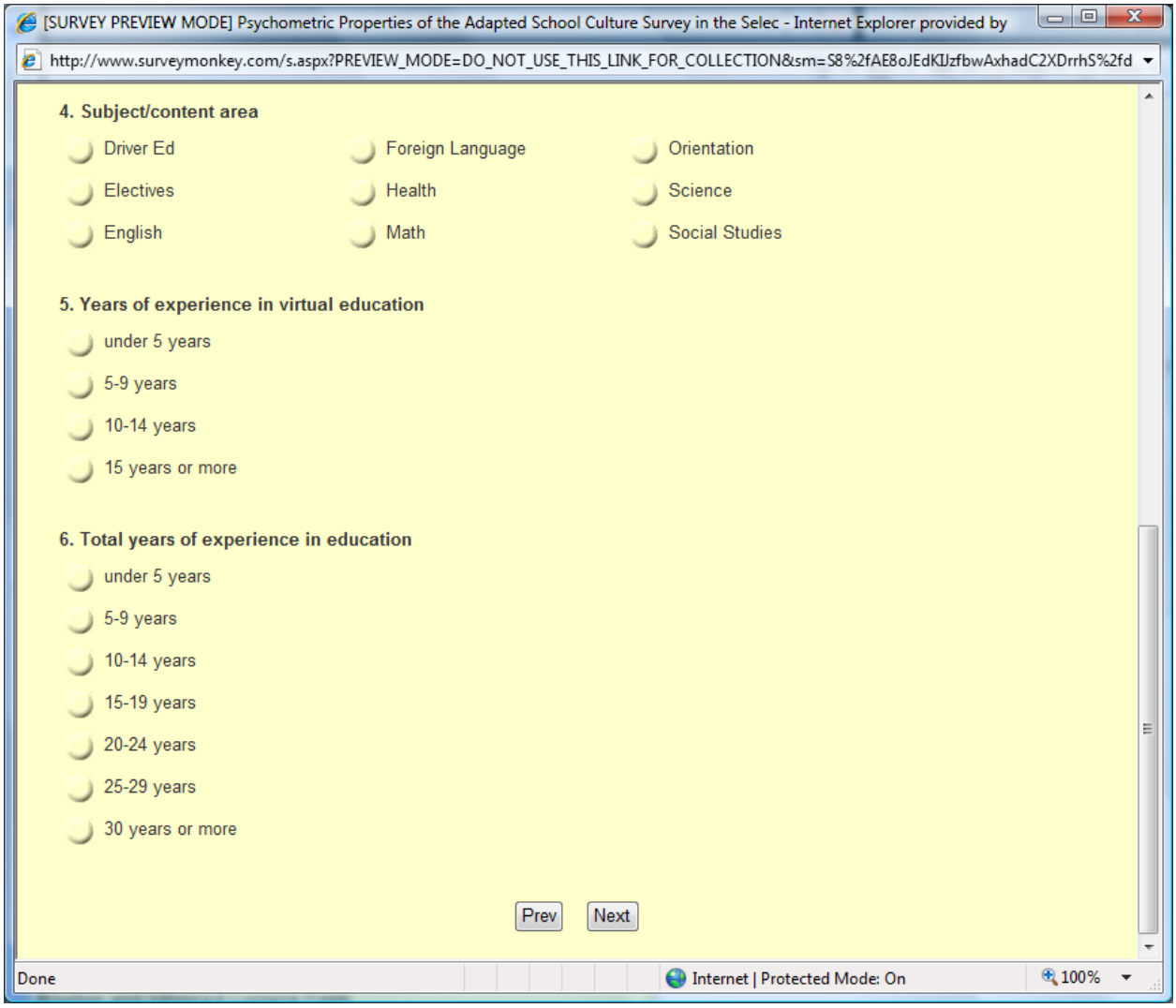
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4. Subject/content area
Driver Ed
Foreign Language
Orientation
Electives
Health
Science
English
Math
Social Studies
5. Years of experience in virtual education
under 5 years
5-9 years
10-14 years
15 years or more
6. Total years of experience in education
under 5 years
5-9 years
10-14 years
15-19 years
20-24 years
25-29 years
30 years or more
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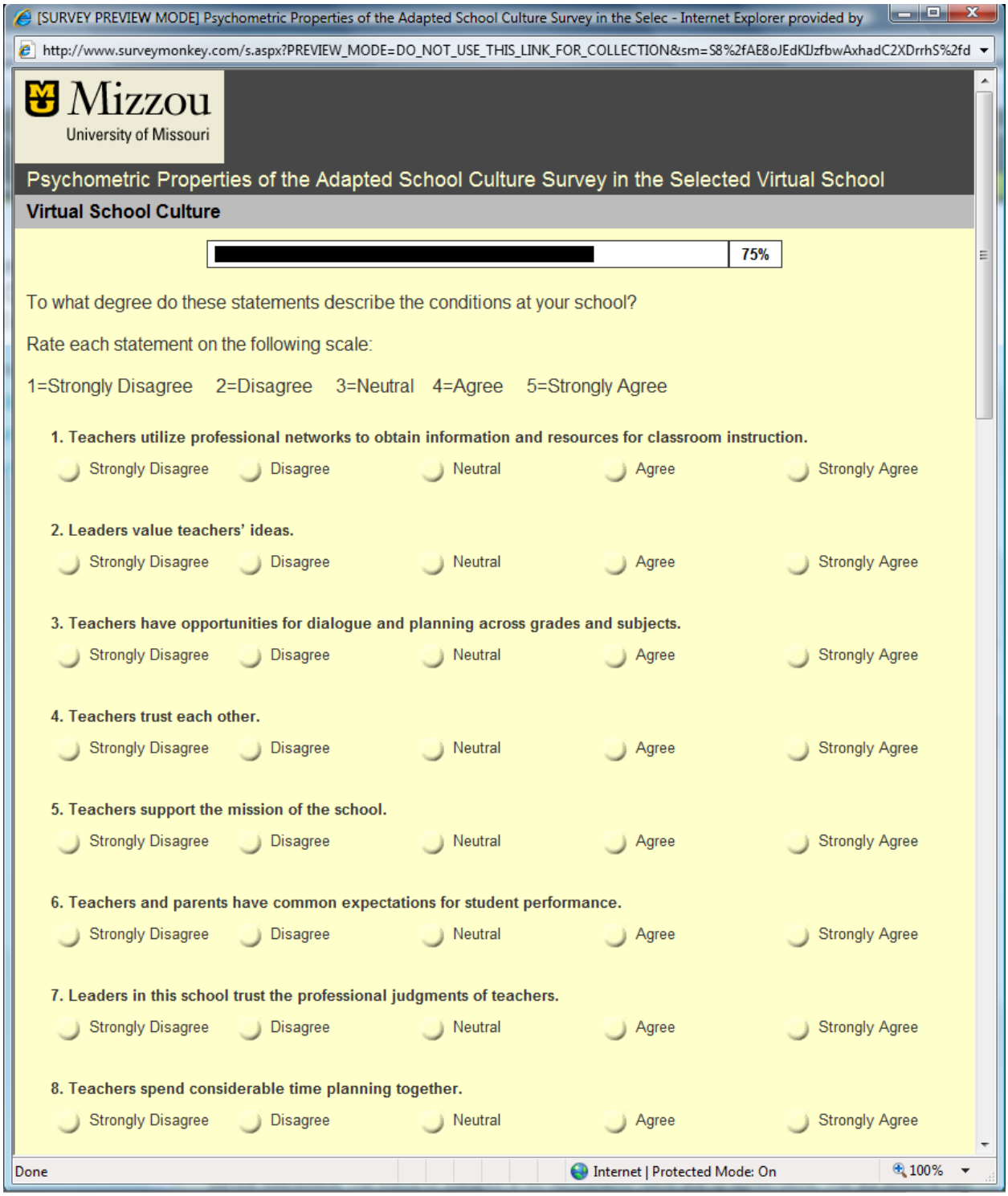
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Mizzou
University of Missouri
Psychometric Properties of the Adapted School Culture Survey in the Selected Virtual School
Virtual School Culture
75%
To what degree do these statements describe the conditions at your school?
Rate each statement on the following scale:
1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree
1. Teachers utilize professional networks to obtain information and resources for classroom instruction.
Strongly Disagree Disagree Neutral Agree Strongly Agree
2. Leaders value teachers' ideas.
Strongly Disagree Disagree Neutral Agree Strongly Agree
3. Teachers have opportunities for dialogue and planning across grades and subjects.
Strongly Disagree Disagree Neutral Agree Strongly Agree
4. Teachers trust each other.
Strongly Disagree Disagree Neutral Agree Strongly Agree
5. Teachers support the mission of the school.
Strongly Disagree Disagree Neutral Agree Strongly Agree
6. Teachers and parents have common expectations for student performance.
Strongly Disagree Disagree Neutral Agree Strongly Agree
7. Leaders in this school trust the professional judgments of teachers.
Strongly Disagree Disagree Neutral Agree Strongly Agree
8. Teachers spend considerable time planning together.
Strongly Disagree Disagree Neutral Agree Strongly Agree
Done
Internet | Protected Mode: On
100%

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9. Teachers regularly seek ideas from seminars, colleagues, and/or conferences.
Strongly Disagree Disagree Neutral Agree Strongly Agree
10. Teachers are willing to help out whenever there is a problem.
Strongly Disagree Disagree Neutral Agree Strongly Agree
11. Leaders take time to praise teachers that perform well.
Strongly Disagree Disagree Neutral Agree Strongly Agree
12. The school mission provides a clear sense of direction for teachers.
Strongly Disagree Disagree Neutral Agree Strongly Agree
13. Parents trust teachers' professional judgments.
Strongly Disagree Disagree Neutral Agree Strongly Agree
14. Teachers are involved in the decision-making process.
Strongly Disagree Disagree Neutral Agree Strongly Agree
15. Teachers take time to observe each other teaching.
Strongly Disagree Disagree Neutral Agree Strongly Agree
16. Professional development is valued by the faculty.
Strongly Disagree Disagree Neutral Agree Strongly Agree
17. Teachers' ideas are valued by other teachers.
Strongly Disagree Disagree Neutral Agree Strongly Agree
18. Leaders in our school facilitate teachers working together.
Strongly Disagree Disagree Neutral Agree Strongly Agree
19. Teachers understand the mission of the school.
Strongly Disagree Disagree Neutral Agree Strongly Agree
20. Teachers are kept informed on current issues in the school.
Strongly Disagree Disagree Neutral Agree Strongly Agree
Done
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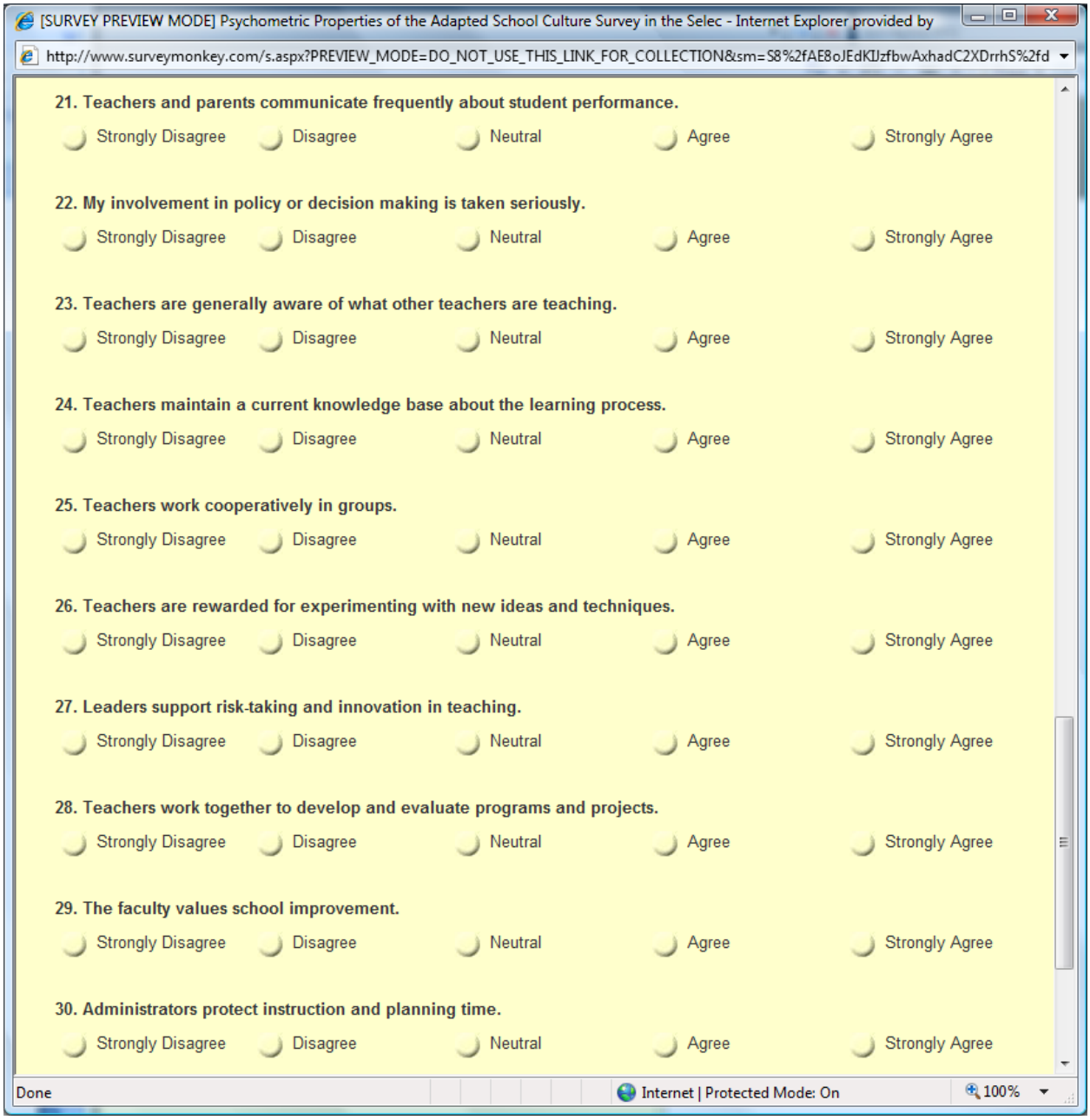
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21. Teachers and parents communicate frequently about student performance.
Strongly Disagree Disagree Neutral Agree Strongly Agree
22. My involvement in policy or decision making is taken seriously.
Strongly Disagree Disagree Neutral Agree Strongly Agree
23. Teachers are generally aware of what other teachers are teaching.
Strongly Disagree Disagree Neutral Agree Strongly Agree
24. Teachers maintain a current knowledge base about the learning process.
Strongly Disagree Disagree Neutral Agree Strongly Agree
25. Teachers work cooperatively in groups.
Strongly Disagree Disagree Neutral Agree Strongly Agree
26. Teachers are rewarded for experimenting with new ideas and techniques.
Strongly Disagree Disagree Neutral Agree Strongly Agree
27. Leaders support risk-taking and innovation in teaching.
Strongly Disagree Disagree Neutral Agree Strongly Agree
28. Teachers work together to develop and evaluate programs and projects.
Strongly Disagree Disagree Neutral Agree Strongly Agree
29. The faculty values school improvement.
Strongly Disagree Disagree Neutral Agree Strongly Agree
30. Administrators protect instruction and planning time.
Strongly Disagree Disagree Neutral Agree Strongly Agree
Done
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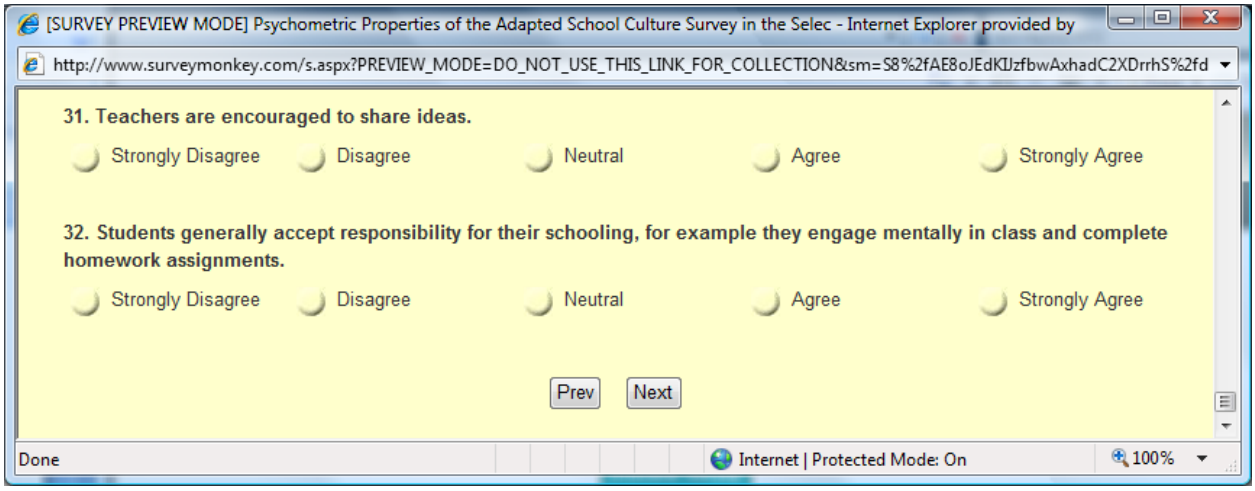
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31. Teachers are encouraged to share ideas.
Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree
32. Students generally accept responsibility for their schooling, for example they engage mentally in class and complete homework assignments.
Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree
Prev
Next
Done
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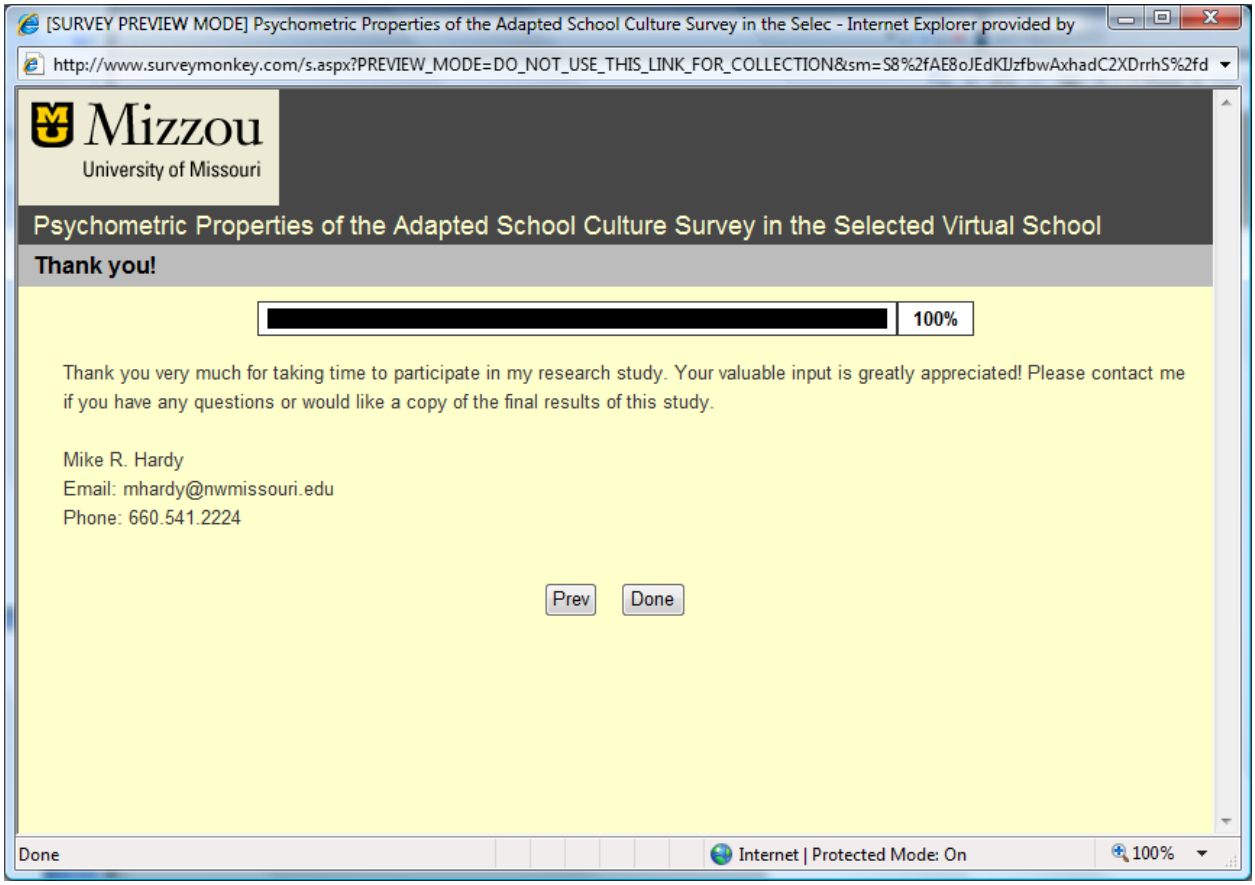
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http://www.surveymonkey.com/s.aspx?PREVIEW_MODE=DO_NOT_USE_THIS_LINK_FOR_COLLECTION&sm=S8%2fAE8oJEdKIJzfbwAxhadC2XDrrhS%2fd
Mizzou
University of Missouri
Psychometric Properties of the Adapted School Culture Survey in the Selected Virtual School
Thank you!
100%
Thank you very much for taking time to participate in my research study. Your valuable input is greatly appreciated! Please contact me if you have any questions or would like a copy of the final results of this study.
Mike R. Hardy
Email: mhardy@nwmissouri.edu
Phone: 660.541.2224
Prev
Done
Done
Internet | Protected Mode: On
100%

Appendix D

From:	Steve Gruenert [Steve.Gruenert@indstate.edu]	Sent:	Mon 6/28/2010 1:23 PM
To:	Hardy,Michael		
Cc:			
Subject:	RE: SCS-TF		
Attachments:			

You have my permission to reprint the Culture Survey. Please let me know about your findings.

-----Original Message-----
From: Hardy,Michael [mailto:MHARDY@nwmissouri.edu]
Sent: Monday, June 28, 2010 1:02 PM
To: Steve Gruenert
Subject: RE: SCS-TF

Dr. Gruenert,

I am writing to request permission to publish a copy of your SCS-TF in my dissertation. My librarian who I work with on APA has told me I need your permission to reprint it.

I'll look forward to your response.

Best,
Mike Hardy
EdD Candidate
University of Missouri

-----Original Message-----
From: Steve Gruenert [mailto:Steve.Gruenert@indstate.edu]
Sent: Friday, April 02, 2010 8:28 AM
To: Hardy,Michael
Subject: RE: SCS-TF

Virtual schools....?

cool.

You may use it so long as you are willing to provide me with a summary of your findings.

Thanks.

Steve Gruenert
Director Correction Education Program
Indiana State University
812-237-8398
"Culture always wins."

_____

From: Hardy,Michael [MHARDY@nwmissouri.edu]
Sent: Friday, April 02, 2010 12:41 AM
To: Steve Gruenert
Subject: SCS-TF

Dr. Gruenert,

My name is Mike Hardy and I'm a doctoral student in the MU/NW cohort. I'm writing to request permission to use your School Culture Survey in my dissertation work on the culture in virtual schools.

Thank you and I look forward to your response.

Best regards,
Mike

Mike R. Hardy, Ed.S.
Interim Teacher Education Student Services Director
Northwest Missouri State University
BH 209
Maryville, MO 64468
660.562.1052

Appendix E

Cover Letter (email)

Dear Virtual School Teacher:

My name is Mike Hardy, and I am a doctoral candidate at the University of Missouri-Columbia majoring in Educational Leadership. I am writing to ask for your help in a study of virtual school culture being conducted for a research project. This study is part of an effort to learn what culture exists in virtual schools and create an instrument to measure virtual school culture.

IRB approval number: 1170378

It is my understanding that you are a teacher at the selected virtual school. I am contacting virtual school teachers to ask opinions about perceptions of culture in the virtual school.

Results from the survey will be used to complete my dissertation and to help the education community better understand a virtual school culture. By understanding the culture of virtual schools, the opportunity for improving student achievement and school improvement may be enhanced.

Your responses are completely anonymous and will be released only as aggregated data in which no individual's answers can be identified. When you submit your completed questionnaire, your name will not be connected to your answers in any way. The survey is anonymous and voluntary. Still, your input is very important and your opinions are very much appreciated. Please take a few minutes to complete the virtual school culture survey.

Once you have read and agree to the informed consent, you will be allowed to access the survey. If you have questions or comments about this study, I would be glad to talk with you. You can email me at mhardy@nwmissouri.edu or my phone number is 660-541-2224.

To access a detailed invitation/informed consent, and the virtual school culture survey, please click the link below and log into the secure site. The demographic responses and survey are anticipated to take approximately 5 minutes. The survey will close on Friday, July 2, 2010. Once again, your input is very important. Thanks in advance for your cooperation.

https://www.surveymonkey.com/s/S6BHDNB

Your password is: summer

Thank you very much for assisting in this important research.

Mike Hardy, Principal Investigator
Email: mhardy@nwmissouri.edu
Phone: 660-582-2856

Appendix F

Invitation and Informed Consent Form

Invitation: You are invited to participate in research conducted by Mike Hardy, a doctoral candidate in the department of Educational Leadership and Policy Analysis at the University of Missouri-Columbia. The purpose of the study is to investigate teacher perceptions of culture in a virtual school. The data will require input from teachers of a virtual school through a Web-based survey. I would be most grateful if you would take a few minutes to respond to the Web-based questionnaire.

Request for Participation: You are invited to participate by responding to the Virtual School Culture Survey-Teacher Form (VSCS-TF). Participation is completely voluntary and you may withdraw from participation at any point up to the electronic submission of the questionnaire. Once the questionnaire has been submitted, it cannot be traced to any individual person and thus cannot be withdrawn.

Survey Instrument: The VSCS-TF consists of six demographic items and 32 survey items. You will be asked to rate your perceptions linked to each item on a scale of 1 or strongly disagree to 5 or strongly agree. The demographic responses and survey are anticipated to take approximately 5 minutes. If you have questions or would like survey results, please contact Mike Hardy at mhardy@nwmissouri.edu or 660-541-2224.

Privacy: All data gathered for this research are strictly confidential. Findings will be reported as a group and not individually. When you submit your completed questionnaire, your name will not be connected to your answers in any way. Group results only will be reported as a part of my dissertation and could be referenced in articles, presentations, or publications related to the dissertation. Because of these safeguards, there are no anticipated risks associated with participation in this study.

Benefits: Please accept my sincere thank you in advance for your cooperation in this study. There is no reward for your effort other than the knowledge that you have helped a graduate student complete his dissertation. However, you will have contributed to further research in the culture of virtual schools. Your valuable input in this study will add to the knowledge about virtual school culture and help create a survey instrument that can be utilized for data collection. Culture in traditional schools has been correlated to student achievement and school improvement in previous research. Benefits to the education community could be substantial.

Questions or concerns: You are encouraged to contact the researcher at 660-541-2224 or by email at mhardy@nwmissouri.edu with any concerns or questions. You may also contact the researcher's faculty advisor, Dr. Phil Messner at 660-562-1478 or by email at pemday@nwmissouri.edu. Questions about your rights as a participant may be directed to

the University of Missouri-Columbia Institutional Review Board by calling 573-882-9585.

Timely return: Your expediency in returning the consent form and Web-based questionnaire will be greatly appreciated. The questionnaire will close on Friday, July 2, 2010.

Informed Consent Agreement: If you agree to participate in the research study of the culture of virtual schools conducted by Mike Hardy, Instructor at Northwest Missouri State University, please indicate so by answering the question below. This certifies that you have agreed to participate having read and understood the information presented. You may print a copy of this page for your records.

Thank you in advance for your participation.

Mike Hardy, Co-Investigator
Dr. Phillip Messner, Advisor/Co-Investigator

Are you a teacher in a virtual school?

○ Yes

○ No

Next

Appendix G

Reminder/Thank You (email)

Dear Virtual School Teacher:

My name is Mike Hardy, and I am a doctoral candidate at the University of Missouri-Columbia majoring in Educational Leadership. I am writing to ask for your help in a study of virtual school culture being conducted for a research project. This study is part of an effort to learn what culture exists in virtual schools and create an instrument to measure virtual school culture.

IRB approval number: 1170378

On Monday this week, a Web-based questionnaire seeking your opinions about the perceptions of culture in the virtual school was emailed to you. If you have already completed and submitted the questionnaire, please accept my sincere thanks. If not, I encourage you to take a few minutes to respond. I would be especially grateful for your help. It is only by asking experts like you to share their opinions and experiences that we can understand and have the opportunity to improve student achievement and further school improvement.

I am providing the questionnaire link again in this email in case you did not receive the previous email or if it was misplaced. Once you have read and agree to the informed consent, you will be allowed to access the survey.

Please click the link below and log into the secure site. The demographic responses and survey are anticipated to take approximately 5 minutes. The survey will close on Friday, July 2, 2010. Once again, your input is very important. Thanks in advance for your cooperation.

https://www.surveymonkey.com/s/S6BHDNB

Your password is: summer

Thank you very much for assisting in this important research.

Mike Hardy, Principal Investigator
Email: mhardy@nwmissouri.edu
Phone: 660-582-2856

Appendix H

Final Contact (email)

Dear Virtual School Teacher:

My name is Mike Hardy, and I am a doctoral candidate at the University of Missouri-Columbia majoring in Educational Leadership. I am writing to ask for your help in a study of virtual school culture being conducted for a research project. This study is part of an effort to learn what culture exists in virtual schools and create an instrument to measure virtual school culture.

IRB approval number: 1170378

During this past week, I've been collecting data on an important research study on the culture of virtual schools. The study is drawing to a close and this is the last contact that will be made with teachers in the Selected Virtual School. The survey will close Friday, July 2, 2010 at the end of the day.

I am sending a final contact to encourage any teacher who has not participated to do so. Hearing from every teacher in the sample population will help assure that the survey results are as accurate as possible. While the survey is voluntary, your input is very important and your opinions are very much appreciated.

Finally, I appreciate your willingness to consider the request as I conclude this effort to collect data on the virtual school culture which will provide the opportunity to improve student achievement and further school improvement. By clicking the link below and logging into the secure site, you can access the virtual school survey. The demographic responses and survey are anticipated to take approximately 5 minutes.

https://www.surveymonkey.com/s/S6BHDNB

Your password is: summer

Thank you very much for assisting in this important research. I am deeply grateful for your participation in this study.

Mike Hardy, Principal Investigator
Email: mhardy@nwmissouri.edu
Phone: 660-582-2856

Appendix I

Revised Virtual School Culture Survey

To what degree do these statements describe the conditions at your school?

Rate each statement on the following scale:

1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree

1. Teachers utilize professional networks to obtain information and resources for classroom instruction.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

2. Leaders value teachers' ideas.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

3. Teachers have opportunities for dialogue and planning across grades and subjects.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

4. Teachers trust each other.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

5. Teachers support the mission of the school.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

6. Leaders in this school trust the professional judgments of teachers.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

7. Teachers spend considerable time planning together.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

8. Teachers regularly seek ideas from seminars, colleagues, and/or conferences.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

9. The school mission provides a clear sense of direction for teachers.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

10. Teachers are involved in the decision-making process.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

11. Teachers take time to observe each other teaching.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

12. Professional development is valued by the faculty.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

13. Leaders in our school facilitate teachers working together.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

14. Teachers understand the mission of the school.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

15. Teachers and parents communicate frequently about student performance.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

16. My involvement in policy or decision making is taken seriously.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

17. Teachers maintain a current knowledge base about the learning process.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

18. Teachers work cooperatively in groups.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

19. Teachers work together to develop and evaluate programs and projects.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

20. The faculty values school improvement.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

21. Students generally accept responsibility for their schooling, for example they engage mentally in class and complete homework assignments.

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

VITA

Mike was born in southwest Iowa. After graduating from Worth County R-I High School in 1972 he received a Bachelor of Science degree in Secondary Education (1977) from Northwest Missouri State University. He received two advanced degrees from Northwest Missouri State University, a Masters in Educational Administration (1987) and a Specialist in Educational Leadership (1998). In 2010, he received his Ed.D. in Educational Leadership and Policy Analysis from the University of Missouri – Columbia.

Mike has worked in public education as a teacher, a principal, and a superintendent for 25 years in Missouri and Iowa schools. He served as project manager of the Missouri Virtual Instruction Program in its first two years of development at Northwest Missouri State University. Currently in his fourth year at Northwest Missouri State University, he works in the Educational Leadership Department and is the TESS Office Director. He is married to the former Carolyn Ann Wilkinson.