

AN EXAMINATION OF THE LEADERSHIP TRAITS PERCEIVED NECESSARY FOR THE IDEAL VIRTUAL SCHOOL LEADER

By

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A Dissertation

Submitted in Partial Fulfillment

Of the Requirements for

The Degree of Doctor of Education

In School Leadership

Columbus State University

Columbus, GA

April 2018

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Dedication

I dedicate this dissertation to my husband, Jason Bennett. As my best friend and my biggest supporter, Jason encouraged me to pursue a doctorate degree. He had more faith in me than I had in myself. Through the many years of marriage, we have experienced joys, excitement, challenges and celebrations. These are all very similar to the what has been experienced during the past few years while working on a dissertation. Jason has been by my side through the joy of being admitted into the doctoral program, the excitement of passing the Prospectus, the challenges of SPSS, and now the celebration of a goal accomplished.

I truly appreciate all that you do for our family and for me.

I love you!

Acknowledgements

I begin my acknowledgements with a heartfelt thank you to my committee: Dr. Michael Richardson, Dr. Wendi Jenkins, and Dr. Rick Rogers. Your support, advise, and guidance throughout this journey was never ending. Whether a brief text, a Sunday afternoon phone chat, or an email with a detailed attachment, you were always eager to help keep me on the right path. Your patience with this student who always wants to “get it right” was very much appreciated.

Without the eight virtual schools’ willingness to participate, this study would not have been possible. I want to thank the superintendents for the permission to work in their district as well as the teachers and administrators for their time completing surveys and their insight throughout the interview process. The input was vital to the outcome of the study.

Thank you to the Gamma Girls for cheering me on through the journey as loyal sisters. Thank you to my teacher friends and colleagues who offered insight related to virtual schools and educational leadership. Thanks to Ms. Lori Broadway for being the emergency editor and technology guru.

As educators, we never know whose lives we touch or if we even make a difference. As an educator, I know how much I appreciate Ms. Sandy Soulis. There is no way I could have written a dissertation without her. In 7th grade, she taught me the skill of putting thoughts into words and expanding with detail to make the story more enjoyable. I am so thankful for Ms. Soulis, her talent of teaching English, and her desire to pass her love to her students.

Most importantly, I thank my family. They have all been so supportive, sacrificing, and steadfast as I completed my dream of earning a doctorate. Bailey and Betsy are the best daughters a mom could as for, and they continued to remind me that I could accomplish the task. My husband, Jason, has been the encourager through the entire process. My mother-in-law, Rosemary (RoRo) accepted the role as the “other mother” and never failed to assist our family when mom was a little overloaded. To my parents, thank you for teaching me to believe in myself, to keep the faith, and to practice persistence. I did it!

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Abstract Page

With the growing number of virtual school throughout the nation, school programs continued to be in need of virtual school administrators. However, few studies had focused on the leadership traits required for administrators leading in schools of the digital age. The purpose of the study was to explore the leadership traits deemed important for leading in a virtual school program. The researcher conducted a mixed-methods, explanatory design study using quantitative data from a rank-order survey and qualitative data from personal interview with virtual school teachers and administrators. The interviews were transcribed and coded to further define the traits identified by the surveys. Data analysis was conducted, and findings were compared to identify the top traits perceived as important as well as determine any significance. Additional analysis was completed for correlation to Kouzes-Posner's list of admired leadership characteristics. The results indicated similarities of the traits identified and desired by the virtual school teacher and administrator. The findings from the study did align with Kouzes-Posner's top traits related to leadership. The data in the current study provided school leaders and educational stakeholders information relevant about traits needed to lead the next generation of learners. The study was intended to assist professional programs designed to train future administrators and add to the body of literature related to educational leadership.

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CHAPTER I

LEADERSHIP TRAITS IDENTIFIED FOR VIRTUAL SCHOOL LEADERS

Introduction

“Anytime, Anywhere, Any Pace” seemed to be the education motto as virtual schools expanded to a new level of popularity (Bengfort, 2017). Virtual schooling was a form of educating students using the internet and online curriculum. The concept of online learning was growing because of technology changes, globalization, availability of the internet, personalized learning priorities, and concerns about traditional schools (Cavanaugh, 2004). Virtual schools, in the form of fully online or blended instruction, had the potential to dramatically expand the educational opportunities of American students, largely overcoming the geographic and demographic restrictions, with the promise to improve the quality of education (Lips, 2010).

The United States displayed the strongest growth in virtual schooling as documented by the International Association for K-12 Online Learning, known as iNACOL (2008) and grew to serve a wider range of purposes, including early engagement in higher education, increased student choice of courses, credit recovery, and flexibility in student schedules (Davis, 2001; Roblyer, 2008). An estimate found that more than one million K-12 students participated in online courses in 2007-2008 (Piccianno & Seaman, 2009), amounting to approximately two percent of the K-12 student population. In the executive summary, titled “Keeping the Pace of Online Education,” Watson, Murrin, Vashaw, Gemin, and Rapp (2014) indicated that online

education enrollment grew significantly in just one decade and the number continued to increase each year. The Evergreen Education Group (2014) reported a total of 45 states and the District of Columbia had a state virtual school through an online initiative, full-time online schools, or both. Three states, Florida, Alabama, and Michigan, mandated the creation of a hybrid or online learning program in every district in their state (Cowan, 2011). Researchers estimated by the 2017 school year online enrollment would increase to approximately six million K-12 students (Blazer, 2009; Hassell & Terrell, 2004; Patrick, 2011).

Virtual learning environments resembled the technological world that students lived in and soon would work (Florida Virtual Schools, 2013). Virtual schools came in many forms and served different student needs. Virtual schools were funded a variety of ways. State and local school districts were governing virtual schools while other virtual schools functioned under a charter or through a for-profit partnership (Vanderkam, 2013). Instruction in virtual schools could range from fully online where students did not need to come into a classroom, partially online with access to an actual teacher at an instructional site when needed or blended with some online curriculum combined with instruction from a classroom teacher. The support for virtual schooling increased rather quickly, and the nature of what was offered became more comprehensive (Cavanaugh, 2004).

As virtual schools continued to grow, Rice (2006) emphasized the importance of modifying instructional strategies to incorporate more learner-centered practices. Educational programs needed committed leaders who understood the new types of instruction and were prepared to improve educational outcomes for students (Hammond, LaPointe, Meyerson, Orr, 2007). School leaders were key to sustainable education

reform and could be the change agents to move schools from what worked in the past to what was needed in the future (Mercer, 2016).

Researchers documented the importance of school leaders to have viable practices such as having vision with a plan and strategy of direction, managing the learning program, understanding and developing relationships, and lastly, creating conducive working conditions (Leithwood, Harris, & Hopkins, 2008; Szczesiul & Huizenga, 2014). While studying virtual school leadership, Goodvin and Gibson (2008) found that virtual school administrators needed more preparation for the technology-rich environments they were embracing and needed to possess some level of skills to accomplish tasks through technology. The Stanford Educational Leadership Institute (2007) surveyed school principals and determined topics needed for leadership preparation. The significant practices were defined as leading personnel, learning for staff and students, developing vision, managing operations, and engaging in communication. According to iNACOL (2004), the key aspects of virtual leadership included: effective communication, being mission driven, establishing relationships, being a risk-taker, and advocating for program needs. Additional leadership research by authors Wagner (2012) and Fullan (2002) indicate that newer skills, such as adjusting to change and understanding adaptability, were critical in leading in a new workforce in the digital age.

Authors Kouzes and Posner (2006) described leadership as gazing onto the horizon, communicating what is seen and taking note on what is around the corner. Virtual schools were well over the horizon and needed leadership to promote educating students through many forms, formats, and formulas. Education leaders were to serve as facilitators for the implementation of strategies and the process for change (Coryn, 2014).

School administrators in charge of virtual schools were to possess competencies to lead unique educational programs as virtual schools evolved throughout the nation.

Statement of the Problem

With the growth and expansion of virtual schools, different leadership qualities may be needed for school administrators leading online educational programs. In an interview with Dr. Trey Holladay of Athens Renaissance Academy (personal communication, May 7, 2017), he indicated that there was a definite difference in leading a brick-and-mortar school compared to a virtual school; not in management as one may think but with innovation and creativity to find solutions in a new educational environment. Creating plans of action for online learning that helped close the achievement gap and foster school improvement while promoting education reform were outlined in books such as *Virtual Schools* by Zane L. Berge and Tom Clark (2005) and *Virtual Team Success* by Darleen DeRosa (2010). Author Catherine Cavanagh (2004) explained in her book, *Development and Management of Virtual Schools*, that the implementation of virtual learning at elementary and secondary levels had unique aspects that warranted more focus to adequately prepare those assuming the leadership roles within a new educational environment.

Determining the appropriate management skills and leadership traits for virtual school leaders was important for establishing educational success for these individuals and the programs they would lead. According to Fullan (2002), principals were needed as leaders in a culture of change and should be ready to reform education in a complex, rapidly changing society. Research completed by Davis and Robyler (2005) indicated that there was a new school personnel who understood the unique benefits of the digital

age and were prepared to meet its needs and requirements. School leaders were one of the most essential elements effecting change in a school and implementing strategies to help the process to improve the school community (Coryn, Schroter, & McCown, 2014).

There was limited literature that defined the ideal fundamental skills and character traits that educators may need when pursuing a leadership role in a K-12 virtual school. After conducting a study on applied behavioral leadership theory in online learning programs, Chen and Wang (2010) recommended more research be conducted on the topic of virtual school leadership. Minimal research had been completed to address leadership theory as it relates to online education in K-12 programs (Kolb, Prussia, & Francoeur, 2009; Livingston, 2010).

With numerous leadership programs available to school administrators, understanding what specific characteristics were needed to lead in a virtual school could be overwhelming. Universities and professional development programs were preparing curriculum to best prepare leadership candidates, and these programs were implementing measurement tools for candidates to identify strengths or weaknesses prior to getting in the field. By identifying the ideal skills and character traits for virtual school management, school leaders could be better prepared as they advance into the phenomenon of virtual school administration.

Research Questions

Leading a school was a challenging and complex task for school administrators. According to Fullan (2001), school leaders could be more productive by developing core aspects of leadership and recognizing the responsibility to lead. With virtual schools being a newer concept and style of education, questions arose on leading in a unique

format. School leaders among brick-and-mortar facilities demonstrated skills needed to lead in a face-to-face environment, but virtual school leaders needed additional skills to adapt to a school program with extensive technology integrations.

The current study was conducted to explore the leadership characteristics perceived as ideal to lead a publicly funded, virtual school. For the purpose of the study, the virtual schools included both fully online instruction and blended learning format and were located in either Georgia or Alabama. During the 2017-2018 school year, the administrators and teachers from the eight virtual schools ranked ideal leadership traits using the Kouzes-Posner Characteristics of an Admired Leader Checklist (1987) and participated in individual interviews to further define the ideal traits identified. The specific aim for the study was to determine what leadership traits were identified for the ideal virtual school leader and further compare how the virtual school leaders were described in a self-assessment and by their staff. To address these aims, the following research questions were asked:

(Q1) What specific leadership characteristics were determined as ideal for virtual school leaders by virtual school teachers?

(Q2) What specific leadership characteristics were determined as ideal for virtual school leaders by virtual school administrators?

(Q3) How closely do the identified leadership characteristics align from the perception of the virtual school teacher compared to the perspective of the virtual school administrator?

(Q4) How do the top five leadership traits identified for virtual school leaders compare to Kouzes-Posner's top five leadership traits deemed essential over the past 30 years?

By posing the four questions, the researcher could provide insight for educational programs to better prepare leadership candidates for future goals. Professional training offered for school leaders who lead virtual school programs could be adapted to encompass the development and fostering of appropriate leadership competencies and traits. Additionally, the results of the study contributed to the body of knowledge assisting school districts in identifying individuals who possess specific characteristics vital to leadership in virtual learning programs.

Conceptual Framework

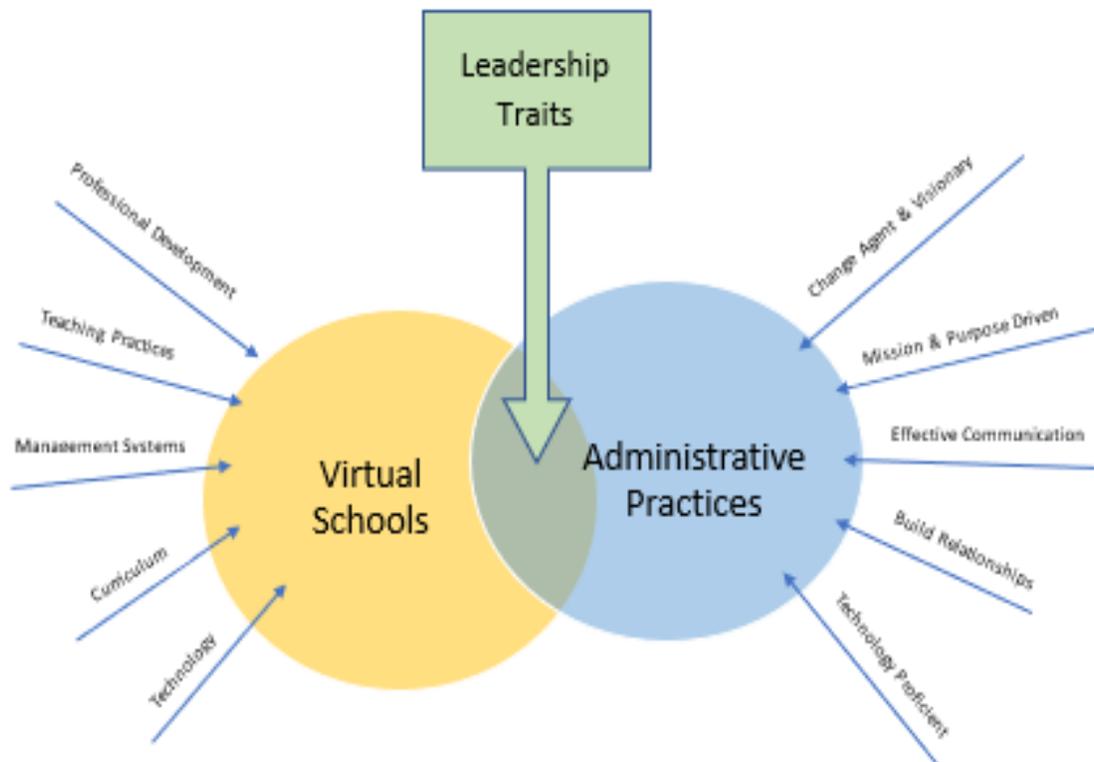
According to Coryn, Schroter, and McCown, (2014), one of the most critical lessons that emerged from research on effective schooling was the importance of the school leader. The conceptual framework illustrated the connection between virtual school programs and the leadership practices needed by the administrator. The merging of two phenomenon, virtual schools and administrative practices, invited exploration to determine the leadership traits deemed important with school leaders in a new format of education. The ideal traits measured in the study indicated specifically the admired leadership characteristics using the Kouzer and Posner checklist.

Administrators, as school leaders, facilitated the creation and implementation of strategies and processes for change, as well as building and improving the school communities. School leaders were responsible for many things among the school program to include: curriculum through instruction, regulations and policy, technology

implementation, working with stakeholders and staff, and financial planning. The research study surveyed school leaders and staff in eight publicly funded, virtual schools to determine the ideal leadership characteristics for an individual who is responsible for operations of the unique online educational program.

The leadership characteristics checklist designed by Kouzes and Posner (1987) was used to measure twenty leadership traits (ambitious, broad-minded, caring, competent, cooperative, courageous, dependable, determined, fair-minded, forward-looking, honest, imaginative, independent, inspiring, intelligent, loyal, mature, self-controlled, straightforward, and supportive). The results of the survey were compared to data collected during the individual interviews with the teachers and school leaders. The data analysis was to better understand and define the determination of ideal leadership characteristics of virtual school administrators. The following illustrated the merging of the virtual school leader responsibilities with the common leadership practices to best determine the ideal leadership characteristics or traits for administrator success within a virtual school program. (Figure 1)

Figure 1: Conceptual Framework of Competencies for Virtual School Leaders



Importance of the Study

Growth of virtual schools continued as stakeholders looked for choices for educating students. Many states established virtual schools as an educational program for students of all ages and to meet a variety of needs. As online education continued to grow and develop, the need for school leadership increased. The fundamental skills and professional development training needs of a school leader for any type of online learning environment differed from those required in the leadership positions of a traditional brick-and-mortar or face-to-face education institution. While technology was being emerged into the learning process, it became important to explore how school leaders needed to reshape the world of education.

With limited research on the topic of virtual school leadership, the subject deserved further investigation. The researcher expected to add to the body of knowledge in the area of educational leadership by providing insight into the ideal leadership characteristics deemed important to oversee a virtual school program. Preparing school leaders who would thrive in the virtual context of education required on-going communication, professional collaboration, educational studies, and review of the literature.

Literature related to school leadership had common themes as to what was expected or needed to lead in schools. Authors and research institutes provided lists of administrative practices that should be fostered to better prepare individuals for their role as a school leader. Although these skills were important and were evident in many school leaders, a need existed for further investigation of what ideal characteristics were desirable to lead in the new age of technology through virtual school programs.

One major step in providing quality virtual education was to have adequate training for school leaders. Identifying the ideal characteristics needed to lead in the digital age was key for the success of the administrators and strengthened the virtual school programs. The data in the current study provided school leaders and educational stakeholders information relevant about traits needed to lead the next generation of learners. With an increasing number of virtual schools, qualified administrators were needed who were prepared to lead in the 21st century of education.

Procedures

A comparative study using eight virtual schools in two southern states was conducted to explore the perceived ideal leadership characteristics of a virtual school leader. All eight virtual school leaders were responsible for day-to-day operations of a publicly funded, virtual school program supported by different school districts in the two southern states. Permission was received from the virtual school leaders or the district superintendents to allow employees to participate by completing surveys and volunteering for interviews. The processes assisted in evaluating ideal leadership characteristics exhibited by virtual school administrators.

The researcher used convenience sampling to include sites and participants who were accessible based on the researcher's professional network of colleagues and geographical location. Convenience sampling, a form of purposeful sampling, allowed easy access to participants and was strategic in gaining access to the eight virtual schools (Denzin & Lincoln, 2005; Lincoln & Guba, 1985; Patton, 2015). The participants were all educators who had rich-knowledge of the topic under study and had experience in a virtual school environment.

Using a mixed methods model, the comparative study was conducted in an explanatory sequential design to gather both quantitative and qualitative data (Creswell, 2008, Fetter & Freshwater, 2015, Teddie & Tashakkori, 2003). The sequence of the different modes gave an optimal combination to best answer the research questions (Couper, 2011). Conclusions and recommendations were drawn through interpretation of the data. The purpose of the qualitative data was to explain the findings of the quantitative phase.

The quantitative method included a rank order leadership survey modified by the researcher from Kouzes and Posner's design. The Checklist of Admired Leaders Characteristics consisted of 20 competencies or traits deemed important to leadership. Each participant was asked to rank the characteristic from most important to least important using a scale of 1 to 20. The survey was completed by both the administrator of each virtual school (self-assessment) and the staff (management-assessment). The qualitative method included semi-structured interviews (Gordan, 1992, Rubin & Rubin, 2012) with the virtual school administrator and with one teacher from each virtual school who volunteered to participate on the completed survey. The digitally recorded interviews were held face-to-face, by phone or by Skype depending on the participants' schedule and availability. Although a predetermined list of interview questions was asked, a conversational approach encouraged two-way communication and further probing from the interviewer to the participants. Following all interviews, the transcripts were coded using the twenty competencies defined by the surveys. The process of provisional coding allowed the researcher to have a predetermined list of codes to use with the transcripts (Saldana, 2009). The following categories or themes were identified: ambitious, broad-minded, caring, competent, cooperative, courageous, dependable, determined, fair-minded, forward-looking, honest, imaginative, independent, inspiring, intelligent, loyal, mature, self-controlled, straightforward, and supportive.

The quantitative phase had priority in the study with qualitative data being used to support, further explain, or help better understand the quantitative results (Creswell, 2008; Teddlie & Tashakkori, 2009). Combining both quantitative and qualitative

approaches made it possible to compare the two types of data to determine if there were significant leadership traits for the ideal virtual school administrator.

Once the administrator and teacher survey data were consolidated, the researcher was able to determine the specific leadership characteristics from the perspective of the individual administrator and teacher groups. Further statistical analysis was conducted using a comparative approach to assess if different traits were determined important according to school administrators versus the teachers. The themes from the interview transcripts, as identified from the list of traits defined by Kouzes-Posner, further supported the significance found through the quantitative analysis.

Limitations

While facilitating and completing the study, several limitations were identified that impacted the outcome of the study. Although approximately 45 states offered some form of virtual learning, the study was limited to only eight districts in two southern states. The eight virtual schools were publicly funded, district run programs, thus the single section study cannot be applied to charter or for-profit virtual schools. Time constraints did not allow a more robust and detailed research model to expand to additional states and virtual schools.

The group of school leaders and their teachers were not a random sample. The assignment of school principals or program coordinators within the eight districts were actively employed at the time of the study. The teachers were also employed by the district prior to the beginning of the study and were selected at the discretion of the superintendent and school board. The number of individuals participating in the study was based on employment need of each district's virtual school.

Although permission was granted from all eight district superintendents for their virtual school staff to complete the survey and participate in the interviews, there was concern with how many responses were completed and submitted. The average reply rate to data collection from an electronic survey was only 33%, which could skew the outcome and effect the defined characteristics (Watt, Simpson, McKillop, & Nunn, 2002). Based on the number of teachers willing to be interviewed, the qualitative analysis would be inadequate and would impact the mixed methods design. While completing the surveys and responding to interview questions, there was the assumption that all responders would be open, honest, and forthcoming while completing both to the best of their ability.

Definition of Terms

As defined by iNACOL (2011), the following terms related to the topic of virtual schools. The terms assisted in understanding the literature and research project as it was being completed.

- Asynchronous instruction: students learn at their own pace and on their own time schedules from instruction prepared previously by instructor.
- Blended learning/Hybrid learning (used interchangeably): instruction through a combination of online and face-to-face meetings.
- Fully online/Web based (used interchangeably): instruction that requires no face-to-face meeting and distribution of educational content is through the use of a computer and the internet.
- Instructor-led group: instruction where technology assists in the education and is held with face-to-face meetings.

- Learning Management Systems (LMS): internet-based systems that provide curriculum and educational tools designed to be used in virtual schools.
- Supplemental programs: individual courses in an online setting to complement instruction in a traditional school.
- Synchronous instruction: students and instructors interact in real time for instruction.
- Virtual schooling/Online courses (used interchangeably): a form of educating students using the internet and online curriculum.

Summary

Virtual learning redesigned American schools and provided an alternative to traditional education. Since technology became part of modern society, there was no question that its use would continue to increase among educators. Using digital resources to supplement learning quickly became part of the student's daily routines.

Implementing technology tools transformed learning and expanded the boundaries of the classroom. In a time of virtual school growth across the county, school administrators were needed, and they would benefit from professional development on how to lead in a new style of education.

Through a mixed methods research design, eight virtual school administrators completed a self-assessment and their staff completed a similar survey to evaluate the ideal leadership characteristics for a virtual school administrator. The results of the survey measured, by rank order, the twenty leadership traits perceived necessary for the ideal virtual school leader. Following the completion of the surveys, individual interviews with the administrators and one teacher from each virtual school were

conducted and transcribed for further analysis. By coding the transcripts, themes related to Kouzes-Posner's twenty characteristics were identified and consolidated to further support the findings of the surveys. The outcomes of the quantitative and qualitative data were anticipated to determine what ideal leadership characteristics existed among virtual school leaders.

Although significant growth continued in K-12 virtual learning options, there was limited research regarding the leadership skills necessary for success in blended or online learning environments. Further research with school leaders helped develop administrative programs for education and support administrators as they expanded virtual school programs. By conducting a research study to assess ideal leadership characteristics, the results added to the body of knowledge in the area of virtual school education. The outcome of the study could help prepare school administrators for leading in a unique educational environment.

CHAPTER II

REVIEW OF THE LITERATURE

Understanding Virtual Schools

A History of Virtual Learning

For generations, educators used forms of distance learning to help pupils gain access to instruction that may not be available in certain geographical areas or schools. Educators relied on means of communication such as the radio, postal service, cassette tapes and telephones to present instruction to students who were not learning in a traditional classroom (Rice, 2006). Distance learning was conducted in some schools with videotapes, broadcast television, and correspondence materials and also served for retake of a failed course, to experience additional classes, or in an effort to achieve early graduation (Tino, 2002). The preference for distance learning came mostly from students who favored having more control over their learning process (Katz, 2002). With the invention of the internet, distance learning expanded to make instruction more accessible and interactive.

The field of education quickly adopted online learning as a form of distance education. Instruction using the internet fell under many titles: distance learning, online learning, web-based instruction, distance education, online education, interactive education, virtual K-12, virtual program, virtual school, e-learning, hybrid classrooms, web-facilitated, cyber school, and cyber charter (Rice, 2006). Internet programs in schools were implemented across the nation for numerous reasons, all of which were to meet students' specific needs. Regardless of the title given to the program, the terms

referred to a school offering courses through a distance-education format delivered primarily through devices connected to the internet (Barbour & Reeves, 2009). Each state and district's decision to implement online learning attempted to reform education and provided solutions for short comings in the system. Online programs provided a way for districts to remediate students using credit recovery, to challenge gifted learners who desired to move at a faster rate, to expand academic options when there was limited scheduling, to provide flexible scheduling due to student travel schedules or personal needs, and to offer an alternative to brick-and-mortar schools that may have been overcrowded (Reid, Aqui, & Putney, 2009).

Simply put, virtual schools were educational organizations that offered K-12 courses through internet-based methods, with time and distance separating the teacher and the learner (Vanourek, 2011). According to Schlosser and Simonson (2002), the organization of a successful online program required the implementation of four components. First, the distance education should be institutionally based. Secondly, the teachers' and learners' geography, time and knowledge of concepts needed to be taken into consideration. Thirdly, the proper tools for interactive communication should be in place to communicate at a distance. Finally, the instruction and resources should facilitate and promote learning. When these four components were incorporated in a distance learning program, the success for the school and the student increased.

The popularity of online education across the nation increased as federal and state policy initiatives focused on expanding educational opportunities for all students (Hassell & Terrell, 2004). Davis and Robyler (2005) explained, "the vision that drove the first virtual schools was that of more affordable, consistent, and equitable access to high-

quality educational opportunities for students who need them most: rural, underserved, and at-risk populations” (p. 400). States began adopting Virtual School Bills to better define and implement online education. Thirty states had fully online schools that enrolled 275,000 students (Germin, Murin, Vashaw, Rapp, & Watson, 2015). In the United States, 82% of school districts had one or more students in an online course during the 2008-2009 school year and enrollment grew at a rate of 30% per year for Kindergarten through Grade 12 (Patrick, 2011).

The Center for Public Education (2012) examined how many states implemented virtual school programs as an educational option. Since its existence in 1997, Florida Virtual Schools (FLVS) was the first online education program in the United States and provided its courseware, as well as expertise, to online learning programs across the nation. Michigan Virtual University (MVU) was established in 1998 by the State of Michigan and even provided online courses for students as well as continuing education opportunities for school personnel. Founded in 2000, the Pennsylvania Cyber Charter School grew to one of the largest and most successful online public schools. In 2001, a three-year federally funded grant was issued by the Department of Education to Georgia, South Carolina and Tennessee to make courses available by means of a contract with an online software company (Barge, n.d.). Georgia also passed state legislation to create a statewide online course marketplace for students to have access for both state and district run online programs (CPE, 2012). During this same period of significant growth, the states of Michigan, Alabama, and Florida mandated the creation of hybrid and online learning programs within all the school districts of their states (Cowan, 2011).

In a comparative study of web-based and classroom-based learning, Sitzmann, Kraiger, Stewart, and Wisher (2006) reflected positive views of virtual schools. The results of the study indicated that online learning was superior to classroom-based instruction in terms of declarative knowledge outcomes and personalized learning. Online instruction assisted educators in rural schools to fill in some instructional gaps, to expand their educational offerings, and to provide an avenue for personalized instruction (Freidhoff, 2017). In a survey conducted by iNACOL, school district administrators reported that an estimated 64 percent of students participating in fully online programs were in grades 9-12. Elementary students (grades K-5) comprised 21 percent and middle school and junior high school students (grades 6-8) accounted for the remaining 15 percent.

Researchers estimated that by 2017, online enrollments would have increased to approximately six million K-12 students (Blazer, 2009; Cavanaugh, 2004). Because of the variety in implementation, students did significantly better with more learning time, more content, or both (Kronholz, 2011). Students were able to take courses of their choosing during the school year to supplement their course load or work on new credits. Although exact numbers of virtual schools were difficult to determine because of the limited reporting data, school officials estimated that the majority of states had some form of cyber-school operating within its boundaries (Long, 2004). With the substantial growth of virtual learning, states and districts continued to enrich the online experience. (Ahn, 2011, Florida Virtual Schools, 2013). Huerta, Gonzalez, and d'Entremont (2006) noted that virtual schools were “quietly gaining momentum across the country and began to challenge traditional definitions of public schooling by delivering instruction from

beyond the classroom walls” (p. 103). Many scholars suggested that K-12 online learning was here to stay and would gain a strong foothold as technologies improved (Barbour & Ferdig, 2011, Christensen, Horn, & Johnson, 2008).

Types of Virtual Learning

Virtual learning was organized in different ways and was often unique to its provider, charter or district as described in Table 1.

Table 1

Summary of Types of Virtual Schools

Type	Description
State-Sanctioned, State-level	Those virtual schools that operate on a statewide level, such as the Florida Virtual School (FLVS) or the Illinois Virtual School (IVHS).
College and University based	Those independent university high schools or university sponsored delivery of courses to K-12 students, such as the University of Nebraska-Lincoln Independent Study High School or the University of California College Prep Online.
Consortium and Regionally based	Those virtual schools operated by a group of schools or school districts that pool their resources to participate, such as the Virtual High School (VHS).
Local Education Agency based	Those virtual schools operated by a single school or school district, such as the Gwinnett County Online Campus or the Cobb County eSchool.
Virtual Charter Schools	Those virtual schools created under the charter school legislation that has been passed in many states, such as Connections Academy, also commonly known as cyberschools.
Private Virtual Schools	Those virtual schools that are operated the same as a brick and mortar private school, such as the Christa McAuliffe Academy in Washington state.
For-Profit Providers of Curricula, Content, Tool and Infrastructure	Those commercial companies that act as vendors for the delivery of courses or the use of course materials, such as APEX Learning or Aventa Learning.

Adapted from Virtual Schools: Trends and issues by T. Clark, 2001.

According to a report compiled by the Center for Public Education (2012), the two most common formats of online learning were referred to as “fully online” and as “blended learning.” Enrollment in both full-time virtual schools and full-time blended learning

school had unexpected growth (Barbour & Ferdig, 2011). The U.S. Department of Education (2010) reported only a few rigorous research studies were published reviewing the styles and productivity of online learning for K–12 students. However, these studies indicated that students in online conditions performed modestly better, on average, than those learning the same material through traditional face-to-face instruction. Additional studies contradicted previous findings by reporting that virtual school students performed significantly worse in reading and math than their traditional school counterparts in terms of student gains (CREDO, 2015). The debate continued among educators who demanded an agreed minimum of face-to-face contact in a blended format while others insisted that students did not have to come to a classroom receiving all instruction online (Cavanaugh, 2004).

Blended instruction in virtual schools.

Further evaluations were conducted to examine the ease of access to coursework and usefulness of the environments for online learning compared to blended learning (Boyle, Bradley, Chalk, Jones, & Prickard, 2003, Liaw, 2008). Research of blended learning was solicited and accumulated from many agencies and foundations including the U.S. Department of Education, the Bill & Melinda Gates Foundation, and the Michael & Susan Dell Foundation as supporters of blended learning and technology uses in education (Vanderkam, 2013). Researchers concluded that student achievement was higher when online materials were integrated into more traditional instructional methods where a facilitator assisted with technology integration. Students participating in a blended learning program had a higher completion rate than those studying in the fully online learning environment (Bicen, Ozdamli & Uzunboylu, 2014). Additional research

by Morgan (2015) supported previous findings that a combined program such as the hybrid, also known as blended, produced better results without hindering academic performance. In the State of Florida, the Digital Learning Now Act brought many requests for blended learning curriculum (Florida Virtual Schools, 2013). Blended learning allowed the students to interact inside the classroom as well as outside the classroom to provide an enriched experience at their own pace, anytime or anywhere. Numerous studies validated the positive results of student successes when online materials were integrated as a blended learning approach instead of the isolated online format (Bicen, Ozdamli & Uzunboylu, 2014; Florida Virtual Schools, 2013; Morgan, 2015).

Fully online instruction in virtual schools.

Educating through fully online programs became an educational option for students nationwide. Students worked from any location using technology devices for materials and lesson to be delivered online. In just two decades, both the digital technologies and educational systems evolved together to spread a form of schooling strictly through the internet (Davis, Eickelmann, & Zaka, 2013). The use of virtual learning, online curriculum, and e-classes became an important option in education. Educating students transitioned from a classroom of dozens to a classroom of one, from assigned schools to chosen ones, from pre-determined class periods to flexible learning time, and from classrooms with chalkboards to cyberspace (Vanourek, 2011). Case studies were conducted by researchers to closely examine fully online virtual schools and found that students experienced content via multimedia, had assignments and homework similar to traditional students, and interacted with the teacher and other students via

email, chat, or other online options (Ahn, 2011). Online learners utilized media and technology tools, were comfortable with information enhanced courses, and were at ease with an array of digital devices (Chang, Uzunboylu, & Ibrahim, 2009); therefore, contemporary and sustainable learning environments were created to cater to 21st century generation of learners.

Instructing Virtual Learning with Online Tools

With the use of the internet, on-line instructional tools provided advantages in distant learning and became an important supplement in education (Cavus, Uzunboylu, & Ibrahim, 2008). The interaction between digital learning aides and the actual educational desires using virtual learning corresponded enabling students to manage instruction and incorporate personal knowledge (Wu, Lee, Chang, & Liang, 2013). Researchers determined the use of assistive technologies as improvements in academic achievement of online students when compared to the teaching methods of traditional schools (Andujar, Mejias, & Marquez, 2011; Chang et. al, 2009, Hanewald, 2013). Through technology devices, students participated more with inquiry-based learning more easily and increased their understanding of the learning objective (Shih, 2010). Virtual school educators had access to supplementary mobile learning aides to create real-life scenarios for their students. Technologies had the power to enhance teaching and learning. The overwhelming use of online learning throughout the nation brought about evaluations of operative tools and instructional strategies to meet the needs of the program (Kirkwood & Price, 2013). Technologies enhanced skills that facilitated problem-solving during the learning process to become applicable to the environment where students lived day-to-day (Cavanaugh, 2004).

Growing instructional delivery used in both blended and fully online formats was synchronous (students and teachers communicating in real time) and asynchronous (students working at different times from teacher recorded lessons). These options allowed students to find the best program for their needs and learning styles. To ensure success with either online delivery program, the educator would clearly outline the student's responsibilities and technology requirements prior to beginning the course (Rice, 2006). The National Center of Educational Statistics (2010) reported 59% percent of school districts having students enrolled in courses that incorporated virtual learning as asynchronous (not simultaneous) instruction instead of synchronous (at the same time as instructor). There were an additional 27% percent of districts with students enrolled in courses that used both forms of teacher delivery to a small or moderate extent. A research study conducted by Kinash, Knight, and McLean (2015) analyzed the use of recorded or reproduced lectures for students and found a positive effect on student learning and achievement through the online instructional delivery. Some applications for instructional delivery combined the flexibility of synchronous and asynchronous online instruction for occasional face-to-face interactions that supported different models of online learning (Beldarrain, 2006).

An ever changing, extensive list of supplemental teaching tools placed learning at the fingertips of students. According to Harris, Jones and Baba (2013), the increased "sophistication of digital technologies and great access to digital tools assisted virtual learning to be part of schooling" (p. 927). Online resources and web-based instructional software increased flexibility for learners and offered opportunity for reteach. For example, recorded lectures or other course components were made available online with

regard to when or where students participated in their learning activities (Copley, 2007). A study conducted by Beldarrain (2006) determined that the way the media was used was more important than merely having access to it. Instructional tools offered educators innovative ways to present instruction.

Researchers investigated the design and functionality of virtual learning as it related to a platform for student collaboration, especially for learners who had grown up with digitalized learning environments and developed a preference for them (Hanewald, 2013). The effects of mobile technologies on learning and teaching were highlighted in accordance with social media in the form of Skype, Twitter, and blogs for providing instant learning (Gikas & Grant, 2013). With immediate, specific, and personalized data, technologies could transform education feedback for the student's benefit (Vanderkam, 2013). The integration of mobile devices and e-books were used in an effort to raise the students' familiarity with digital library and gain access to literature (Glackin, Rodenhiser, & Herzog, 2014). The adoption of Mobile Assisted Language Learning for bilingual education, referred to as MALL, facilitated listening to instruction using cell-phones to assist in learning (Azar & Nasiri, 2014). While using mobile augmented reality technologies, students combined real-life sensory experiences with digital environment perceptions for content knowledge and completion of the learning tasks (Dalgarno & Lee, 2010). According to a report from the U.S. Department of Education (2010), there was no significant preference from students or teachers on the media type used to deliver the content, yet the way the media was used by the instructor was more important for the student.

In a study of the willingness to incorporate more mobile technology, Domingo and Gargante (2016) determined that educators agreed that mobile devices made it possible for students to learn, collaborate, and share ideas with one other using the internet and technology devices. Attitude toward mobile learning technology was one important factor that helped determine whether or not learners and educators were ready to use a variety of learning supplements. The researchers further investigated the type of devices used by students and teachers to access the online materials. Results from the study indicated that 71.3% of students used a smartphone, 27.7% had a tablet, while only 1% of the students did not have either of them. Mobile devices (smartphone or tablet) for browsing the worldwide web and accessing emails were used by 41.5% of the students, while 16.7% of them used mobile devices for additional education curriculum. Donmingo and Gargante (2016) summarized that students' mobile technologies played a large part in virtual learning and were easily accessible for the learner.

Teaching using technology devices that presented relevant materials (links, images, texts, and videos) in a well-integrated and organized form supplemented the content and benefited students while improving their learning performance (Mayer & Moreno, 2003). New technologies supported knowledge management, accessibility, exchangeability, and delivery of both knowledge and learning materials. While using a variety of technology tools in a virtual school program, multiple paths for students to learn and demonstrate mastery existed (Vanderkam, 2013). As determined by Sharples (2005), the implementation of any educational technology consisted of three parts: the learner, the educator and the technology itself. As technology was incorporated into the educational process, teachers and students went beyond traditional teaching methods

using innovative ways to improve student learning in the digital age (Schoenbart, 2017). With technology for instructional delivery and the teacher-student interaction through devices, education had reached a new level of instruction in a virtual world with media to keep learning portable and engaging.

Developing a Virtual School

Full-time online schools were organized as charter schools, operated by private education management organizations, and developed as a part of district or state public school system. As virtual schools became a more attractive option for students, state and district education agencies competed with conventional schools for funding, teachers, students, and school leaders (Cavanaugh, 2004). Unlike traditional public schools, virtual schools had the flexibility to cross state lines as national companies and some were even functioned internationally (Bausell, 2016). As the popularity of virtual schools increased, the National Education Policy Center, NEPC, (2014) recommended accountability baselines to more clearly define license requirements for existence of the virtual school and to collect data as performance measures of the online program. In a report of online education standards, the International Association for K-12 Online Learning, known as iNACOL, defined six elements when developing a virtual school. The elements were defined as leadership, professional development, teaching practices, management systems policy, curriculum, and technology (Connections Learning, 2016; Pape & Wicks, 2009; Patrick, 2011).

The defining dimensions of online programs were further outlined by Vanourek (2011) in a primer about virtual schools to include ten different variables: comprehensiveness of program, population to reach, type of program, location of

program, delivery of instruction, operational control, type of instruction, grade levels included, teacher-student interactions and student-student interactions. Establishing a virtual program was directly linked to the leadership of the program, the appropriate communication media being used, and how the decisions would impact the initial performance of the school (Hambley, 2007). With the trend toward online learning and virtual schools, virtual school programs began to emerge, and the sustainability of the programs were critical for the students being served. The Evergreen Education Group (2015), with the help of Watson, published a detailed analysis to outline the key qualities to be addressed before instituting a virtual program: 1) Define the nature of program that complies with the state laws of governing a virtual learning program. 2) Identify the source of funding for the virtual program to be established, including start-up costs and operational budget. 3) Establish goals that are essential to the program to include the professional development, content areas, teaching methods, technology implementation, and school operations. The key qualities defined by the Evergreen Education Group encompassed the six essential elements determined in the iNACOL report.

Governing a virtual school.

State legislatures, governors, and boards of education passed laws, enacted budgets, and created rules that supported online schools operating, funded local and state virtual schools, and provided for increased opportunities for students via support of online schools and courses (Hill, Roza, & Harvey, 2008). However, states and districts had different policies regarding students in online learning courses and schools (Center for Public Education, 2012). State requirements were often guidelines when designing and developing a virtual school. Unless exempted under a charter or private option,

virtual schools still complied with policies about licensing requirements for teachers, monitoring attendance for students, adopting textbooks and software, and testing students for accountability purposes (Vanderkam, 2013).

Funding a virtual school.

Virtual schools operated under different benefactions receiving funding from the federal, state, or local districts, university partnerships, private donations, grants, and even philanthropic donations (Vanderkam, 2013). Restrictions sometimes applied to allocated spending when public funds were issued to a virtual school through state or local education agencies (Hill et. al, 2008). In states such as Alabama and Pennsylvania, virtual schools received funding per pupil using the same formulas as other schools (Leonard, 2017). A flat rate of \$6,500 per student was allocated to the virtual schools of Colorado (Leonard, 2017). Even as a state operated virtual school program, Florida funded state virtual schools based on performance and each school received only one-sixth of the per-pupil funding per course passed by the students (Cavanaugh, 2004).

Thomas B. Fordham Institute constructed a report by authors Finn and Fairchild (2012) evaluating the cost of digital education and created a framework for important allocation decisions for blended and virtual schools (Table 2). A report titled “The Cost of Online Learning” by Battaglino, Halderman, & Laurans (2012) reflected on the limited availability of reliable and consistent costs data of virtual learning. However, they estimated that the per-pupil cost of a virtual school ran between \$5,100 and \$7,700 while estimating that a blended learning model ran between \$7,600 and \$10,200 (Hill, Roza, &

Harvey, 2008). The average overall per-pupil costs of both models were significantly lower than the \$10,000 national average for traditional brick-and-mortar schools (Vanderkam, 2013). The report further outlined how cost savings occurred when operations were reduced with less facility utilities, no transportation and less personnel. The National Education Policy Center, also known as NEPC, (2017) reported virtual schools had a significantly larger number of students per teacher with an average ratio of 34:1. In many cases, textbooks and excessive photocopies were replaced with technologies and computer software. However, some costs increased with teacher professional development and technology costs such as infrastructure, online management systems, and software.

Table 2

Funding Sources for Virtual Schools

	Special state appropriations	Federal categorical-program funds	State per capita student funding	Local per capita student funding
State-run virtual schools	Available	Available	Varies by State	Not Available
District-run virtual schools	Not Available	Available	Available	Available
Statewide virtual charter schools	Not Available	Varies by State	Available	Not Available
Local virtual charter schools	Not Available	Varies by State	Available	Varies by State
Out-of-state virtual schools and vendors	Not Available	Not Available	Not Available	Not Available

Adapted from Education Reform for the Digital Era, by Paul Hill, 2008.

As experts in the area of school funding, Hill, Roza, and Harvey (2008) explained how public funds were channeled through state or local education agencies so virtual schools run or chartered by public agencies could receive public funding. The experts recommended further investigation and policy changes to allow funding for education

and not institutions, moving money as students move schools, and paying for unconventional forms of instruction. Further research was needed to determine the actual costs for providing a quality K-12 online and blended learning experience since a majority of literature related to the cost of K-12 online and blended learning has focused on funding in relation to traditional schooling within brick-and-mortar institutions (NEPC, 2017).

Goals for operating a virtual school.

The operations of a virtual school required the faculty and staff to be proficient in subject and have the skillset to connect the subject area content through technology and adequately communicate through email, instant messaging or discussion boards (Johnson-Lee, 2015). Professional development and technology skills were crucial to ensuring that school personnel were prepared to incorporate technology for 21st century learning in a virtual school program. The administration of the school needed to establish: (1) enrollment practices, (2) information about the school's instructional model, (3) daily practices of teachers, (4) role of the parents, (5) expectations for the students, and (6) ensuring the school is making progress (Ahn, 2011).

In a study conducted by Lueken, Rittler, and Beck (2015), the outcomes reflected that time considerations should be provided for new virtual schools to mature in curriculum development and decision making. Additional findings indicated that students did not do as well the first year in a virtual school needing time to adjust to the technology but became academically more successful over time. Virtual school stakeholders needed to be aware of the findings when establishing virtual school

programs and closely watch performance data as it was the only measuring tool of school success.

Key Players in Virtual Schools

Digital learning was not only about online instruction with technology devices but was a new kind of educational setting with student-centered digital learning. The virtual school model included a comprehensive approach from key players in the program: the teacher, the parent, the student, and the school leader (Cavanaugh, 2004). Online education expanded beyond the boundaries of any one school or district and evolved into a national network of learning, ranging from single modules to complete diploma programs, and consideration was given to the development of those who participated in the program (Kennedy & Archambault, 2015). Eaton (2003) pointed out that the online education paradigm shifted perceptions of instructional time and space to the ways of engaging students; therefore, the individuals involved in the program were interactive in the learning. Participation and achievement required all members be contributors for the sustainability of the virtual program.

Teacher tactics.

Teachers played a fundamental role in student achievement in virtual school settings (Miron et al, 2014). Virtual school teachers were typically experienced professionals who wanted employment opportunity, desired a new model of teaching, and welcomed a change of pace (Archambault & Larson, 2015). Despite the growing body of literature related specifically to K-12 online teachers, few studies focused on the specific characteristics and preparation of teachers in virtual schools and in a field expanding with the uses of educational technology (US Department of Education, 2010). States, districts,