

Job Attainment and Perceived Role Differences of Cyberschool Leaders

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ABSTRACT

As cyberschooling options expand, it is vital that we understand the nuances of these particular learning opportunities. Because little research exists on leaders of K-12 cyberschools, this exploratory case study had two purposes. We first examined how 18 cyberschool leaders in the United States obtained their position. Second, we explored the perceptions of cyberschool leaders regarding the differences between their job and that of a traditional brick-and-mortar school leader. We found that cyberschool leaders tend to be predominantly new, technology savvy administrators who have some background in online learning. Main differences between cyberschool leadership and brick-and-mortar school leadership included interactions with students, teacher supervision, provision of professional development, and management of the day-to-day operations.

Keywords

Cyberschool, K-12 online learning, Principals

Introduction

The importance of school leadership, independent of school setting, is clear (Hargreaves, Moore, Fink, Brayman & White, 2003; Leithwood, Aitken, & Jantzi, 2006). Although we know a great deal about educational leadership within a brick-and-mortar setting, we know very little about school leadership in an online context. Considering the global technological revolution that currently is taking place and the increased availability of K-12 online coursework, online programs, and online schools, it is imperative that we begin to research and understand the differences between leaders of cyberschools (schools that offer fully online programs) and leaders of brick-and-mortar schools. In *Education Transformation: How K-12 Online Learning is Bringing the Greatest Change to Education in 100 Years*, Packard (2013) discussed the future of education in an online world. Packard noted, “what’s clear today, however, is that a new system of educating children is unfolding, and the journey is far from complete. Although we don’t know the journey’s final destination, it’s nonetheless worthwhile to look a little further down the road” (p. 203). This study offers important insights for understanding how cyberschool leaders were able to move into their positions given the nascence of such career options and how their roles differ from those of brick-and-mortar school leaders. These understandings should help university school administration programs that wish to better address these unique needs and offer context to leaders who want to explore this unique career path.

Research on K-12 online leadership

Beaudoin (2003) suggested that the need for effective leadership is significant in the online world. Abrego and Pankake (2010) articulated that cyberschool leaders cannot operate in an environment of “business as usual” by mirroring leadership practices of brick-and-mortar schools. Some work has been done to investigate how K-12 online programs are led with regard to planning (Berg & Clark, 2005), policy (Augustine-Shaw, 2001; Powell & Barbour, 2011), and funding (Baker & Bathon, 2013). However, a limited number of studies have been dedicated to understanding the explicit roles and needs of the K-12 cyberschool leader. Clark and Berg (2012) indicated that online schools and programs “can play a major role in ensuring equitable access to high-quality learning opportunities for K-12 learners” (p. 11). Of the K-12 online school literature that does exist, very little focuses explicitly on the K-12 cyberschool leader. Thus, the current research is timely and needed.

Research on K-12 online learning often tends to focus on the brick-and-mortar school leader. For example, Karlin (2005) conducted research with the intent to create a handbook for brick-and-mortar school leaders regarding

supplemental K-12 online courses. Additionally, Morse (2010) researched the perceptions of brick-and-mortar school leaders regarding K-12 online learning in the state of Rhode Island. Similarly, Jancek (2003) investigated the participation of Illinois public schools in K-12 online learning. Jancek found that the leaders' knowledge about technology and virtual learning influences participation rates in supplemental programs.

Some research has been done on how K-12 school leaders evaluate online teachers. For example, Tobin (2004) argued that evaluations of online teaching should be similar, if not the same as, face-to-face teaching because quality instruction transcends its mode. Tobin suggested that the standards of quality education and teaching should not be modified due to the environment in which the learning takes place. In contrast, Saleh and Lamkin (2008) argued that online courses must be evaluated in a different way than face-to-face courses because mode impacts measures of quality. Given the discourse about evaluating teachers and their instruction, Rice (2009) suggested that leaders of K-12 online programs and cyberschools must be strong instructional leaders who need to evaluate course design, improve course delivery, and develop teacher professional development. These skill sets are traditionally developed in pre-service preparatory programs. However, as LaFrance and Beck (2014) found, very few leadership programs give pre-service administrators K-12 online learning field experiences. LaFrance and Beck found that programs that did offer K-12 online learning field experiences were reacting to individual student requests rather than infusing those experiences into the core program.

Brown's (2009) research focused on principals' beliefs about the purpose and potential of K-12 online learning. Although now dated, the administrators in Brown's study indicated that the purpose of online schools is to individualize instruction, expand access, and deliver quality programs. In another study, Quilici and Joki (2011) examined how cyber principals serve as instructional leaders in the organization. Quilici and Joki noted how principals "increasingly find themselves in positions with responsibility for online leadership...how principals meet this new responsibility will determine the online school's viability in terms of teacher performance and student learning" (p. 143).

Reid, Aqui, and Putney (2009) conducted a case study of the first year of implementation of a cyber high school. The authors suggested that the successful creation of a cyberschool is dependent upon tasks such as developing or acquiring quality online courses, training competent online teachers, and securing adequate funding. These findings are relevant to managing cyberschools even though the focus was not explicitly on the leader.

Researchers have focused on national supplemental programs such as New Zealand's e-learning clusters that are supported by a national virtual learning network. This program offered classes via videoconferencing and web technologies to high school students. Although not directly focused on the leader, Barbour and Wenmouth (2013) wrote a white paper detailing three possible visions for the structure of these e-learning clusters. The structure of these online programs, however, has direct implications for leadership. For example, Buchanan (2013) focused his Master's thesis on understanding the leadership structure of the current New Zealand e-cluster and virtual learning network. He found that leaders of these e-learning clusters focused their efforts on pedagogy, ongoing collaboration with stakeholders, dialogue, and creating a shared vision.

Based on the available literature, it is our belief that leadership in cyberschools may differ from leadership in K-12 brick-and-mortar schools. Freedman (2005) noted that K-12 online schooling contributes to a systemic educational transformation "not found in earlier forms of distance education, educational technology, or alternative education" (p. 35). Given the potential for cyberschools, we believe it is imperative that we gain a better understanding of the nuances of this career choice.

Methodology

This exploratory collective case study (as defined by Stake, 2000) is focused on the cyberschool leader. We set out to answer two research questions. First, how do individuals become cyberschool leaders? For this question, we were interested in exploring this career path. Second, what perceived differences are there between the roles of a brick-and-mortar school leader versus that of a cyberschool leader? Data collection for the study came from the use of semi-structured, open-ended telephone interviews.

Participants

One of the accrediting bodies for cyberschools is AdvancED. AdvancED (<http://www.advanc-ed.org>) serves more than 30,000 public and private schools in more than 70 countries. For AdvancED accreditation, online school leaders are charged with meeting five standards that focus on vision, governance, teaching, support, and continuous improvement. In the current study, we used the cyberschools with AdvancED accreditation as our population.

As of early 2013, AdvancED reported accrediting 130 public cyberschools in the United States. Upon further investigation, we found that 32 of those were duplicates, schools within the same school under a different name, or schools that no longer existed. Thus the actual population was 98 public cyberschools. We found the names of school leaders and their contact details through both the AdvancED website and searches of school-specific websites. Recruitment efforts included three rounds of personalized emails sent directly to the 98 school leaders. We followed up with each nonresponsive school leader via a telephone call.

In total 18 school leaders agreed to participate in the study, which achieved an 18.3% participation rate. We considered these 18 participants to be key informants as defined by Patton (1990) since the schools represented a sample that demonstrated a high level of quality given that each was accredited by AdvancED.

Table 1 below details the demographic data of the participants and their respective schools. One third of the interviewees were males. It is uncertain if this represents the norm in the population. Aside from one, all leaders had little to no experience as a brick-and-mortar school administrator. Most ($n = 14$) had less than 5 years of experience as a K-12 school leader. The schools in this study represent fully online (school, courses, and programs are fully online) and supplemental (online courses and programs support traditional brick-and-mortar school) public cyberschools.

Table 1. Demographics of cyberschool leaders

Principal	Gender	State	Experience as brick-and-mortar school administrator	Experience as cyberschool administrator	Type of school	Grade level	Number of students
A	Male	Florida	0 years	4 years	Fully online school	K-12	270
B	Female	Washington	0 years	5 years	Fully online school & supplemental	K-12	451
C	Female	Colorado	0 years	4 years	Supplemental	9-12	1,200
D	Female	Utah	0 years	4 years	Fully online school	9-12	334
E	Female	Minnesota	0 years	1 year	Supplemental	9-12	197
F	Female	Utah	0 years	2 months	Supplemental	K-12	456
G	Male	Georgia	0 years	3 years	Supplemental	9-12	8,400
H	Male	Arizona	0 years	3 months	Fully online school & supplemental	9-12	123
I	Female	Florida	0 years	1 year	Fully online school	K-12	1,589
J	Female	Oregon	0 years	1 year	Fully online school	K-12	58
K	Female	Utah	0 years	4 years	Supplemental	K-12	1,202
L	Female	Texas	0 years	5 years	Fully online school & supplemental	3-12	5,500
M	Female	Minnesota	0 years	2 years	Fully online school	K-12	150
N	Male	Nevada	0 years	1 year	Supplemental	9-12	148
O	Male	Idaho	2 years	5 years	Supplemental	7-12	3,774
P	Male	Washington	3 years	8 years	Fully online school	K-12	1,222
Q	Female	Indiana	8 years	2 years	Supplemental	9-12	13,000
R	Female	Minnesota	0 years	11 years	Fully online school	8-12	175

Interview protocol

Each participant consented to participate in a 45-60 minute recorded, semi-structured telephone interview. The protocol was developed by modifying interview protocols from previous studies that investigated school technology leadership in different settings (Richardson & McLeod, 2011; Sauer, Richardson, & McLeod, 2014). The interview protocol was shared with participants beforehand.

Limitations

The current research is limited in that the population consisted only of public cyberschool leaders identified by AdvancED. The population is not inclusive of all cyberschool programs (public, private, and charter) in the United States. Our study is also limited by what may be perceived as a relatively small sample. We attempted to interview as many cyberschool leaders as were willing. As such, we invited each of the 98 school leaders to interview. Nevertheless, the data began to reach a high level of saturation through the 18 interviews.

Data analysis

Coding was done using the constant comparative method as detailed by Lincoln and Guba (1986) as well as others (e.g., Patton, 1990). For this study, an initial coding phase was used to develop a robust codebook. A final coding phase was used to code and conduct a confirmatory analysis. For the initial phase of coding, each transcript was coded by one of three researchers using open coding. We worked toward categorical saturation, searching for the “emergence of regularities” (Lincoln & Guba, 1986, p. 350). The researchers collaborated iteratively on the final coding scheme until a consensus was reached.

The final coding phase occurred in three rounds during which each researcher coded a subset of the 18 interviews until every transcript was coded and confirmed. Each transcript thus was coded by one researcher then confirmed or rejected by two different researchers. At the conclusion of each round, inter-rater reliability was calculated. After three rounds we achieved an acceptable agreement rate of 94.7% across three raters. Table 2 below details the inter-rater reliability by round of coding. Using this process, the multiple raters were able to triangulate the data across interviews to find themes (see Merriam, 1998).

Table 2. Inter-rater reliability for each round of coding

Round of coding	Number of codes	Number of codes added	Number of codes deleted	Agreement
First	625	N/A	N/A	N/A
Second	730	105	0	84.5%
Third	771	41	0	94.7%

Results

The results will be discussed with regards to each of the two research questions. The themes that aligned to each question will be further explored. The themes are not presented in order of importance, but rather by convenience.

Research question 1: How does a person become a cyberschool leader and what core dispositions are needed to be a cyberschool leader?

To better understand how a person secures a cyberschool leadership position, we explored perceptions of core elements of leading a cyberschool as well as these leaders’ past experiences. Themes that arose included being flexible and adaptive, being technology savvy, serving as an instructional leader, and being an effective communicator and collaborator.

Flexible, adaptive, and innovative

Principal R discussed how cyberschool leadership requires being open-minded and innovative. Principal A noted how leading a cyberschool is like traveling to Mars: “It is doing something that no one has done before.” These leaders discussed how change was the norm in cyberschools. “I think that to lead an online school, you have to be progressive and willing to frequently change” (Principal N). Principal L noted how as a cyberschool leader, one must accept that “change is inevitable.” Principal O discussed how change happens much more rapidly in online schools than it does in traditional schools.

Many of the leaders underscored the importance of being flexible, innovative, and change-oriented. For example, Principal A said “neither you nor I can say what cyberschooling is going to look like eighteen months from now.” Likewise, Principal N described how cyberschool leaders need to think outside the box and “look ahead to where the world and society is going to be in the next five years.” Principal R talked about how she secured her current job because the district “needed somebody who would be a little more creative and innovative.”

Technology savvy

The principals in this study detailed how one must have a certain level of technology fluency to be a cyberschool leader. Principal A noted how “leveraging technology is a big part.” This principal discussed how technology literacy is at the core of the role. When asked how they became technology savvy themselves, most of these principals reported that they became familiar with online technologies by taking an online course before they took on the cyberschool leader role. The leaders in the current study each discussed how their vision of leadership revolved around meeting the needs of a digital generation. Principal K described this connection by saying, “I am not afraid of technology and I am also not wowed by people who say they know a lot about technology. I am grounded in the reality that this is all about teaching kids.”

Principal O discussed how her district had preferences for candidates with no school leadership experience but online experience over a candidate with brick-and-mortar school leadership experience and no online experience. When asked how a person can better prepare to take up the role of a cyberschool leader, Principal J said, “one of the first things I would have somebody do is really learn about technology. I think a lot of administrators aren’t familiar with technology or maybe they are prejudiced against it.”

Past experiences of these leaders included a strong background in online or blended learning environments. Principal I stated that she taught online courses and thus “I knew the needs of students in a K-12 online venue and I had a lot of experiences with technology and the things we use on a daily basis to run our school.” Principal O stated that as a principal of a brick-and-mortar school, he “championed a blended learning model before blended learning was a household name.” Principal G did not think it was possible to be a good cyberschool leader unless one had experiences with K-12 online learning. Having strong software, hardware, video, and distance learning experiences were considered useful to getting hired as a cyberschool leader.

Instructional leadership

The leaders discussed how a core element of cyberschool leadership was instructional leadership. Principal Q discussed how a cyberschool leader must “understand that best practices for teaching online are different than teaching in a face-to-face classroom.” Additionally, Principal R reported how cyberschool leaders need to have a strong background in curriculum, standards, and instruction. Principal R described how this skill included monitoring and managing both student and teacher engagement. Principal J articulated that being an instructional leader is harder in an online school. Nevertheless, respondents noted that cyberschool leaders must be adept at building community, fostering teamwork, and getting teachers and students to work together to accomplish learning goals.

Principal F discussed how a cyberschool leader must understand that students in online programs are different than those in brick-and-mortar schools. The leader must understand why students are there and develop programs and experiences to meet their unique needs. Principal O reported that instructional leadership skills are more important than technology skills since the latter can be more easily taught.

Principal Q reported that she was hired because she could translate curriculum and state requirements into an online environment. Principal Q also had strong experiences with conducting and overseeing professional development in a large high school; this was a selling point during her job interview. Principal M believed that she was hired because of her experience as a curriculum director and as a classroom teacher. Principal H talked about how he was hired because of his experience conducting professional development and using instructional models. Principal B discussed how she was hired because of her experiences auditing curriculum and educational programs for five years. Principal I discussed how she was hired because she was a project manager in the business world and had expertise in innovative approaches to curriculum development. Experiences that help one become an instructional leader (e.g., curriculum, professional development, and standards) appear to be important to secure a job as a cyberschool leader.

Communication and collaboration

The cyberschool leaders in this study discussed that a core element to their leadership was communicating and collaborating with others. Principal D noted that she “would couple collaboration and communication” as a vital element of running a cyberschool. Leaders discussed how communication with students, teachers, and parents had to be regular and well thought out. Equally so, these leaders emphasized clarity of writing and message design. For example, Principal Q talked about how her “writing must be much more precise and accurate” given that most communication is done online.

Setting a vision is vital. However, communicating that vision is even more important. Principal K discussed how vision is as important in a cyberschool as it is in a brick-and-mortar school. However, a cyberschool leader must think plan for potential population growth of student and teacher. Principal E discussed how she secured the leadership position in her school because she was able to communicate the school’s vision to stakeholders - unlike the previous leader. Principal J discussed how the online school leader must be collaborative and proactive.

Principal D discussed the importance of collaborating with peers. She mentioned that she was hired “because I know how to play the game.” She talked about hiring the right people with whom she could collaborate. Her experiences of owning a lawn care business and learning how to deal with customers also played a major role in her getting hired. Principal K noted that she was hired because she had a well-articulated vision for the cyberschool. Further, she had “developed personal networks of people that she could turn to” as she led the cyberschool initiative. Principal F was hired because of her background in communications and marketing. Principal E noted that she was hired to start the school, so her ability to build rapport with staff was absolutely necessary. She was hired to “speak to a larger community...and craft a message and a strategy for reaching out.”

Research question 2: What differences are there between brick-and-mortar school leaders and cyberschool leaders?

The leaders in the current study were asked whether the job of a cyberschool leader was different than that of a brick-and-mortar school leader (asked as an open ended question). They then were asked to explain those differences. We followed up this question with asking if they agreed or disagreed with categories that appeared in other interviews. Table 3 below details the percentage of leaders who reported that leadership responsibilities were indeed different for a cyberschool leader. Note that some leaders did not choose yes or no for each difference.

Interacting with students, supervising teachers, providing professional development, and managing day-to-day operations were factors noted to be different by the highest percentage of cyberschool leaders in the study. The lowest percentage (41.2%) reported that legal and ethical issues were different. This is the only category where more leaders ($n = 10$) reported that this was not a difference. For the sake of brevity, what follows is a discussion of each of the four main topics, supported by quotes from selected cyberschool leaders in the study.

Table 3. Cyberschool leaders who reported differences by topic

Theme	Yes	No	%*
Interacting with students	17	1	94.4%
Teacher supervision	15	1	93.6%
Providing professional development	15	2	88.2%
Managing day-to-day operations	15	2	88.2%
Policy and/or political advocacy	13	2	86.7%
Curriculum development	13	2	85.7%
High quality instruction	14	3	82.4%
Recruiting and hiring	13	4	75.6%
Interacting with parents	13	4	76.5%
Budgets	12	5	70.6%
Legal and ethical issues	7	10	41.2%

Note. *The percentage represents those principals who discussed the topic and reported the topic was different.

Interacting with students

Over 94% of the cyberschool leaders discussed how interacting with students was different in an online environment. Leaders discussed how discipline was different in an online environment in contrast to a face-to-face environment. Principal D said, “We do have cyberbullying. These cute little teenage boys get online and see these cute little teenage girls and it’s just a whole different ball of wax in the digital environment.”

Regarding student interactions, cyberschool leaders also reported that the quality of communication and the types of discussions were different in an online environment. The leaders discussed how online communication resulted in better student interaction and a higher level of engagement. Cyberschool principals discussed how not relying on visual cues actually increased quantity and quality of their written communication.

Teacher supervision

Many of the cyberschool principals talked about teacher supervision and evaluation. Fifteen of the principals reported that this task was different for a cyberschool leader. However, they also noted how being online made this part of their job easier. Instructional leadership was discussed primarily in terms of being able to take a more in-depth approach to teacher evaluation compared to brick-and-mortar leaders. Leaders reported spending time supervising, evaluating, and using data to gather information on teacher performance across a longer period of time. The leaders discussed how the use of a learning management system allowed them to see what teachers were doing, either at present or in the past. The technology allowed them to gather a wider range of data. This robust data included almost all communications with students, lessons taught, student assignments submitted, and teacher-to-student feedback. As Principal Q put it, “there’s a virtual footprint for every teacher that I can observe.”

An additional topic noted by many of the leaders was how technology provided a more focused learning environment. It was discussed how this environment is free of distractions normally experienced by brick-and-mortar principals such as attending sporting events. As noted above, the technology also gave these leaders a greater access to observational and statistical data on teachers’ practices. The ability to monitor resulted in a more comprehensive system of teacher supervision and evaluation. For example, it was discussed how the use of a learning management system allowed the principal the opportunity to observe all student interactions, not just those witnessed in a fixed physical observation. Additionally, recordings of lessons, activities, and grading afforded these leaders the opportunity to observe various aspects of the learning experiences.

Providing professional development for teachers

Participants discussed how providing professional development for teachers was different when leading a cyberschool. Leaders discussed how professional development for teachers in a cyberschool is more individualized,

sometimes blended, and often conducted in a community of practice. For example, Principal O talked about individualized professional development.

We are also able to really differentiate the professional development that we offer for our teachers. So it is not a one-size-fits-all professional development model. We can track teachers where they are in terms of their growth and their confidence and provide targeted professional development based on where those are. In traditional environments you are often provided professional development kind of holistically for a group around certain themes or whatever the case may be.

Individualized professional development was also noted to be the product of the communication channels available through the use of learning management systems, text messaging, and video conferencing.

Cyberschool principals also discussed using a blended model of professional development. This allowed leaders to meet teachers' professional development needs in a combination of face-to-face and online contexts. This mixture gave teachers the advantage of face-to-face collaboration with other teachers while allowing for online, individualized professional development to address personal needs.

Four principals discussed the importance of integrating professional development into curriculum development in order to select the best combinations of content, pedagogical methods, and delivery. For example, Principal D stated, We have more control over a greater number of variables in the instructional arena...we have these thirty teachers that are basically incubators of innovation and when they find something that works they bring it to us, we put it on the faculty meeting schedule, and they present a workshop on what they figured out, how it works, the data to support it, the evidence that they have that it's successful.... You can just watch the entire room as they are figuring out how to implement it in their classroom.

Additionally, cyberschool principals in this study discussed how peer mentoring and data driven interventions were easier to implement in an online environment.

Managing day-to-day operations

Fifteen principals indicated that managing day-to-day operations in a cyberschool was different for them than colleagues in brick-and-mortar schools. Participants discussed how a cyberschool leader has more opportunities to adhere to daily and long-term plans. This increased focus was due to both a lessening of common duties assigned to a brick-and-mortar leader (e.g., student discipline, hall monitoring, bus duties) and an increased need to keep on top of educational technology advances.

The cyberschool leaders indicated that technology afforded them unique opportunities when it comes to managing a school. Principal C said, I think online is still a lot more data-driven in terms of the day-to-day operations. My primary goal on a daily basis is pulling data, looking at data, and figuring out exactly what's happening with each student, what is happening with each of my teachers, and making sure that the right messages are going out...I think we can do that because of the technology within our learning management system and our student information systems. We are further along into that idea of having ongoing and predictive analytics for our students that we can use to manage engagement that aren't in place in a lot of traditional [schools].

A small number of cyberschool leaders discussed funding differences in a cyberschool versus brick-and-mortar school. With regards to funding, Principal L said, "We get less funding than the brick-and-mortar schools do. We can't provide as many resources maybe as other schools." Likewise, Principal G noted how "resources is another piece. We try to build all of our textbook so we are not having to worry about sending materials to a large number of students." These costs however cannot always be avoided. Principal P talked about Advanced Placement classes. "In those classes we do have to provide a text. [Additionally,] lab equipment is more difficult for us because we have to purchase that and ship it" to students. Principal P detailed how his cyberschool only gets "80% of full funding so we operated at a loss for two years and our district had to supplement us to a tune of about a half million dollars for the last two years."

Discussion and conclusions

Authors have called for more research on the practice of K-12 online education generally and cyberschools specifically (Cavanaugh, Barbour, & Clark, 2009). Additionally, authors have urged researchers to focus on student learning in these environments (Barbour & Hill, 2011; Smith, Clark, & Blomeyer, 2005). There has been valuable work done investigating brick and mortar principals' perceptions of cyberschools (Brown, 2009; Karlin, 2005), but little has been done to explore the actual experiences of leaders of cyberschools (McLeod & Richardson, 2014). The current research aimed to be a foundation that can address this need.

This study was developed to explore two lines of inquiry. First we explored experiences that impacted a cyberschool leader's choice to accept this challenging position. Given that cyberschool leadership is a relatively new field, there are few data or leadership norms to inform practice. As a result, potential leaders of cyberschools may be unaware of the required skills set and thus may be ill-prepared for this job role. We identified four common themes from participants' interview responses. These skills are directly linked to being innovative leaders who must attend to the unique learning needs of teachers and students.

First, cyberschool leaders must be flexible and adaptable. This need has been noted in brick-and-mortar schools as well (Duke, 2004). Being adaptable to the changing needs of a cyberschool (be it technological, pedagogical, human resources, or cultural) requires a leader who does not shy away from change. Participants discussed how cyberschools are in their infancy and thus a constant state of change is the norm.

Second, cyberschool leaders need some degree of technology savviness. Leaders reported that it would be very difficult to lead an online school or online program without having a core understanding of what online learning was like from an end-user perspective. Having past experiences as either a teacher or a student in an online course appeared to be an essential experience. Being a technology savvy leader in a cyberschool thus looks different than it does in a brick-and-mortar school. For example, Sauers, Richardson, and McLeod (2014) found that effective school technology leaders need not be technology-savvy themselves, but rather can understand the tenets of technology leadership and surround themselves with the right people. In cyberschools however, it appears that being tech savvy is part of the job requirement.

Third, instructional leadership skills were vital to cyberschool leadership. This adds to the literature body given that Neumerski (2012) recently called for more work on contextual factors of instructional leadership. Like their brick-and-mortar school leader counterparts, a cyberschool leader must have a strong understanding of curriculum, standards, and instruction but must filter those through the particular lens of online learning. Instructional leadership has long been discussed as a core practice of brick-and-mortar leaders (see Leithwood & Jantzi, 2005; Marks & Printy, 2003).

Fourth, cyberschool leaders need to be good communicators and collaborators. These skills have been noted brick-and-mortar school leaders as well (Arneson, 2011; Dotger, 2011). However, given that most interactions by cyberschool leaders are done electronically, it is essential that these leaders master the skills of written communication and message design. Thus the context of the virtual environment makes this skill more important and nuanced.

The second line of inquiry focused on how cyberschool leaders perceived their job to be different than that of a brick-and-mortar school leader. In this study, four key differences between leading a cyberschool and leading a brick and mortar school were explored. These differences included interacting with students, teacher supervision, providing professional development, and managing day-to-day operations. These elements are vital in a brick-and-mortar school, however the nature of a cyberschool requires these leaders to act on these tasks differently. Some of these issues have also been suggested by Berg and Clark (2005) who noted that cyberschool leaders need to understand stakeholder needs, assess readiness, and create a vision of learning. Further, these findings mirror those of Buchanan (2013) who found that leaders of K-12 online programs tend to focus on ongoing collaboration with stakeholders, dialogue, and creating a shared vision for the organization.

Woven throughout the perceived differences between cyberschool leadership and brick-and-mortar school leadership is the notion that technology can transform how leaders interact with students; how leaders evaluate, supervise, and professionally develop their teachers; and how leaders operate on a day-to-day basis. As evidenced by the

cyberschool leaders in this study, technology can be used to focus on instructional leadership in their day-to-day operations in ways that are not easily afforded in brick-and-mortar environments. Technology enabled these cyberschool leaders to gain a comprehensive and contextual picture of the growth and needs of their instructors and students. The leaders of cyberschools discussed being able to provide customized, just-in-time feedback that teachers can implement immediately. This is perhaps the most transferable of all of the lessons learned by these cyberschool leaders. As digital technology becomes increasingly ubiquitous in schools, leaders need to find better ways to utilize them as mechanisms to increase instructional quality. A data-driven system that helps to evaluate and remediate teachers in real-time could make a significant difference in providing formative evaluation that is meaningful and relevant to teachers.

This study illuminates the need for more research on cyberschool leadership. Potential future research studies include: investigating motivators for pursuing this career path; how leaders are chosen from the hiring agents' perspective; whether the roles were filled by appointment, volunteering, or external formal candidate search; and whether those with non-cyber experience prefer being a cyber leader or a brick-and-mortar leader. The field of educational leadership is greatly served by better understanding this career path and those leaders who opt to embark upon this journey. Given that this field is burgeoning and rapidly changing, it is imperative that we remain current on its needs.

The current study confirms what other authors have found regarding innovation and technology. First, a technology mindset might be best facilitated in pre-service leadership preparation programs (LaFrance & Beck, 2014; McLeod, Bathon, & Richardson, 2011). In short, leadership preparation programs are not preparing leaders to lead innovative models of schooling such as cyberschools. Based on the literature, our experiences in educational leadership programs, and the findings from this study, it is evident that pre-service educational leadership programs are not meeting the needs of modern, digitally infused schools, especially cyberschools. By better understanding this nascent field, university preparation programs can create learning experiences that prepare both brick-and-mortar school leaders as well as cyberschool leaders. University leadership programs can address the needs of the field by incorporating online learning experiences into the curriculum, mandating cyberschool internships, and focusing on differences leaders will experience if they pursue a cyberschool leadership position.

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