Analyzing High School Administrators' Knowledge and Confidence to Provide Instructional Leadership in Digital School Environments

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Abstract

The purpose of this study was to examine high school administrators' perceived knowledge and confidence to lead in a digital school (one-to-one classroom) environment. This study utilized the 62-item Digital Instructional Leadership Readiness Instrument (DILRI; Taylor & Shepherd, 2016) to measure high school administrators' knowledge and confidence to lead in a digital school environment. High school administrators within the target school district completed the DILRI at two separate points in time: September 2016 and June 2017. Based on these two administrations, this study's three research questions were answered. Based on the data collected, Experience Supervising Others and Colleagues were the two factors the surveyed high school administrators ranked as influencing their knowledge and confidence. Additionally, high school administrators indicated they perceive themselves to be knowledgeable and confident in developing digital school culture factors of Leadership Teams, Empowering Teachers, and Shared Vision. This study provides administrators, directors, school boards, superintendents, and other school district leaders with relevant information relating to the self-reported readiness of high school administrators to lead in a digital school environment.

Keywords: digital instructional leadership readiness, principal preparation, digital leadership, digital school culture.

Introduction

During the 2016–2017 academic year, all high schools in a large central Florida school district transitioned to using one-to-one technologies as the primary method for instruction. This study provided administrators, directors, school boards, superintendents, and other school district leaders with relevant information relating to the self-reported knowledge and confidence of high school administrators to lead a digital school. To date, most of the computer technology training has focused primarily on teacher preparation, leaving a large gap concerning high school administrators' preparation in becoming technology leaders. This study may assist in providing school districts with information relating to certain digital components that school administrators feel unprepared to utilize in their leadership; thus, school districts could create and provide future professional development which may help to increase the self-reported readiness level for school administrators leading a digital school. Results from this study facilitated school district officials by providing scholarly suggestions on how to create and provide future professional development that may help to increase the self-reported readiness level for school administrators leading a digital school. Given the 2016–2017 circumstance of the 19 high schools within the large urban school district in central Florida becoming fully digital, it is imperative that administrators have

adequate training, are confident with digital technologies, and are prepared to lead in such a one-to-one school setting.

Purpose

The purpose of this study was to identify and analyze the factors that high school administrators in a large urban school district perceived to influence their knowledge and confidence to lead in a digital school (one-to-one classroom) at the beginning and end of the first school year when digital technologies were to be the primary method of learning. The International Society for Technology in Education (ISTE, 2015) defines one-to-one initiatives as being where there is "one device, usually a laptop or tablet, for each student" (p. 1). Prior to this time, digital technologies were not used as the primary tool for learning in all 19 high schools. Findings generated from this study could assist school district-based administrators and school-based administrators who may be considering starting a one-to-one initiative within their school district and/or school. These findings may also help to support and prepare current or future digital school leaders on how to collaborate in building digital environments that develop and maintain high quality and rigorous educational programs.

Research Questions

Three research questions were crafted to help understand what factors contribute to high school administrators' self-reported knowledge and confidence to lead digital schools within a large central Florida school district. Research Questions 1–3 have been placed in order of increasing importance as they relate to school administrators' recognition, influence, and application of factors.

1. What factors do high school administrators perceive to have influenced their knowledge and confidence in their ability to lead in a digital school environment?
2. What factors are perceived as being stronger influences for high school administrators' knowledge and confidence?
3. How knowledgeable and confident are high school administrators who are leading a digital school environment in their ability to develop a digital school's culture and norms?

Review of Literature

School administrators should be some of the most well-versed individuals within a school environment so they can effectively model and support technology (Dexter, 2011; Jones & Dexter, 2018; Schrum & Levin, 2016; Williams, 2008). Even though current research suggests that school administrators' leadership is crucial for promoting the use of technology in schools, there remains a gap in the research concerning administrators' readiness to lead in a digital school (one-to-one classroom) environment (McLeod, Richardson, & Sauers, 2015), predominantly those factors that may influence an administrators' knowledge and confidence to lead in such an environment. To act as an effective instructional leader, it is crucial that school administrators have the knowledge and training to recognize effective instruction and settings within the digital environment, in a similar fashion as they are expected to oversee in a non-digital environment (Keengwe & Onchwari, 2011; Ertmer & Ottenbreit-Leftwich, 2010). School leaders who exhibit digital instructional leadership behaviors will foster school-wide success by creating a culture that is methodically developed, supportive, and encouraging for all individuals to trust in the technology process and the organization's knowledge base (Green, 2010; Ismail, Khairuzzaman, Nor, & Marjani, 2009; Scott-Young, 2009). Understanding how to best lead in such an environment, within the digital age, remains a relevant topic and is essential for creating

successful digital high schools (Eveleens, 2010; Oren, 2009; The Standish Group, 2011; Warschauer, Zheng, Niiyam Cotton, & Farkas, 2014).

Methods

The study was designed through the lens of an exploratory survey study approach to analyze the self-perceived readiness and confidence of high school administrators to lead in a digital school (one-to-one classroom) environment. This study was not intended to evaluate the result from a single intervention. During the school year, and throughout the course of this study, no formal intervention was in place. While this study was occurring, the school district did provide general support and feedback to aid high school administrators. Thus, the study's design included two administrations of the same survey to analyze if (and possibly to what extent) high school administrators' self-perceived knowledge and confidence to lead in a digital school environment (e.g. supervising teachers, observing students, collaboration with teachers and other administrators, and professional development) changed over the course of a year and to further analyze what had the greatest impact on their knowledge and confidence.

This study utilized the 62-item Digital Instructional Leadership Readiness Instrument (DILRI; Taylor & Shepherd, 2016) to measure school administrators' knowledge and confidence to lead in a digital school environment. Participants selected for this purposive sample were chosen based on the criteria that they were currently employed public high school administrators (Grades 9–12) who were leading in digital school environments in the target, central Florida, school district.

High school administrators within the target school district were requested to complete the DILRI at two separate points in time: September 2016 and June 2017. During the September 2016 survey window, approximately 125 high school administrators were employed by the school district. From that population, 76 high school administrators completed the survey. The September 2016 survey administration had a response rate of 61%. Then, on the second survey in June 2017, 69 high school administrators responded to the survey from a total sample of 119 high school administrators. Thus, the June 2017 survey administration had a response rate of 58%.

To answer Research Question 1, frequencies and percentages were calculated for DILRI items one and two. These items relate to the 11 factors that may have influenced their knowledge and confidence: colleagues, experience supervising others, graduate course work, instructional coaches, professional conferences, professional development, professional practice, readings, supervisors, workshops, and other. To answer Research Question 2, the 11 factors were then ranked by the participants to determine the most and least influential factors. Factors were ranked from 1 to 11 with 1 being the most influential and 11 being the least influential. An overall rank across the school year's two survey administrations was also calculated by combining ranks from both DILRI administrations. For Research Question 3, means and standard deviations were computed and reported for the four-point Likert scale scores pertaining to knowledge and confidence in developing a digital school's culture and norms. The factors for the 10 items were: Community Support, Motivating Stakeholders, Resource Allocation, Learning Communities, Leadership Teams, School Improvement Teams, Knowledgeable About the Feature Set, Leading by Example with Technology, Empowering Teachers, and Shared Vision. The first four-point Likert scale had ranges relating to knowledge as follows: 1 (Not Knowledgeable), 2 (Somewhat Knowledgeable), 3 (Knowledgeable) and 4 (Extremely Knowledgeable). Then, pertaining to confidence, the following Likert scale ranges were used: 1 (Not Confident), 2 (Somewhat Confident), 3 (Confident) and 4 (Extremely Confident).

Results

Research Question 1

Responses indicate that Colleagues and Experience Supervising Others were recognized consistently by at least 47% of participants on both DILRI administrations as being influential toward furthering their knowledge and confidence. In fact, upon closer examination, it is evident that the lower number relating to Experience Supervising Others (Confidence, 47%) was isolated to the September 2016 administration but then increased by 7% for knowledge and 12% for confidence on the June 2017 administration. This was the highest percentage increase for any factor between the two DILRI administrations. Given that this was the first school year for most of the high school administrators to be in a completely digital school environment, the notion that most of the participants gained experience over the course of the school year which helped to increase their knowledge and confidence by the June 2017 DILRI administration further supports these results. This increase in Experience Supervising Others could be a result of facilitating classroom walkthroughs, teacher evaluations, lesson plan reviews, and in other interactions in which high school administrators were engaged.

Research Question 2

The findings from Research Question 1 are further supported by the results from Research Question 2. Colleagues and Experience Supervising Others were mentioned most frequently and in the greatest percentages by participants as being influential in their knowledge and confidence to lead in a digital school environment. Additionally, based on the data calculated from DILRI item three, both Colleagues and Experience Supervising Others were also ranked as being the two strongest influential factors. On the September 2016 DILRI administration, Colleagues was ranked as the strongest factor of influence with a mean of 3.02. Experience Supervising Others was the second strongest factor of influence with a mean of 3.52. Then, on the June 2017 administration of the DILRI, the ranks reversed for Colleagues and Experience Supervising Others. Experience Supervising Others was ranked as the strongest factor of influence with a mean of 3.24, and Colleagues was the second strongest factor of influence with a mean of 3.78.

These findings indicate that not only are Colleagues and Experience Supervising Others perceived to be factors of influence, but it is also clear that these two factors are the most influential. Further, support for this notion is confirmed given that participants selected Colleagues and Experience Supervising Others both times as the top two choices, even after nine months between DILRI administrations. One possible reason for this could be contributed to the very nature and job duties that belong to an administrator: observing the behaviors and patterns of other educators. Being an administrator requires an individual to supervise teachers. During this process, it is likely that an administrator would gain some knowledge by observing professional practice.

Research Question 3

The research findings for Research Question 3 reveal that on the September 2016 administration of the DILRI, the two culture factors that scored the highest on the knowledge scale were Empowering Teachers (*M*=2.98) and Shared Vision (*M*=2.98). All the knowledge factors fell within the "Somewhat Knowledgeable" level (2.0–2.99). For confidence on the September 2016 DILRI administration, Empowering Teachers carried the highest mean with a mean of 3.00. All the remaining nine culture factors fell within the "Somewhat Confident" level (2.0–2.99). It is important to note that Empowering Teachers was the only culture factor on the September 2016 DILRI as having a mean within the "Knowledgeable" level (3.0–3.99). This finding may suggest

that prior to leading in a digital school environment, administrators relied more on their ability to act as instructional leaders or transformational leaders to influence their knowledge and confidence for Empowering Teachers and Shared Vision.

Upon examination of the June 2017 administration of the DILRI, the culture factor with the highest mean for the knowledge level was Leadership Teams with a mean of 3.13. In addition to Leadership Teams, three more of the ten knowledge factors fell within the "Knowledgeable" level (3.0–3.99): Learning Communities, Empowering Teachers, and Shared Vision. For confidence on the June 2017 DILRI, the culture factor with the highest mean was Empowering Teachers with a mean of 3.16. There were also two more culture factors that fell within the "Confident" level (3.0–3.99) for confidence: Leadership Teams and Shared Vision. Upon further examination into the June 2017 administration of the DILRI, it was discovered that all 10 of the culture factors' means increased from the September 2016 administration to the June 2017 administration of the DILRI.

On both the September 2016 administration and June 2017 administration of the DILRI, Leadership Teams, Empowering Teachers, and Shared Vision were the top three highest rated factors on both knowledge and confidence scales. Though all 10 factors increased between September 2016 and June 2017, this finding suggests that school administrators consistently perceived themselves to have more knowledge and confidence to recognize these three factors than they did any of the others. Given the consistency of this finding, it might suggest that school administrators already perceived themselves to be instructional leaders and transformational leaders before completing the September 2016 DILRI, and carried that perception through to the June 2017 administration. The increase might also reflect that administrators are continuing to make the shift toward becoming technology leaders as well as instructional leaders and/or transformational leaders.

Resource Allocation was observed to have the greatest increase among all culture factors on both knowledge and confidence scales between the September 2016 and June 2017 DILRI administrations. On the knowledge scale, Resource Allocation increased from a mean of 2.38 in September 2016 to 2.82 in June 2017, a difference of 0.44. Then, on the confidence scale, Resource Allocation increased from a mean of 2.43 in September 2016 to 2.78 in June 2017, a difference of 0.35. Given the nature of a digital school environment, certain digital tools and resources are required in order for a school to perform successfully. This finding is encouraging since the ISTE (2018) standards (visionary planner, empowering leader, connected leader, and systems designer) all note the importance for a school administrator to be able to ensure adequate resources are available for students.

Conclusions

The findings from this study reveal that over the course of the school year, the high school administrators' perceived knowledge and confidence increased for all scales of the DILRI. This overall increase in perceived knowledge and confidence suggests that high school administrators became progressively more familiar and aware of their roles to act as instructional leaders in the digital school (one-to-one classroom) environment. These results further imply that administrators were able to transfer their leadership and administrative expertise from a non-digital to a digital environment. The notion that it took time to develop expertise in recognizing and giving feedback for teaching and learning in a digital environment is evident as is that administrators, teachers, and students all learned from one another. Practicing leadership within a digital environment was supported by colleagues, supervising others, and professional development.

Findings from this study indicate that current high school administrators leading within a digital school (one-to-one classroom) environment found a great deal of benefit when reflecting on their current knowledge and confidence to act as digital instructional leaders, as both knowledge and confidence are important. Administrators should seek out professional development opportunities, collaboration opportunities with knowledgeable and confident colleagues, and opportunities to supervise others as these three were indicated as being the most influential factors affecting this study's high school administrators' knowledge and confidence.

Summary

Based on the data from this study, high school administrators leading within a digital school (one-to-one classroom) environment should reflect on their current knowledge and confidence to act as technology leaders within the digital school environment. These administrators should seek out professional learning opportunities, knowledgeable and confident colleagues, and opportunities to supervise others. Such opportunities were ranked as the most influential by participants for influencing knowledge and confidence. Additionally, such opportunities will allow for school administrators to increase their knowledge and confidence of school culture factors. This would further aid in developing their ability to provide feedback and coaching for teachers who use technology as their primary method for instruction. Digital school environments do not carry any innate impact on their own, rather they must be paired with effective pedagogy from digital instructional leaders who are knowledgeable and confident in the role.

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