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Perceptions of K-12 Principals Regarding Integration of Technology into the Curriculum

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This is to certify that the doctoral study by

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Abstract

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

The research problem was that K-12 school principals struggled concerning integration of technology into the curriculum (ITC). The purpose of this basic qualitative research study was to explore perceptions of K-12 school principals concerning ITC. The conceptual framework was the Hallinger and Murphy model focusing on institutional management, including school goals for principals to frame and communicate to school personnel. Perceptions of K-12 school principals concerning ITC were addressed. Data were collected using semistructured interviews via Zoom. The sample was 10 K-12 school principals who were purposively selected. These participants had at least 3 academic years in their jobs. Thematic analysis was used to analyze interview transcripts, and four themes emerged. Findings showed that participants implemented leadership practices concerning ITC, facilitated positive student achievement to overcome learning challenges, used funding for technology, and defined or revised the school mission to include ITC. It is recommended for K-12 school principals to implement leadership practices concerning ITC, seek funding for purchasing computer hardware and software, facilitate positive student achievement to overcome learning challenges, and redefine the school vision. Positive social change may result from these recommendations that may assist K-12 school principals in terms of addressing ITC for students to pass state tests and graduate from school.

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Dedication

I dedicate this dissertation to colleagues, friends, and family members.

Acknowledgments

I acknowledge the support I received from Dr. Peter Kiriakidis during this doctoral journey.

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Chapter 1: Introduction to the Study

The research problem was 85 K-12 school principals struggled with integration of technology into the curriculum (ITC) at the schools under study. Principals should use educational technologies (Uğur & Koç, 2019). Also, principals should be supporting learning environments (Vogel, 2018). Education is a field where technology can be used to improve overall experiences for teachers and students (Ross & Cozzens, 2016). Morgan and Nica (2020) said school leaders should comprehend what technology integration entails. The purpose of this basic qualitative research study was to explore perceptions of K-12 school principals concerning ITC. I present the study background, problem, and purpose statements in this section.

Background

Educational technology is used to enhance students' learning. Technology is used in schools as an educational tool to help students with learning (Uğur & Koç, 2019). School principals should enhance the school environment (Vogel, 2018). Also, principals should promote technology in the classroom as leaders of technology (Akram et al., 2018). Technology offers learners the opportunity to acquire educational skills and apply knowledge to academic subjects. Technological skills are needed to obtain jobs. School principals should have critical skills in supporting efforts of teachers to implement various technological tools in the learning process (Taylor Backor & Gordon, 2015).

Principals' insufficient knowledge regarding technology hinders school districts from learners to other teachers. Principals who embrace the instructional leadership approaches focus on quality of instructions offered by teachers. School administrators

should embrace technology and be experts in terms of applying technology in the schools (Mette et al., 2015). Uğur and Koç (2019) said principals struggle to support implementation of certain technological tools in school due to negative perceptions about them. Akram et al. (2018) said principals struggle with implementation of instructional leadership in implementing technology in schools. Principals should encourage integration of educational technology in schools (Berkovich & Bogler, 2020). Uğur and Koç (2019) recommended that school principals should be at the forefront of implementation of technology in classrooms. Vogel (2018) said instructional leadership entails a school leader setting goals that are clear.

Problem Statement

School principals' leadership practices could predict technology integration in the classroom (Bellibas & Liu, 2017). Kalkan et al. (2020) said principals should focus on educational technologies in schools. School principals should help students learn with educational technologies (Ross & Cozzens, 2016). Vogel (2018) said principals' leadership practices affect student achievement . School principals should not be challenged concerning technology integration into the curriculum (Wyatt, 2017). Also, principals should have the capacity to support technology use in the classroom (Boyce & Bowers, 2018). Uğur and Koç (2019) said school principals are struggling with new technologies. Levin and Bradley (2019) said school principals should learn about emerging technologies. Principals may lack skills to integrate technology into classrooms (Yavuz, 2016).

School principals have inadequate knowledge and understanding of educational technologies (Akram et al., 2018). School principals' decisions can affect technology integration (Dexter & Richardson, 2020). Principals should integrate technology for students to increase their state test scores (Harris et al., 2016). Student achievement depends on support of principals (Sanga, 2016).

The research problem was K-12 school principals struggled with ITC. The research site was a school district located in the southeastern United States and had 50 elementary, 15 middle, and 21 high schools. K-12 principals struggled with ITC. K-12 principals experienced difficulties concerning technology integration . K-12 principals had requested support concerning technology integration into the curriculum .

Purpose of the Study

ITC is an obligation of school leaders. Kalkan et al. (2020) stated that school principals should support ITC. Boyce and Bowers (2018) said school leadership affects technology-based learning in the classroom. Principals may not have the necessary skills to integrate technology into classrooms. I collected qualitative data via interviews to answer the research question. I did not collect numeric data. The purpose of this basic qualitative research study was to explore perceptions of K-12 school principals concerning ITC at the schools under study.

Research Question

RQ: What are the perceptions of K-12 school principals concerning ITC?

Conceptual Framework

This study involved evaluation and supervision of instructions and coordinating the school curriculum. I used the instructional leadership model as the conceptual framework. This model was established by Hallinger and Murphy. One of the critical roles that principals play through leadership is defining the school vision. This includes school goals for principals to frame and communicate those goals to school personnel. School principals have the responsibility to monitor students' progress. In addition to these responsibilities, the principal protects both instructional time and professional development. I used components of the instructional leadership model to develop interview questions. I describe the instructional leadership model in more detail in Chapter 2.

Nature of the Study

I did not collect numeric data. Therefore, a quantitative method was not selected. Other methodologies were considered but not selected. I did not use ethnography or phenomenological designs. I used purposive sampling to identify K-12 school principals.

An advantage of qualitative interviews is the potential to collect in-depth insights from interviewees. Cassel and Bishop (2018) said qualitative interviews enable the researcher to collect in-depth insights about the topic, opinions, feelings, and sentiments about the phenomenon under research. Use of interviews promotes collaborative dialogue with interviewees, making it possible to seek additional clarification (Percy et al., 2015). Qualitative data can be collected via interviews (Ravitch & Carl, 2016).

Definitions of Key Terms

Instructional leadership: When leaders get involved in curricular issues that directly impact learning. Leadership for school principals involves evaluations, maintaining facilities, and getting involved in different aspects of learning (Bousbahi & Alrazgan, 2015).

Assumptions

As applies to this research, assumptions denote aspects any researcher assumes to be true without concrete empirical evidence. First, the process of collecting information from the participants was voluntary. I assumed participants provided honest responses and used leadership practices concerning ITC.

Scope and Delimitations

A number of delimitations were evident in the current study, which could have affected the final study outcomes. The study was delimited to a small number of participants. Participants could have had other commitments that may have affected their response rates.

Limitations

Limitations are potential weaknesses of research. The basic qualitative research design was a limitation. Although the study population was 85 K-12 principals, only 10 agreed to participate in the study. I was the data collection instrument who developed the interview questions. Another limitation was I did not interview schoolteachers or staff. I used a data collection process to interview participants from elementary, middle, and high schools.

Significance

Knowledge and skills in technology are needed for middle and high school principals to lead educational settings that are rich in technology. The main reason why K-12 school principals lack technology-based knowledge is issues with identifying needed technology and how to manage it. With the classroom atmosphere turning obsolete, technology is required to boost activities such as learning and reading. These findings may assist K-12 school principals to make decisions concerning ITC. Positive social change may result from recommendations that may assist K-12 school principals to address ITC for students to pass state testes and graduate from school.

Summary

The purpose of this basic qualitative research study was to explore perceptions of K-12 school principals concerning ITC. The nature of this study, key term definitions, limitations, scope, delimitations, and assumptions and significance of the study were presented. In Chapter 2, I present the literature review.

Chapter 2: Literature Review

The purpose of this basic qualitative research study was to explore perceptions of K-12 school principals concerning ITC. Technology in the education sector has contributed to student achievement. Technology is a significant factor in terms of student achievement as it influences individual motivation for learning and school participation (Harris et al., 2016). According to Ross and Cozzens (2016), education is a field where technology can be used to improve overall experiences for teachers and students. School principals often encounter challenges when implementing technology integration in classroom curricula. Technology contributes toward school performance (Kormos, 2018).

Literature Search Strategy

Google Scholar, Research Gate, Science Direct, and EBSCOHost were used as databases for this study. Identification of appropriate articles was achieved through use of different keywords and phrases. I used the following search terms: *technology, integration of technology, technology integration, school principals and technology integration, instructional leadership, leadership, instruction, technology integration in schools, school technology, instructional leadership for technology integration, principals' perceptions of technology,* and *integrating technology into the school curriculum*. All sources were published between 2015 and 2021 and published in English.

Conceptual Framework

The Hallinger and Murphy model was used to conduct this study. In 1985, Hallinger and Murphy sought to identify factors that influence learning. The Hallinger and Murphy model is used to clarify principals' roles and obligations while maintaining

close working relationships with superintendents, teachers, and other stakeholders (Heaven & Bourne, 2016). One of the critical roles that principals play through leadership is defining school vision (Gumus et al., 2018). Communicating and framing school goals are components of the model. There are instructional leadership practices that are central to technology integration, such as setting a clear vision for the school as well as ensuring that there is consistency and quality in terms of adapted technology programs in classrooms.

Howard and Mozejko (2015) said to develop a learner-centered technology curriculum in the classroom, principals should apply instructional leadership practices to inspire staff and faculty to promote efforts involving technology programs that support high academic achievement among students. Also, principals are required to use leadership to facilitate dialogue on technology integration in the classroom. They should promote technology integration in the classroom (Hitt & Tucker, 2016).

Managing instructional programs involves principals monitoring academic progress of students. Principals evaluate teachers concerning their practices in order to supervise instruction in schools. Principals also coordinate school curricula. Dexter and Richardson (2020) said school principals have a duty to establish cultural expectations necessary to promote technology integration in classrooms. Henrie et al. (2015) said principals who made regular visits to classrooms and interacted with teachers and students concerning technology integration enhanced positive approaches focused on technology integration into the curriculum.

Developing a school learning program is another component of the model, which includes instructional leadership practices and modern students' learning outcomes are largely shaped by technology in school settings. Principals who are regarded as effective in terms of developing technologically conducive learning environments consider the importance of daily interactions, values, and beliefs within school communities (Price et al., 2015). Instructional leaders communicate and define instructional deliverables that technology in the classroom needs.

Literature Review Related to Key Concepts

I present literature on instructional leadership practices among principals, attitudes towards technology, and support for teachers. I synthesize research objectives, methods, findings, and conclusions from past studies, in addition to assessing how past literature relates to the current study in terms of instructional leadership practices for principals in schools. An obstacle to integrating technology into classrooms results from inadequate knowledge about instructional leadership practices among school principals. Uğur and Koç (2019) said K-12 school principals are apprehensive about technology integration in the classroom. Uğur and Koç stated that for school principals to achieve successful ITC, they should develop leadership skills. Thus, leadership skills need to be developed by principals.

The nature of the school environment can influence the principal's decision to use instructional leadership practices with technology integration within the classroom. Yavuz (2016) observed similar observations in their longitudinal study, which investigated how school principals engaged in instructional leadership practices when

integrating technology in the school setting. Weber (1987) examined four urban schools that have poor reading achievement among their students. Results from the four schools revealed that high performance was recorded when all schools had a higher expectation for their students. The findings of Weber (1987) are critical in examining ways school principals can facilitate positive student achievement and overcome learning challenges. Hallinger and Murphy (1985) mentioned that an effective school is where 40% of learners are African Americans and where students demonstrate achievement, including minority students being free from the effects of desegregation. However, being effective does not imply that all students must achieve similar mastery levels, but that learners from diverse social classes have equal chances of their lowest and highest levels of learning mastery.

Literature revealed that most school principals lack experience in facilitating instructional leadership practices. Bartlett (2008) said K-12 principals lack skills in instructional leadership practices. In subsequent years, the education ministry in the United States launched the concept of instructional leadership to give a detailed approach to how principals should lead their schools. Principals' instructional leadership, visibility management, collaboration and communications, and hands-on-leadership skills affect technology use in schools (Jackson, 2018). Jackson (2018) said even if school principals show a willingness to integrate technology, one should consider professional insights to help them attain adequate technology integration in the classroom.

Principals need to implement instructional leadership practices concerning technology integration into the curriculum. Underwriting the above considerations, it can

be pointed out that as technology progresses in the education sector, principals' leadership practices need to be developed, improved, and anchored on instructional leadership practices from effective technology integration in the classroom. Bellibas and Liu (2017) stated that principals' practices predict technology integration. Thus, technology integration in the classroom depends on principals' instructional leadership practices. Kalkan et al. (2020) reported that principals with adequate knowledge of instructional leadership practices are highly effective in championing successful technology uptake in their respective high schools. School principals influence technology-based learning (Boyce & Bowers, 2018).

Principals may not have the skills to use educational technologies. Ross and Cozzens (2016) examined teachers' perceptions concerning school principals' leadership practices in technology uptake within schools. Considering the high competition in education, the traditional classroom atmosphere is becoming obsolete as learners prefer virtual and online learning classrooms. Henrie et al. (2015) examined how local school principals build data-driven instructional systems through the development of new systems using existing functions and information flow. Henrie et al. found that principals should consider how they can engage in different instructional leadership practices when involving students and teachers to create data-driven instructional systems. Henrie et al. revealed that when instructional leadership practices are used effectively by school leaders, leaders enable information flow to reduce hurdles that can hinder technology integration in the classroom. Yavuz (2016) cautioned that school principals who fail to embrace technology integration have a detrimental negative impact on their schools, such

as reduced enrollment rates as students can access learning materials through online education channels. Taylor Backor and Gordon (2015) revealed that achieving, such objectives would require principals to use instructional leadership practices in deriving the required technical skills in their institutions.

School principals encounter challenges when introducing technology in their schools. Vogel (2018) conducted systematic research in North Carolina on school principals' challenges when integrating technology into the curriculum. Gürfidan and Koç (2016) demonstrated that instructional leadership practices can support or hinder technology use in the classroom.

In the current information age, school principals should seek to transform their learning institutions. Principals are viewed as visionary leaders and should have the capacity to use technology in management and embrace the tenets of instructional leadership practices (Boyce & Bowers, 2018). Principals may still need time to learn and comprehend their expectations and roles as instructional leaders before they can facilitate technology integration in their schools (Callaway, 2017). Thus, school leaders need to implement instructional leadership practices concerning technology integration into the curriculum.

Principals should focus on developing and advancing new technological skills. There is a need for personal advancement through different professional development initiatives (Bellibas & Liu, 2017). According to Sterrett and Richardson (2020), leaders need professional development on digital principal leadership. In most cases, administrative training programs fail to teach principals how to effectively integrate

technology and the role instructional leadership practices play in the entire process. In summation, literature research revealed that new efforts have to be made to address the current gap between the principal's technological skills and TIC. The instructional leadership practice was also noted to impact staff development and improve the relationship between students and teachers (Brown & Chai, 2012). Ross and Cozzens (2016) conducted quantitative research to assess how teachers perceived the leadership behaviors of their principals. The surveyed teachers agreed that principals must have effective leadership skills to stimulate student performance. Effective leadership behavior largely empowers principals and teachers to identify central competencies that link teachers with students (Henrie et al., 2015).

Principals face challenges concerning technology integration into the curriculum. Critics point out that high expectations for school principals in terms of performance as instructional leaders, in addition to diverse school improvement goals, create a feeling of failure for most principals (Wyatt, 2017). Principals are involved in facilitating student outcomes, assessing textbooks, budget allocation, transferring teachers, and unplanned distractions and interruptions, making them occupied to focus on instructional issues (Henrie et al., 2015). Henrie et al. noted that students can be taught by a teacher from another country via electronic books, teleconferences, or other online learning forums that further contribute to tailored learning. School principals require technological and leadership skills essential when promoting technology integration and facilitating student performance. Principals' knowledge of technology-driven insights is a key concern in the literature.

Instructional leadership practices affect technology integration into the curriculum. There is a gap in knowledge concerning technology integration in classrooms. Technology integration through instructional leadership facilitates positive development in classroom teaching and learning. Berkovich and Bogler (2020) observed that principals use best practices to integrate educational technologies. Berkovich and Bogler revealed that promoting instructional leadership practices is essential in ensuring successful ITC. Vogel (2018) observed that principals may express interest in ITC. Akram et al. (2018) elaborated that as instructional leaders who must oversee the integration of technology in their schools, principals should have knowledge about technological operations to adequately promote its integration among teachers for classroom instruction and students for higher attainment. A growing body of literature reveals that administrative support and positive attitudes among principals is essential to technology integration in the classroom (Berkovich & Bogler, 2020). Therefore, with the advancement of technology, there is a need to update the principals' skill sets in a manner that keeps them at pace with the evolving learning environment. Wyatt (2017) revealed continued challenges to effective leadership practice in technology integration in schools. Wyatt revealed that principals do not comprehend their role as instructional leaders, and especially when considering the issue of technology integration.

The literature revealed that maintaining focused leadership roles in technology integration in schools should enable principals to keep their schools competitive while facilitating higher academic achievement among their students. Uğur and Koç (2019) agreed that maintaining firm leadership roles in technology integration would enable

principals to keep their schools current and facilitate their academic achievement among their competitors. Thus, leadership roles affect technology integration into the curriculum.

Principals expressed concerns that they did not have sufficient preparation and professional leadership to lead technology integration. School principals need to be prepared to handle technological innovations in the classroom. Similar academic achievements and outcomes among principals who use instructional leadership have also been reported (Wyatt, 2017). Brown and Chai (2012) conducted a longitudinal study, and stated that some technical challenges and leadership limitations that principals' experience are compounded by school obligations. Boyce and Bowers (2018) noted that productive and efficient principals keep pace with the latest educational technologies. Considering the current era of principals' accountability for their students' academic achievement, Hallinger and Murphy (1985) observed that there has been renewed focus on school principals to embrace a new role as instructional leaders to facilitate modern learning concepts (e.g., key among them technological integration to students' learning). Boyce and Bowers (2018) conducted empirical research.

School leaders should manage technology integration (Johnson & James, 2018). For example, Wyatt (2017) said that instructional leadership contributes to technology integration into the curriculum. Levin and Bradley (2019) emphasized that effective use of instructional leadership among school principals would require individual leaders to learn about emerging technologies and develop new skills on virtual and online learning to develop a complementary curriculum when integrating technology in the classrooms.

These insights further emphasize the need to ensure continuous learning and skills development on effective instructional leadership practices.

Principals need professional development in technological areas they are less competent in, which is an aspect that needs to be available for them as a way to allow them to become more visionary leaders when aspiring to handle a highly digitized 21st century learning environment. Jackson (2018) further pointed out that principals who implement instructional leadership practices develop school vision, mission, and objectives, and direct staff to work towards the realization of the proposed goals. Thus, principals should be facilitating the school vision.

Technology integration in schools is facilitated by school administrators. Technology integration among school principals appears to be informed by their leadership styles where conservative principals are less likely to adopt technological innovations compared to principals who display progressive leadership styles, such as transformational leadership which aligns with instructional leadership in terms of transforming schools to attain high academic achievement. Johnson and James (2018) noted that principals who tend to support technology integration are largely characterized by being: (a) charismatic school community leaders, (b) instructional leaders, (c) strategic leaders, and (d) highly organized leaders.

Although supportive principals towards technology innovation have the above traits, researchers indicate that principals must be technology leaders to have within their capacity perceptions that promote technology integration in their classrooms. Johnson and James (2018) stressed that the lack of positive attitude and quality leadership

strategies concerning technology integration needs can obstruct the integration of online learning in the classroom. Having in place principal support is central to successful technology integration in the classroom. These findings reveal that principals' level of support for technology integration depends on their skills and knowledge about instructional leadership practices. Technology leadership is anchored in instructional leadership. School leaders should support technology integration. Ross and Cozzens (2016) showed that schools with deficient perceptions towards technology had limited support for its integration within the classrooms. Ross and Cozzens found a significant relationship among tenure, experience, and technology integration, although perceptions to support technology integration were a strong significant factor for increased technology uptake in school classrooms. Ross and Cozzens noted that the lack of core competencies in instructional leadership practices among principals has affected effective technology integration as principals had limited knowledge on their skills to lead the transformational learning process in schools pegged on technology.

There are potential barriers that have been reported to impact the principal's positive perceptions and support for technology integration. Johnson and James (2018) elaborated that the main concern is about leading the learning and teaching processes to align with the new technology-based classroom instruction. The various barriers to technology integration are inadequate leadership strategies within the school environment, inadequate resources and funding (Uğur, & Koç, 2019), ineffective visions by principals fail to visualize the importance of technology integration, lack of infrastructure to handle professional development for principals and teachers (Bowman et

al., 2020; Deschaine, & Jankens, 2017; Dexter & Richardson, 2020). Thus, school principals face barriers that affect their perceptions concerning technology integration.

The literature elaborated on potential challenges that contribute to slowed technology integration in schools, including support and cost of education. Johnson and James (2018) noted that funding is a big barrier in the technology integration process, especially when considering the initial stages of purchasing equipment, software, and hardware components. Wyatt (2017) noted that another challenge principals experience when integrating technology in their school's curriculum is the lack of tools and support in terms of leadership, time, and money. Jackson (2018) shared that considering the potential barriers to principals' integrating technology, the main challenge is how school principals can amass support for funding from various sources. Therefore, potential challenges contribute to technology integration in schools.

Realizing technology integration demands that stakeholders understand that principals experience challenges when seeking financial support and resource allocation. For example, Johnson and James (2018) noted that principals have limited time to create and submit grant applications. Integrating technology also requires budgetary allocation to maintain them and hire experts to run the information technology issues within the school, further raising the costs. School reforms towards technology adoption must have important characteristics, such as being progressive, creating expectations and needs, remaining committed and compliant, being modeled and visible among teachers, and being comprehensive. Ross and Cozzens (2016) elaborated those principals need to have important aspects for the successful integration of educational technologies: (a) create

teacher buy-in for educational technologies, (b) provide leadership that directs and assists teachers in being proactive about technology, (c) provide interim assessment for staff to explore technology requirements, (d) plan a professional framework for curriculum development, and (e) take into consideration diverse learning strategies to diversify learning.

Summary and Conclusions

The current literature review involved instructional leadership practices that affect technology integration among school principals. Findings from literature revealed that instructional leadership practices have a significant effect. School principals continue to encounter diverse challenges compared to their predecessors. Claro et al. (2017) said with the emergence of technology in schools, principals have to perform like technology leaders and use instructional leadership practices to achieve required technology integration goals. However, most efforts by principals to deliver on technology integration have not been successful due to various individual, technology, and school environment factors that deter their progress (Wyatt, 2017). Furthermore, principals also lack necessary technical skills and knowledge about instructional leadership practices (Henrie et al., 2015). High initial costs of investment and insufficient support from principals in terms of resource allocation and funding are other challenges principals encounter when attempting to integrate technology in their classrooms. Instructional leadership practices are critical in terms of resolving ITC challenges. In Chapter 3, I present the research methodology.

Chapter 3: Research Method

The purpose of this basic qualitative research study was to explore perceptions of K-12 school principals concerning ITC. In Chapter 3, I present the methodology. The research question was: What are the perceptions of K-12 school principals concerning ITC?

Research Design and Rationale

A basic qualitative research design was employed concerning perceptions of participants. I used this design to examine K-12 school principals' perceptions concerning ITC. I collected qualitative data from interviews. Therefore, the quantitative method was not selected.

Role of the Researcher

I worked with several students daily especially due to the COVID-19 pandemic, which prompted most teachers to commence teaching through online video platforms such as Zoom. I had significant professional and personal experience involving technology integration into the K-12 curriculum. As a technology teacher, I taught middle and high school students how to apply technological skills in literacy. I was a high school teacher teaching mathematics in 2021.

I have a strong foundation and am well-versed in terms of pedagogical and research frameworks. Also, I have been a university instructor and worked on projects concerning technology integration. I have experience with both traditional and online learning settings. With years of experience in middle and high schools, I developed excellent instruction, facilitation, and research skills.

Methodology

Participant Selection

The research site was a school district in southern United States and had 50 elementary, 15 middle, and 21 high schools, and 85 K-12 school principals. To select participants, I used purposive sampling. All participants were K-12 principals for at least 3 years. I used semistructured interviews with participants.

Instrumentation

I used the conceptual framework to form interview questions. The doctoral study committee reviewed these questions. I used Zoom to collect responses.

Procedures for Recruitment, Participation, and Data Collection

The study population was 85 K-12 principals. I sent emails to request their participation in this study. I used semistructured interviews via Zoom. Each interview was between 45 minutes and 1 hour and was audio-taped.

Data Analysis Plan

I organized the interview data and conducted thematic analysis. Moreover, I familiarized myself with responses participants provided me with during interviews. I printed and read interview transcripts many times. Furthermore, during the coding process, I highlighted sentences, phrases, and words that were common. I identified main codes from interview transcripts. I grouped identified codes and used different colors to identify themes. I identified themes from created codes by identifying patterns among the codes. I reread all common codes for accuracy in order to form separate themes. I compared all themes and did not combine or discard any themes.

Trustworthiness

I explained the data collection process to participants. Moreover, I also ensured interview excerpts represented perceptions of participants. Finally, I achieved dependability by asked the same interview questions for every participant.

I interviewed participants from elementary, middle, and high schools. I also applied ethical procedures. Specifically, I protected confidentiality of participants. I collected qualitative interview data from elementary, middle, and high school principals for triangulation. Moreover, I kept field and reflective bracketing notes. I also used member checks. Triangulation occurred because I interviewed participants and used member checking, and participants were from elementary, middle, and high schools. Thus, I established dependability using interviews, member checks, triangulation, and data auditing. I used a data collection and analysis process. My data collection and analysis process could be used by scholars to obtain similar findings. Thus, findings may be transferable to similar school districts.

Ethical Procedures

Ethical concerns were related to data collection and voluntary participation in the study. Institutional Review Board (IRB) approval is necessary before commencing with the data collection process. IRB approval ensures protection of participants before participating in the study and avoiding inclusion of persons below 18 years without parental consent or vulnerable persons (Schuwirth & Durning, 2019). IRB approval entails ensuring that participants are not exposed to potential emotional, psychological, or

physical harm (Schuwirth & Durning, 2019). In this study, my IRB approval number was (IRB # 10-22-21-0671898). I will keep interview transcripts for 5 years on my computer.

Summary

I described the methodology and how I collected interview data. I also addressed my role as a researcher and ways to maintain objectivity by avoiding prior preconceptions about the topic. Specific research methods were described. I present in Chapter 4 findings of this study.

Chapter 4: Reflections and Conclusions

The purpose of this basic qualitative research study was to explore perceptions of 10 K-12 school principals concerning ITC. Insights from research revealed school principals struggled with ITC. Contributing factors include lack of instructional leadership competency in terms of technology integration in K-12 settings. The research question was: What are the perceptions of K-12 school principals concerning ITC?

Setting of the Study

The population was 85 principals. I selected participants using purposive sampling. All participants had at least 3 years in K-12 schools. Ten participants agreed to be interviewed.

Data Collection

I recruited participants after obtaining permission from the superintendent of the school district and IRB approval from Walden University. I contacted K-12 school principals via email and included an invitation letter. I conducted interviews using Zoom. A convenient date was set with each participant. All qualitative data were collected using Zoom. Zoom is cost and time effective, and has recording and transcription features. Raw interview data were saved into a Word document.

I collected in-depth information about participants' experiences concerning IIC. I transcribed all interviews verbatim. Upon completing all interviews, every participant was thanked for their participation. Interview transcripts were analyzed using thematic analysis. I will keep all interview transcripts for 5 years, and delete them from my computer after that date.

Data Analysis

I read each transcript many times. Moreover, I noted key aspects of the study and familiarized myself with transcripts before starting data analysis. Furthermore, I took notes and highlighted common keywords. I organized interview transcripts in systematic and meaningful ways. Open coding was used to identify codes related to my study. Byrne (2021) said coding reduces voluminous data into small manageable chunks of meaning. A deductive approach was used when analyzing interview transcripts. Each interview was analyzed by focusing on relevant information. I used line-by-line coding to code key data. I found many patterns. I reviewed emergent themes during the final refinement process. I searched for contradictions and did not find any discrepant cases.

Results

Common words were: *implementing, leadership, practices, implementation, technology, integration, and curriculum*. Common phrases were: *implementing leadership practices, implementation of leadership practices, integrating technology, integration of technology, and curriculum*. The common words for the second theme were: *curriculum, positive, students, learning, achievement, technology, facilitate, overcome, challenges, integrate,* and *integration*. Common phrases were: *student achievement, positive student achievement, facilitating positive student achievement, learning challenges, overcoming learning challenges, implementing practices, implementing leadership practices, and integration of technology*. Participants facilitated positive student achievement and overcame learning challenges.

The common words for the third theme were: *fund, funding, budget, school*

budget, resource, resources, education, technology, programs, integration, computers, software, literacy, mathematics, and curricula. Common phrases were: *school budget, educational technology, educational programs, technology integration, funding for computers, funding for software, funding for literacy, funding for mathematics, funding for mathematics and literacy, literacy curricula, mathematics curricula, purchasing software programs, funding for core subjects, integrating educational software into the curriculum, integrating educational technologies into the curriculum, and integrating educational software into the core curriculum*. The third theme was that school principals used funding to integrate technology.

The fourth theme was that school principals defined or revised the school mission to include ITC. The fourth theme included these common words: *define, school, mission, include, integration, technology, into, curriculum*. The common phrases were: *the school mission, integrating into the mission, defining the school mission, redefining the school mission, mission to improve state test scores, mission to help students improve their state test scores, mission to increase state test scores in literacy and mathematics, and revising and implementing the school mission*.

Theme 1: Implementing Leadership Practices Concerning ITC

The first theme was participants implemented leadership practices concerning ITC. P1 said, “In order to lead a school concerning ITC, you must implement your leadership practices.” Moreover, P1 implied that school principals need to know “how to successfully integrate technology into the curriculum” by using their leadership skills.

Thus, P1 reported that without implementing leadership practices, “ITC could be a challenge for administrators and teachers.”

According to P2, “the successful integration of technology into the curriculum” depends on how “a principal applies their leadership practices to promote learning.” Furthermore, P2 evaluated and supervised instruction, and coordinated the school curriculum. P2 said, “I apply leadership practices to coordinate the school curriculum and concerning ITC.” Thus, P2 applied their leadership practices for ITC.

Similar to P1 and P2, P3 reported that they successfully integrated technology into the curriculum because they “applied leadership practices to define the school’s mission.” Specifically, P3 implemented “leadership practices to coordinate the school curriculum based on the school’s mission, which was concerning ITC.” Moreover, P3 applied “leadership practices to coordinate the instruction of the school curriculum.” Therefore, P3 stated they integrated technology into the curriculum by applying “leadership practices to implement the school’s mission.”

One of the instructional programs was instruction of school curriculum. According to P4, “ITC depended on the leadership practices as a school leader.” P4 stated that to successfully manage the instruction of the school curriculum, “technology should be integrated into the curriculum.”

P5 said, “a critical role of the school leader is to define the school vision.” In addition to this, P5 stated “the school vision was concerning ITC to prepare students for the 21st century.” Moreover, P5 reported that leadership practices affect ITC because “leadership practices must be applied to the school vision” given that principals are

school leaders. P6 said as a school principal, they had to frame and to communicate school goals to personnel and “teachers concerning ITC.” Specifically, P6 also stated, “The role of the school principal is to define the school vision, which includes ITC.” For example, P6 mentioned that they applied their “leadership practices to manage all school programs to prepare students for the 21st century.” For instance, P6 said that they thought “ITC depended on their leadership practices.” Therefore, P6 also concluded that “the successful implementation of the school vision concerning ITC was based upon their leadership practices.”

Similar to P1 to P6, P7 stated “the role of the school principal is to monitor students’ progress.” Explicitly, P7 emphasized that they managed school programs successfully because they applied their leadership practices as a school leader for the academic benefit of the students. For instance, P7 used an example of several instructional programs at the school that were successful because of the positive ITC. In summary, P7 reported, “The focus is on students’ progress and school leaders must integrate technology into the curriculum.”

According to P8, principals have “the responsibility to monitor students’ progress.” As a result, P8 managed all school programs by applying their leadership practices to prepare students academically. For instance, P8 successfully managed ITC. Thus, P8 emphasized that their success as a school leader was based on the application of their leadership practices to “integrate technology into the curriculum.”

The examples P1 to P8 provided are similar the examples P9 gave during the interview. P9 stated that as an instructional leader, they ensured that students were

afforded the opportunity to be immersed in technology at school. The explanation P9 provided was that students' academic skills improved because they used technology in the classroom. One example P9 used was the expectation to "support teachers concerning ITC." Therefore, P9 managed "ITC by applying their leadership practices."

Finally, P10 said that their role was critical to focus on ITC. According to P10, "School vision should include ITC to help students develop technical skills." The example P10 used was that "ITC was attributed to their leadership practices." P10 concluded that they successfully implemented the school vision and "integrated technology into the curriculum."

Participants reported that they implemented their leadership practices and integrated technology into the curriculum. P1 implied that implementing leadership practices could "help school leaders with ITC." Similar to P1, P2 successfully "integrated technology into the curriculum" because they applied their "leadership practices to promote learning." Alike P1, P2 applied "leadership practices to coordinate the school curriculum and concerning ITC." P3 implemented their leadership practices to coordinate the school curriculum. The participants integrated technology because they applied their leadership practices to define the school's mission.

P4 managed all instructional programs and reported that ITC depended on their leadership practices. Like P4, P5 thought that a critical "role of the school leader is to define the school vision to include ITC." P4 and P5 focused on preparing students for the 21st century by successfully "integrating technology into the curriculum based on their leadership practices." P4 and P5 said that to successfully implement the school vision,

technology should be integrated into the curriculum. P6 agreed with P1 to P5 that school principals communicate school goals to teachers to “integrate technology into the curriculum.” P1 to P6 also stated they applied their leadership practices to manage all school programs. Thus, P1 to P6 applied leadership practices to effectively integrate technology into the curriculum.

P7 stated that they monitor students’ progress and emphasized that they managed school programs successfully because they applied their leadership practices. Similar to P7, P8 agreed that the “role of the school principal is to monitor students’ progress.” Similar P1 to P7, P8 managed all school programs by applying their leadership practices to prepare students academically. For example, P9 stated that their role was to “focus on ITC and to monitor students’ progress.” Moreover, P9 stated that because they applied their leadership practices they better prepared students academically. P10 believed their role was to “focus on ITC.” Comparable to P1 to P9, P10 reported, “ITC was credited to their leadership practices.” Thus, P7 to P10 monitored students’ progress and managed school programs successfully because they applied their leadership practices.

In conclusion, participants implemented leadership practices concerning ITC. These participants integrated technology in the school to focus on learning, coordination of the curriculum, and monitoring students’ progress. Thus, all participants stated ITC was based on their leadership practices.

Theme 2: Facilitating Positive Student Achievement and Overcoming Learning Challenges

Participants facilitated positive student achievement and overcame learning challenges. P1 said that the school environment influenced their decision of using leadership practices concerning “technology integration into the curriculum.” According to P1, students had poor reading achievement on state tests. As a result, P1 applied leadership practices to “integrate technology into the curriculum” to assist students “improve proficiency.” For instance, P1 referred to the low state test scores, and as a result “ITC was necessary.” Thus, P1 “facilitated positive student achievement with technology integration into the literacy curriculum.”

P2 stated that students had low state test scores in mathematics. Because of low scores, P2 applied leadership practices to “integrate technology into mathematics curriculum to assist students in improving their state test scores.” For instance, P2 applied their leadership practices to “help students to improve their mathematical skills by integrating technology into the curriculum to facilitate positive student achievement and overcome learning challenges.” Thus, P2 facilitated positive student achievement in mathematics “with technology integration into the curriculum.”

According to P3, the successful technology integration into the literacy and mathematics curricula was influenced by their leadership practices. Furthermore, P3 implemented leadership practices concerning technology integration into the literacy and mathematics curricula because they had the responsibility to help students. The reason for the aforementioned decision was that the ”state test scores” in literacy and mathematics

were below state average. Moreover, P3 emphasized that they integrated technology into the literacy and mathematics curricula to assist students in improving their "proficiency on state tests." In summation, P3 facilitated positive student achievement in literacy and mathematics "with technology integration into the curriculum."

According to P4, "The integration of technology into the core curriculum" was necessary to facilitate positive student achievement and overcome learning challenges in all core subjects. Because state test scores were below state average, P4 was challenged by education stakeholders to increase state test scores. P4 decided to apply leadership practices "with technology integration into the curriculum" because students had poor achievement on state tests. Another challenge P4 was faced with was how to apply "leadership practices to help students to improve their proficiency on state tests by integrating technology into the curriculum." For example, P4 successfully "implemented leadership practices to help students improve state test scores" by integrating technology into the curriculum via electronic books and online databases. Thus, P4 integrated technology into the curriculum by using their leadership skills that resulted in facilitating student achievement.

P5 stated that leadership practices affect technology integration into the curriculum. According to P5, their major challenge was students' low "state test scores." As a result, P5 applied their leadership practices to "integrate technology into the curriculum" to facilitate positive learning to assist students in improving their "state test scores." Specifically, P5 applied their leadership practices to facilitate positive learning for students to "improve state test scores by integrating technology into the curriculum."

Online databases was an example that P5 used. Thus, P5 facilitated positive student achievement with technology integration into the curriculum.

P6 stated they had to facilitate higher academic achievement among their students because state and district test scores were below average. Consequently, P6 decided to apply their leadership practices to facilitate student higher academic achievement. Moreover, P6 said that their leadership practices affected student academic achievement "because of technology integration into the curriculum and the use of online databases." In addition to the use of online databases, P6 emphasized that their role was to support teachers to use technology to help students "improve state test scores." As an instructional leader, P6 reported that they were responsible for student academic achievement. Thus, P6 applied leadership practices to successfully manage "technology integration into the curriculum."

P7 mentioned that instructional leadership practices contribute to technology integration into the curriculum. Moreover, P7 reported that as an instructional leader, they promoted "technology integration into the curriculum" to facilitate higher academic achievement. In conclusion, P7 said that as a technology leader, they supported "technology integration into the curriculum."

P8 said that student achievement influenced their decision of using leadership practices "with technology integration into the curriculum." Explicitly, P8 applied "leadership practices concerning ITC for students to improve academic skills" by using online databases. For example, P8 facilitated positive student achievement "with technology integration into the curriculum" to overcome low "state test scores."

Therefore, P8 facilitated positive student achievement “with technology integration into the curriculum.”

P9 applied leadership practices with technology integration with the curriculum because students had low “state test scores.” For instance, P9 implemented, “leadership practices to help students to improve their state test scores by integrating technology into the curriculum” via online databases. Thus, P9 applied leadership practices concerning ITC at the school.

P10 applied “leadership practices concerning ITC.” Also, P10 facilitated positive student achievement “with technology integration into the curriculum.” For example, P10 implemented, “leadership practices to help students to improve their state test scores.” In conclusion, P10 said that student achievement influenced their decision of using leadership practices “with technology integration into the curriculum.”

As mentioned by P1, students had poor reading achievement on state tests and as a result the principal applied their leadership practices to “integrate technology into the curriculum for students to improve their reading skills.” Similar to P1, P2 reported that state test scores were low in mathematics. Moreover, P2 “applied leadership practices to integrate technology into the mathematics curriculum to help students to improve their proficiency in mathematics.” Furthermore, P3 implemented their leadership practices concerning technology integration into the literacy and mathematics curricula because state test scores in literacy and mathematics were below state average. Also, P4 “integrated technology into the core curriculum to facilitate positive student achievement and overcome learning challenges in all core subjects.” Thus, P1 to P4 implemented

"leadership practices" to help students to improve state test scores by integrating technology into the curriculum.

Similar to P1 to P4, P5 stated that students' state test scores were below average. P5 applied their leadership practices to facilitate positive learning for students integrating technology into the curriculum where students used online databases. Similar to P5, P6 facilitated higher academic achievement among their students through technology integration into the curriculum with the use of online databases. Moreover, P7 integrated technology into the curriculum to facilitate higher academic achievement of students with the use of online databases. Thus, P5, P6, and P7 applied their leadership practices to facilitate positive learning for students by "integrating technology into the curriculum with the use of online databases."

P8, P9, and P10 also stated that student achievement influenced their decision of using leadership practices with technology in the schools. Specifically, P8, P9, and P10 used the phrase "integrate technology into the curriculum for students to improve their academic skills by using online databases." Moreover, P8 integrated technology into the core curriculum to increase low state test scores. Furthermore, P9 applied, "leadership practices to help students to improve their state test scores by integrating technology into the curriculum via online databases." Also, P10 implemented "leadership practices to help students to improve their state test scores," meaning that student achievement influenced their decision of applying leadership practices "with technology integration into the curriculum."

All participants integrated technology into the core curriculum with the use of online databases to facilitate positive student achievement and overcome learning challenges, such as low state test scores. Student achievement influenced the decision of all participants to apply their leadership practices with technology integration "into the curriculum for students to improve their academic skills" using online databases. In conclusion, all participants facilitated student achievement and overcame learning challenges, such as low state test scores.

Theme 3: Funding for ITC

Funding was used by school administrators to purchase educational technologies to integrate them into the curriculum. As the participants reported, they used funding for ITC. P1 said that funding was allocated to the school's budget "by the school district administrators concerning ITC." Specifically, P1 worked "with senior district administrators" concerning funding for purchasing computer hardware and software programs because students had poor reading achievement on state tests. Also, P1 emphasized that they integrated educational technology into the literacy curriculum "for students to improve their reading skills." Funding was necessary to help students to increase the low state test scores in literacy. According to P1, because students had access to educational technologies their literacy skills improved as evident by the increase in state test scores in literacy.

Like P1, P2 said funding was needed concerning ITC. For example, P2 received funding to purchase computers and educational programs because "students' state test scores in mathematics were below state average." The decision P2 made to "integrate

mathematical educational technologies into the mathematics curriculum was for students to improving their state test scores." According to P2, the integration of mathematical educational programs "into the curriculum helped students to improve their mathematical skills." P2 helped students with academic achievement in mathematics by "integrating educational programs into the mathematics curriculum."

P3 said that the successful technology integration into the literacy and mathematics curricula was the result of funding for computers and software. For instance, P3 used funding from the local community to purchase educational programs for the school for students in literacy and mathematics classes to work on literacy and mathematics concepts. The explanation P3 provided was that students needed educational programs in literacy and mathematics to improve their state test scores. The reason P3 used funding to purchase educational programs was because state test scores had to be improved in literacy and mathematics. According to P3, after the integration of "educational technologies into the literacy and mathematics curricula" literacy and mathematics state test scores improved. Thus, P3 concluded that achievement in literacy and mathematics increased because of ITC.

Alike P1 to P3, P4 received funding from the local educational community to purchase software programs to facilitate positive student achievement in core subjects. One of the reasons that P4 received funding to purchase software programs was because state test scores in core subjects were below state average. The goal of P4 was to increase state test scores in the core subjects. To achieve that goal, P4 said "software educational programs were used in the classes to help students improve their literacy, mathematics,

and science skills." The challenge P4 had was to find a way to increase state test scores. Thus, for P4 to overcome this challenge, educational software was purchased for students to use in the classroom to "help students to improve their proficiency on state tests."

The next participant, P5, received funding from the local state to "integrate technology into the curriculum." Similar to P1 to P4, P5 was challenged with students' low state test scores in literacy, mathematics, and social sciences. The funding P5 received was used to purchase software programs in literacy, mathematics, and social sciences to assist students in improving their state test scores in the core subjects. According to P5, leadership practices were applied to receive "funding for technology integration into the curriculum" that resulted in facilitating positive learning for students. Also, according to P5, because technology was integrated into the literacy, mathematics, and social sciences curriculum, state test scores increased in these core subjects.

P6 stated that funding was necessary to facilitate higher academic achievement as measured by state tests. The funding P6 received was used to purchase "educational technologies" for the classes at the school. By purchasing educational technologies for core classes, P6 facilitated student higher academic achievement. Moreover, P6 applied leadership practices to receive funding. According to P6, funding affected student higher academic achievement. The explanation P6 provided was that because technology was integrated into the curriculum, students improved their reading, writing, and mathematical skills. Thus, P6 emphasized that because they were responsible for student academic achievement, they worked with community stakeholders to receive funding to "integrate technology into the curriculum."

Like P1 to P6, P7 reported that funding affected student academic achievement. Specifically, P7 applied leadership practices concerning technology integration into the curriculum. For example, P7 said “technology was integrated into the curriculum for students to improve their state test scores.” One leadership practice applied by P7 was to work with community stakeholders who donated educational software to the school for students to use in the classrooms. Community stakeholders contributed to technology integration into the curriculum by providing funding to the school where P7 was the principal. According to P7, technology was used in the classrooms. Higher academic achievement was possible “with technology integration into the curriculum for students to increase proficiency as measured by state tests.” Thus, P7 concluded that because they were a technology leader and supported technology, “technology integration into the curriculum was necessary for the academic benefit of students.”

P8 said that low student achievement influenced their decision to communicate with community stakeholders. Specifically, P8 received funding for the integration of educational technologies, such as reading and mathematics programs into the curriculum. Furthermore, P8 applied their leadership practices to integrate reading and mathematics programs “into the curriculum for students to improve their academic skills.” According to P8, “Technology was integrated into the curriculum to facilitate positive student achievement.” In conclusion, P8 reported that because technology was used in the school, students increased state test scores students due to the use of the reading and mathematics programs in the classrooms.

According to P9, by working with community stakeholders they received funding "for the integration of educational technologies into the curriculum." For instance, P9 brought to the school reading and mathematics programs "for students to improve their proficiency in reading and mathematics." P9 applied leadership practices to work with community stakeholders "for the successful technology integration with the curriculum." Students' low state test scores were a challenge for P9. An example P9 used was to convince community stakeholders "to contribute to the integration of technology into the classroom." To receive funding, P9 implemented their "leadership practices to get enough monies" for software programs "to help students improve their state test scores in reading and mathematics." Thus, P9 implied that they facilitated positive student achievement by having students use reading and mathematics programs for learning in the classrooms.

P10 reported that funding was "absolutely necessary to facilitate academic achievement at the school." Because state test scores were low, P10 purchased educational programs for students to use in the classrooms to "improve proficiency." Moreover, P10 reported that funding contributed to "technology integration into the curriculum." Specifically, software programs "helped students to improve their reading and writing skills." Also, P10 reached out to community members to locate funds for software programs. According to P10, the reason they worked with community stakeholders was "concerning ITC to help students increase proficiency." As a leader of the school, P10 said, "I had the responsibility to increase state test scores." Thus, P10

facilitated learning "by receiving funding to purchase software programs to help students to improve their state test scores."

All participants used funding to purchase hardware and software program. For example, P1 used school's budget "concerning ITC." According to P1, funding was needed to purchase computer hardware and reading programs for "students to improve their state test scores in reading." P2 received funding for computers and educational programs "for students to improve state test scores in mathematics." Funding helped P2 to integrate mathematical educational technologies into the curriculum. Similar to P1 and P2, P3 received funding for technology integration into the literacy and mathematics curricula. Explicitly, P3 purchased educational programs for students in literacy and mathematics to improve their state test scores. Also, P4 approached the local educational community to receive "funding for software program" to facilitate student achievement in core academic subjects. Like P1 to P4, P5 received funding from the local state to "integrate technology into the curriculum" because of low students' state test scores in literacy, mathematics, and social sciences. According to P6, fundings was a contributing factor to facilitate student academic achievement by purchasing "educational technologies for students to improve their reading, writing, and mathematical skills." As a school principal and advocate for student learning, P7 worked with community stakeholders to receive educational software for students to use in the classrooms to "improve proficiency on state tests." Because the school budget was limited, P8 approached community stakeholders for fundings of software programs for "the integration of educational technologies into the curriculum." Similar to P1 to P8, P9 also

received funding for the “integration of educational technologies into the curriculum for students to improve proficiency in reading and mathematics.” Finally, P10 said that because of funding for “educational technologies, students increased their proficiency in reading and writing.” In conclusion, the participants used funding for educational software to be used in the schools.

Theme 4: Defining or Revising the School Mission to Include ITC

All participants defined or revised the school mission to include ITC. For instance, P1 said the school mission did not include ITC. Because state test scores in reading were below state average at the school where P1 was the principal, P1 applied “leadership practices to include in the school mission ITC for students to improve their reading state test scores.” According to P1, school principals have the responsibility “to support teachers to help students improve their reading skills by using educational technologies in the classrooms.” Thus, P1 facilitated positive student achievement by including in the school mission “technology integration into the literacy curriculum.”

P2 stated that students’ low state test scores in mathematics were a challenge. As an instructional leader, P2 decided to “apply leadership practices to revise the school mission to include the integration of technology into the mathematics curriculum.” According to P2, “Technology integration helps students improve their state test scores in mathematics.” For example, P2 applied leadership practices to revise the school mission with the support of teachers. The revised school mission focused on technology integration “for students to improve their mathematical skills,” according to P2. Thus, P2

reported that because the school mission included ITC students improved their mathematical skills.

P3 said that they had the responsibility to help students. The school missions was revised to include “technology integration into the literacy and mathematics curricula,” according to P3. As P1 to P2 revised the school mission, P3 used their leadership skills and worked with teachers to include in the school mission a paragraph concerning technology integration into the literacy and mathematics curricula. Specifically, P3 worked with members of the school council to draft the new school mission. The members of the school council searched for “ways to increase state test scores” in literacy and mathematics that were below state average. As a result of working with the school council, P3 revised the school mission to “integrate technology” into the literacy and mathematics curricula. By revising and implementing the school mission, P3 implied that they applied leadership skills for the academic benefit of the students who used educational technologies in the classrooms to “improve their proficiency on state tests.” In conclusion, P3 facilitated positive “student achievement in literacy and mathematics” by defining the school mission to include “technology integration into the curriculum.”

As the aforementioned school leaders revised the school mission, P4 was a school leader in a low performing school and revised the school mission. For instance, P4 reported that student achievement was a challenge at the school and were pressured by teachers and parents to overcome these learning challenges in the core subjects. Because the state test scores were below state average in core academic subjects, P4 decided to revise the school mission. The school council members met with P4 to find solutions to

increase the state test scores. During the school councils, P4 redefined "the school mission to include educational technologies into the core curriculum for students to increase their proficiency in the core subjects." P4 applied their leadership practices and revised the school mission to include educational technologies into the core subjects. By redefining the school mission, P4 helped teachers with the use of educational technologies, and as a result "students improved proficiency on state tests." According to P4, "By including ITC in the school mission, teachers better supported students." Thus, P4 implemented their leadership practices to define a school mission to help students to "improve their state test scores by integrating technology into the curriculum."

P5 worked with teachers and staff on the school mission for teachers to focus instruction on teaching with educational technologies. According to P5, leadership practices affected the revision of the school mission to include "technology integration into the curriculum." Because the state test scores needed improvement in the past 5 years , P5 as a school principal revised the school mission. P5 reported that they applied their leadership practices to revise the school mission to "include the use of technology in the curriculum." According to P5, "Because the school mission was redefined and I supported the teachers as an instructional leader, I facilitated positive learning, and students improved their state test scores." Therefore, P5 facilitated positive student achievement by redefining the school mission that included "technology integration into the curriculum."

P6 worked with teachers, staff, and members of the school council on the school improvement plan. According to P6, instructional leadership was applied to define the

school mission to include academic achievement "with the integration of educational technologies into the curriculum." Because state and district test scores were below average, P6 applied "leadership practices to define the school mission." Specifically, the school mission focused on how to facilitate student higher academic achievement. Also, P6 reported "leadership practices had an effect on student academic achievement, and technology integration into the curriculum affected state test scores." Consequently, P6 applied leadership practices to include in the definition of the school mission "technology integration into the curriculum."

P7 was a school principal at a low performing school where the state test scores were so low that the state department of education had given a deadline to improve the state test scores. As a school leader, P7 met numerous times with school council members to identify strategies to improve state test scores. According to P7, "Instructional leadership practices and technology integration into the curriculum could help students to improve their state test scores." Explicitly, P7 applied their instructional leadership skills to define the school mission to promote "technology integration into the curriculum." Specifically, P7 worked with school council members and defined the school mission to include technology integration to facilitate higher academic achievement. As a technology expert, P7 supported "technology integration into the curriculum" by defining the school mission, and by working with the school council members. In conclusion, P7 reported that after the revision of the school mission and their support to teachers as an instructional leader to "integrate technology into the curriculum," state test scores began to improve.

P8 said that student achievement was a challenge in the low performing school they served as a school principal. After numerous staff meetings and school council meetings, P8 included in the school mission "technology integration into the curriculum as a strategy to increase state test scores." When P8 was a teacher, they had expertise "with technology integration into the curriculum." The expertise in technology influenced P8's decision to use "leadership practices to revise the school mission." As a result, the school mission included technology integration into the curriculum. Also, P8 applied "leadership practices to define the school mission to include ITC." P8 "included in the school mission technology integration into the core curriculum for teachers to help students to improve state test scores."

P9 said state test scores where below state average the first 2 years of their principalship. As a strategy to "improve state test scores," P9 worked closely with teachers to support them to use educational technologies in the classrooms. Leadership practices and technology expertise were applied by P9 to define the school mission to include "technology integration into the curriculum." Teachers worked with P9 to define the school mission to focus on strategies to "help students to improve their low state test scores." Members of the school council and members of the school improvement plan also worked with P9 to define the school mission. Therefore, P9 implemented their leadership practices to help members of the school council and school improvement plan to include in the school mission strategies to help students improve their state test scores by integrating technology into the curriculum. Because P9 applied their leadership practices and technology expertise to define the school mission to "include technology

integration into the curriculum" at the school, "state test scores began to improve." Because P9 defined the school mission to include "technology integration into the curriculum," students improved their state test scores in the last 2 academic years.

P10 served as a school leader in a low performing school. For instance, P10 applied their leadership practices to "integrate technology into the curriculum" because the state test scores were consistently below average. The school mission was revised to include "technology integration into the curriculum" as stated by P10. The school council members with expertise in educational technologies worked with P10 to revise the school mission. The school council supported P10 to revise the school mission "for teachers to use educational technologies in the classroom." Therefore, P10 implemented their leadership practices to define the school mission to include "technology integration into the curriculum for students to improve their state test scores." In conclusion, P10 facilitated positive student achievement with the inclusion in the school mission of "technology integration into the curriculum."

According to P1, "The school mission did not include ITC" and they applied their leadership practices to include in the school mission ITC "for students to improve their reading state test scores." Similar to P1, students' low state test scores was a challenge for P2 who applied their leadership practices to revise the school mission to include "the integration of technology into the mathematics curriculum." Both P1 and P2 focused on technology integration to help students improve state test scores. Like P1 and P2, P3 included technology integration into the literacy and mathematics curricula for the

academic benefit of students by using “educational technologies in the classrooms to improve their proficiency on state tests.”

Analogous to P1, P2, and P3, P4 was a principal in a low performing school and the state test scores were below state average in core academic subjects. P4 included “in the school mission the use of educational technologies into the core curriculum for students to increase their proficiency in the core subjects.” Similar to P4, P5 was a school principal in a low performing school where the state test scores were very low and they redefined the school mission for teachers to focus instruction on teaching with educational technologies.

According to P6, the school mission was revised to include academic achievement “with the integration of educational technologies into the curriculum because state and district test scores were below average.” Comparable to P4 and P5, P7 was a school principal at a low performing school where the state test scores were low, and P7 applied their instructional leadership skills to define the school mission to use technology to teach the curriculum. Similar to P4, P5, and P7, P8 was a principal in a low performing school and applied their leadership practices to revise the school mission to include technology integration into the curriculum. As P1 to P8 revised the school mission, P9 applied leadership practices and their technology expertise to define the school mission to include “technology integration into the curriculum.” P4, P5, P7, P8, and P10 served as school leaders in a low performing school and applied their leadership practices to define the school mission to include technology integration into the curriculum. In summary, all

participants defined or revised the school mission to include “ITC.” The participants facilitated positive student achievement.

Evidence of Trustworthiness

Interviews are used to achieve credibility of a study (Lemon & Hayes, 2020). The researcher conducts interviews until no new information emerges from participants (Rose & Johnson, 2020). According to Flick (2019), the researcher listens to participants.. Bracketing and reflexivity is achieved through journals and field notes during interview sessions, and such an approach ensures objectivity of findings and reduces potential researcher bias.

I focused on trustworthiness and followed ethical procedures. I also described the data collection process, and ensured that interview excerpts represented perceptions of participants. Finally, I included excerpts of perceptions of each participant.

According to Yin (2016), a data audit is used to establish dependability. I interviewed K-12 school principals from elementary, middle, and high schools from the schools under study. Additionally, I protected confidentiality of participants. Moreover, I achieved credibility using interviews. After I interviewed the first eight participants, I noticed no new information. I continued with interviews and interviewed the last two participants. Thus, I conducted 10 interviews and no new information emerged.

I addressed credibility by limiting personal biases. Specifically, I employed member checks to minimize biases. Moreover, each participant reviewed their interview transcripts, and verified the accuracy of the interview data. Furthermore, I ensured

interview transcripts were accurate interpretations of what I thought each participant shared with me. Each participant verified accuracy of interview data.

During each interview, I took field notes. Moreover, I used actual quotes from each participant. Furthermore, I kept reflective bracketing notes to help me identify potential themes. I triangulated interview data by interviewing participants, using member checking, and evaluating participants were from elementary, middle, and high schools. Thus, I established dependability using interviews, member checks, triangulation, and data auditing.

I conducted 10 interviews until no new information emerged. Additionally, I listened carefully to each participant. Moreover, I carefully analyzed interview transcripts. Specifically, I read each interview transcript multiple times and documented what I did throughout this study.

During the data collection and analysis process, I used data auditing to control for personal biases. I kept a journal and used it to ensure reliability. I also kept field notes to record observations and reactions. My data collection and analysis process could be used by scholars to obtain similar findings. I established transferability by interviewing multiple participants.

Summary

The first theme was participants implemented leadership practices concerning ITC. The second theme was participants facilitated positive student achievement and overcame learning challenges. The third theme was participants used funding for ITC. The fourth theme was participants defined or revised the school mission to include ITC. I

used member checking to increase credibility of this study. Additionally, for triangulation, I interviewed elementary, middle, and high school principals. Also, I kept reflective bracketing notes to help me identify themes. I used data auditing to control for personal biases. Furthermore, I kept a journal to ensure reliability.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this basic qualitative research study was to explore perceptions of K-12 school principals concerning ITC. The research question was: What are perceptions of K-12 school principals concerning ITC? I read each transcript many times, took notes, and highlighted common keywords. I used open coding and coded text using line-by-line coding. The first theme was participants implemented leadership practices for ITC. The second theme was participants facilitated positive student achievement and overcame learning challenges. The third theme was participants used funding for ITC. The fourth theme was participants defined or revised the school mission to include ITC.

Interpretation of the Findings

Theme 1

Participants implemented leadership practices concerning ITC. They applied leadership practices to promote learning concerning ITC, managing instructional programs, framing and communicating school goals, monitoring students' progress, and ensuring students are afforded the opportunity to be immersed in technology at school. Participants explained that students' academic skills improved because they integrated technology into the classroom. All participants reported they implemented leadership practices for ITC. Specifically, they integrated technology into the curriculum to promote learning, coordinate the school curriculum, and monitor students' progress. These are components of the instructional leadership model.

Theme 2

Participants facilitated positive student achievement and overcame learning challenges. Using leadership practices with ITC was influenced by the school environment where students had poor state test scores. Participants: (a) applied their leadership practices concerning ITC, (b) facilitated positive student achievement with technology integration into literacy and mathematics curricula, (c) integrated technology into the core curriculum for students to overcome learning challenges, (d) facilitated positive student achievement in literacy and mathematics with technology integration ITC, (e) had the responsibility to help students as instructional leaders at the school, (f) had state test scores in literacy and mathematics that were below the state average, (g) integrated electronic books and online databases into the curriculum that resulted in student achievement, (h) applied their leadership practices concerning ITC to facilitate positive learning to assist students in terms of improving their state test scores by facilitating academic achievement, and (i) applied leadership practices to successfully manage technology integration into the curriculum. All participants applied leadership practices to help students. In conclusion, all participants facilitated positive student achievement and overcame learning challenge.

Theme 3

Participants received funding for technology hardware and software to be used in schools. Participants said that funding was allocated to their school budgets for the purchase of computer hardware and software programs because students had poor achievement on state tests. Participants purchased literacy, mathematics, and science

educational programs for students to use in the classroom to improve their skills in core academic subjects. Funding from local communities to purchase software programs was necessary to facilitate positive student achievement in literacy, mathematics, and science because students' state test scores were below state average.

Another source of funding was the local state. Participants received state funding concerning ITC because they were challenged by students' low state test scores in literacy, mathematics, and social sciences. Funding was necessary to facilitate higher academic achievement as measured by state tests.

Community stakeholders contributed to technology in schools. Low student achievement of students influenced participants to communicate with educational stakeholders. Funding for educational technologies facilitated positive student achievement because students used reading and mathematics programs in classrooms to improve their proficiency in core subjects.

Theme 4

The fourth theme was that participants defined the school mission to include technology. Participants facilitated positive student achievement by defining or redefining the school mission to include ITC. The focus of the schools under study should be how to facilitate student academic achievement with technology. The participants revised the school mission to include technology.

Support from Literature Review

Findings were based on interviews with participants who implemented leadership practices for ITC (Theme 1), facilitated positive student achievement and overcame

learning challenges (Theme 2), used funding (Theme 3), and defined or revised the school mission (Theme 4). Participants implemented leadership practices for ITC. Also the participants facilitated positive student achievement and overcame learning challenges by using funding to purchase software and defining or revising the school mission.

Conceptual Framework

I used the Hallinger and Murphy model. Moreover, I applied this model to examine perceptions of participants' roles and obligations as school leaders. K-12 school principals maintain close working relationships with superintendents, teachers, and other stakeholders. According to Gumus et al. (2018), principals play a role through leadership is defining the school vision. Based on the Hallinger and Murphy model, communicating school goals is another role that principals have in schools.

For example, instructional leadership practices are central to technology integration. Another component of this model is for principals to set a clear vision for the school. The participants ensured consistency to use technology in the classrooms. Another example the participants used was the use of educational software for literacy and mathematics.

I examined perceptions of the participants' roles in how they are defining school mission. Oliver et al. (2019) reported principals should communicate technology vision and mission. Additionally, Howard and Mozejko (2015) stated principals should use technology programs to support student academic achievement. According to Hitt and

Tucker (2016), principals are required to use leadership to facilitate dialogue on ITC. Themes of this study are in line with this component of the Hallinger and Murphy model.

Another component of the Hallinger and Murphy (1985) model is for principals to manage the instructional program. Based on the emergent themes, the participants monitored the academic progress of students. Additional components of the Hallinger and Murphy model are for principals to evaluate teachers' practices, supervise instruction in the schools, and coordinate the school curriculum. Scholas stated school principals have a duty to promote technology integration in the classroom (Dexter & Richardson, 2020; Rashdi & Khamis, 2017; Şenol & Lesinger, 2018). Principals enhance positive approaches when they focus on technology integration into the curriculum (Henrie et al., 2015). Thus, the themes are in line with these components of the Hallinger and Murphy model.

Implementation of Leadership Practices for ITC

Theme #1 is supported by the current literature review. P1 emphasized without implementing leadership practices, ITC could be a challenge for administrators and teachers. According to P2, the successful ITC depends on how a principal applies leadership practices to promote learning. P3 applied practices to coordinate the school curriculum and instruction. P4 succeeded with ITC by using leadership practices. P5 emphasized that to successfully ITC, leadership practices must be applied. P6 applied "leadership practices to manage ITC." P7 integrated educational technologies in schools because they applied their leadership practices as a school leader for the academic benefit of the students. According to P8 success as a school leader was based on the application

of their leadership practices to ITC. P9 stated they ensured students were afforded the opportunity to be immersed in technology at school. According to P10, ITC can be used for students to develop technical skills.

School leaders should apply leadership practices to integrate educational technologies in schools. Specifically, school leaders, such as principals, should embrace the tenets of instructional leadership practices to help students master the curriculum with the help of educational technologies (Boyce & Bowers, 2018). According to Berkovich and Bogler (2020), principals should apply leadership practices to use educational technologies in schools. Berkovich and Bogler revealed leadership practices are essential in ensuring successful ITC. Principals should supervise ITC in their schools (Akram et al., 2018; Vogel, 2018). Thus, school leaders should apply leadership practices to use technology in schools. P2 successfully ITC because they applied their "leadership practices to promote learning." P2 and P3 applied leadership practices to coordinate the school curriculum.

School leaders' instructional leadership practices should be applied to embrace technology integration in the schools. P4 managed all instructional programs including ITC. P4 and P5 focused on preparing students for the 21st century by successfully applying ITC. P1 to P6 applied leadership practices to manage all school programs to effectively integrate technology into the curriculum. According to Levin and Bradley (2019), emerging technologies could be used in schools for students to develop new academic skills. Specifically, Johnson and James (2018) stated technology integration into the curriculum depends on school leaders practices. Wyatt (2017) explained

instructional leadership practices contribute to technology use. Because educational technologies change, school leaders should focus on how teachers can cope with technology innovation (Bowman et al., 2020).

School leaders should support teachers regarding educational technologies. P7 stated that they monitor students' progress and emphasized that they managed school programs successfully because they applied their leadership practices and supported teachers. P8 managed all school programs by applying their leadership practices to prepare students academically by supporting teachers. According to Dexter and Richardson (2020), school leaders should support teachers to grow professionally to develop new technological skills concerning the use of educational technologies. Dexter and Richardson emphasized school leaders should support teachers to manage educational technologies changes. For example, school leaders should "develop their faculty and staff" via professional development (Dexter & Richardson, 2020, p. 4). For instance, professional development could help teachers cope with technology innovation. According to Dexter and Richardson, school leaders should "use technology to engage" teachers in teaching activities (p. 4). For instance, teaching activities may include the use of educational technologies. Thus, school leaders should support teachers to use educational technologies.

Theme #1 is supported by current literature. The participants supported teachers through professional development, monitored students' progress, and managed school programs successfully because they applied their leadership practices regarding ITC. P1 to P8 focused on ITC and monitored students' progress by supporting teachers by

providing professional development opportunities to them. According to Francom et al. (2021), teachers transition to distance learning, which includes the use of educational technologies. Moreover, Francom et al. recommended school leaders should support teachers by offering professional development. P9 applied leadership practices to provide professional development to teachers to better prepare students academically. P10 reported ITC was credited to their leadership practices because they supported teachers via professional development. For instance, Shamir-Inbal and Blau (2021) examined "the understanding of student, parent, teacher, and school leader experiences with remote learning in a K-12 context" (p. 2). According to Shamir-Inbal and Blau, school leaders should support teachers to "improve teacher pedagogy in remote instruction" (p. 3). Shamir-Inbal and Blau recommended that school district administrators use educational technologies when school disruptions occur, such as COVID-19 pandemic. Thus, the participants monitored students' progress and managed school programs successfully because they applied their leadership practices to support teachers through professional development.

School leaders should support teachers with professional development on educational technologies. Theme #1 is also supported by current literature. P1 to P10 supported teachers through professional development regarding ITC. Specifically, P1 to P10 supported teachers by providing professional development on how to improve teacher pedagogies by learning about new educational technologies. Gomez et al. (2021) studied "self-efficacy as a factor in teachers' technology use and integration efforts" (p. 2). Gomez et al. collected data from an urban K-12 classroom settings and the sample

was 327 teachers. Gomez et al. revealed, “Teachers had a fair level of confidence in both using and integrating technology” (p. 7). Gomez et al. recommended “continuous professional development intervention as a key implication that influenced teachers’ self-efficacy in leveraging technology for professional practice” (p. 9). For example, school leaders can support teachers with professional development on technology-enhanced learning and teaching environments. For instance, according to Bryant et al. (2020), schools should be “technology-enhanced learning environments” (p. 2). During COVID-19, educators used emergency teaching mode by using either asynchronous or synchronous learning to help students (Bryant et al., 2020). Bryant et al. reported “numerous digital technologies have supported” educators (p. 3).

P1 to P10 applied leadership practices to prepare students academically by providing professional development opportunities on ITC to teachers. For example, P1 to P10 focused on professional development for teachers to better prepare students academically by ITC. For instance, P1 to P10 successfully implemented ITC by applying leadership practices to support teachers via professional development to use educational technologies. The participants monitored students’ progress and managed school programs by implementing ITC based on their leadership practices to support teachers through professional development. P1 to P10 supported teachers with professional development on educational technologies. The participants applied leadership practices concerning ITC. The participants integrated technology in the school to focus on learning, coordination of the curriculum, and monitoring students’ progress. Thus, all participants stated ITC was based on their leadership practices.P1 to P10 supported

teachers with professional development on the use of educational technologies. Specifically, P1 to P10 supported teachers to use educational technologies for instruction. Another example for remote instruction was provided by Huck and Zhang (2021) who "investigated school closures during the COVID-19 pandemic and the use of remote learning in a K-12 context" (p. 55). Huck and Zhang recommended school leaders to "improve teacher pedagogy in remote instruction" (p. 78). Therefore, school leaders should support teachers in emergency teaching modes. For instance, Jackson (2018) wrote principals should develop the school vision to include technology. Dogan et al. (2021) administered a survey to 1,335 K-12 teachers. The survey was based on technology uses and perceptions. Dogan et al. (2021) conducted their study in the state of Florida. Dogan et al. recommended professional development for teachers to develop technology competencies. Dogan et al. reported, "teachers' perceived technology skills for instructional and application software use directly and positively affected their beliefs on usefulness" (p. 20). Xie et al. (2021) stated that teachers' perceptions affected technology integration.

Facilitation of Positive Student Achievement and Learning Challenges

Theme #2 is supported by current literature. P1 to P10 facilitated positive student achievement and overcame learning challenges. P1 said that the school environment influenced their decision of using leadership practices concerning ITC. According to P1, students had poor reading achievement on state tests. As a result, P1 applied leadership practices to ITC to assist students "improve proficiency" referring to the low state test scores, and as a result "ITC was necessary." Thus, P1 "facilitated positive student

achievement with technology integration into the literacy curriculum." Educational technologies facilitate student learning. For instance, Kormos and Wisdom (2021) stated that teachers could use "a variety of educational technology tools to facilitate student learning" (p. 1). An example provided by Kormos and Wisdom was the use of "web-based technologies and software" (p. 2). Kormos and Wisdom recommended educational technology tools to facilitate learning.

P2 stated that students had low state test scores in mathematics, and applied leadership practices to "integrate technology into mathematics curriculum to assist students in improving their state test scores." P2 applied "leadership practices to help students to improve their mathematical skills by integrating technology into the curriculum to facilitate positive student achievement and overcome learning challenges." Thus, P2 facilitated positive student achievement in mathematics "with technology integration into the curriculum." Similar to Kormos and Wisdom's (2021) findings, Lemoine et al. (2020) reported issues with technology integration in schools, and school leaders could use software to facilitate learning. The reason for using educational technology tools to facilitate learning is because society is knowledge-based (Lemoine et al., 2020).

According to P3, the successful technology integration into the literacy and mathematics curricula was influenced by their leadership practices. P3 emphasized they integrated technology into the literacy and mathematics curricula to assist students in improving "proficiency on state tests." P3 facilitated positive student achievement in

literacy and mathematics with ITC. According to Alkis and Taskaya-Temizel (2018), educational technologies have an effect on academic performance.

Technology may help students develop academic skills. According to P4, "The integration of technology into the core curriculum" was necessary to facilitate positive student achievement and overcome learning challenges in all core subjects. P4 applied leadership practices with ITC because students had poor achievement on state tests. P4 successfully "implemented leadership practices to help students improve state test scores" by ITC via electronic books and online databases. Thus, ITC was based on the leadership skills resulting in facilitating student achievement. For example, school leaders should support students and teachers with technological interventions to facilitate student learning (Akram et al., 2018).

According to P5, leadership practices were applied to ITC to facilitate positive learning to assist students in improving their "state test scores." P5 applied leadership practices to facilitate positive learning for students to "improve state test scores by integrating technology into the curriculum." Online databases was an example that P5 used. P5 facilitated positive student achievement with technology integration into the curriculum. For instance, Ross and Cozzens (2016) reported technology could be used in the classroom to improve the overall experiences for students.

P6 facilitated higher academic achievement among their students because state and district test scores were below average. Consequently, P6 said leadership practices affected student academic achievement "because of technology integration into the curriculum and the use of online databases." In addition to the use of online databases, P6

emphasized that their role was to support teachers to use technology to help students "improve state test scores." As an instructional leader, P6 reported that they were responsible for student academic achievement. Thus, P6 applied leadership practices to successfully manage "technology integration into the curriculum." Moreover, principals should make technology available in the schools to facilitate student learning (Callaway, 2017). According to Wyatt (2017), principals should focus on technology-driven classrooms for the academic benefit of students.

Instructional leadership practices contribute to technology integration into the curriculum. Moreover, P7 reported that as an instructional leader, they promoted "technology integration into the curriculum" to facilitate higher academic achievement. P7 said that as a technology leader, they supported "technology integration into the curriculum." Moreover, Vogel (2018) wrote principals should be interested in using technology in the classrooms to facilitate student learning.

According to P8, student achievement influenced their decision of using leadership practices with ITC. Moreover, P8 applied "leadership practices concerning ITC for students to improve academic skills" by using online databases. Furthermore, P8 facilitated positive student achievement "with technology integration into the curriculum" to overcome low "state test scores." Thus, P8 facilitated positive student achievement "with technology integration into the curriculum." Akram et al. (2018) stated principals should oversee the integration of technology in schools. Uğur and Koç (2019) reported principals should integrate technology to increase student learning. Thus, technology use in the classroom could facilitate student learning.

Scholars indicated principals should be technology leaders to promote technology in schools and facilitate student learning. P9 applied leadership practices with technology integration with the curriculum because students had low "state test scores." For instance, P9 implemented, "leadership practices to help students to improve their state test scores by integrating technology into the curriculum" via online databases. Thus, P9 applied leadership practices concerning ITC at the school. For example, Johnson and James (2018) wrote principals facilitate technology integration in schools. According to Boyce and Bowers (2018), school principals should seek to transform their learning institutions because they are viewed as visionary leaders. Principals should have the capacity to use technology to facilitate student learning (Boyce & Bowers, 2018).

P10 applied "leadership practices concerning ITC" and facilitated positive student achievement with ITC. For example, P10 implemented, "leadership practices to help students to improve their state test scores." P10 said that student achievement influenced their decision of using leadership practices with ITC. Additionally, according to Callaway (2017), principals should facilitate technology integration in their schools. Based on my themes, the participants implemented practices to use technology to facilitate student learning.

Scholars indicated principals face challenges concerning technology integration into the curriculum. P1 reported students had poor reading achievement on state tests and as a result they applied leadership practices to ITC "for students to improve their reading skills." Similar to P1, P2 reported that state test scores were low in mathematics and applied practices to "integrate technology into the mathematics curriculum to help

students to improve their proficiency in mathematics." P3 applied leadership practices concerning technology integration into the literacy and mathematics curricula because state test scores in literacy and mathematics were below state average. Also, P4 "integrated technology into the core curriculum to facilitate positive student achievement and overcome learning challenges in all core subjects." P1 to P4 implemented "leadership practices" to help students to improve state test scores by integrating technology into the curriculum. According to Wyatt (2017), principals should be involved in facilitating student outcomes and overcome challenges. Schola revealed administrative support and positive attitudes among principals are essential to technology integration in the classroom (Berkovich & Bogler, 2020). One challenge for principals is the advancement of technology, and their need to update their technological skills to keep pace with the evolving learning environment (Wyatt, 2017). Another example is the continued challenges to use technology in schools (Berkovich & Bogler; Wyatt). Because of these challenges, principals should develop and advance technological skills (Bellibas & Liu, 2017). For example, Sterrett and Richardson (2020) said leaders need professional development on digital principal leadership.

P5 stated students' state test scores were below average, and applied leadership practices to facilitate positive learning for students integrating technology into the curriculum where students used online databases. Similar to P5, P6 facilitated higher academic achievement among their students through technology integration into the curriculum with the use of online databases. Moreover, P7 integrated technology into the curriculum to facilitate higher academic achievement of students with the use of online

databases. P5, P6, and P7 applied their leadership practices to facilitate positive learning for students by ITC with the use of online databases. Scholars also indicated principals face challenges to manage technology integration (Johnson & James, 2018; Levin & Bradley, 2019; Wyatt, 2017). Another challenge to use technology in schools is principals' level of support depending on their technological skills and knowledge.

P8, P9, and P10 stated student achievement influenced their decision of using leadership practices with technology in the schools. Specifically, P8, P9, and P10 used the phrase "integrate technology into the curriculum for students to improve their academic skills by using online databases." P8 integrated technology into the core curriculum to increase low state test scores. P9 applied, "leadership practices to help students to improve their state test scores by integrating technology into the curriculum via online databases." P10 implemented "leadership practices to help students to improve their state test scores," meaning that student achievement influenced their decision of applying leadership practices "with technology integration into the curriculum." For example, Ross and Cozzens (2016) revealed schools with deficient perceptions towards technology had limited support for its integration within the classrooms. For instance, Johnson and James (2018) revealed a challenge for principals to align new technology-based classroom instruction.

The role of the principals is to apply leadership practices to use technology in schools. Principals' leadership practices need to be developed, improved, and anchored on leadership practices (Bellibas & Liu, 2017; Kalkan et al., 2020). For example, Bellibas and Liu (2017) stated that principals' practices predict technology integration. Kalkan et

al. (2020) said principals with adequate knowledge of instructional leadership practices are highly effective in championing successful technology uptake in their respective high schools. Although principals face challenges with technology use in the schools, their practices influence technology-based learning (Boyce & Bowers, 2018). For instance, Yavuz (2016) advised school principals who fail to embrace technology integration have a detrimental negative impact on their schools. All participants integrated technology into the core curriculum with the use of online databases to facilitate positive student achievement and overcome learning challenges, such as low state test scores.

Scholars specified principals face challenges to manage technology integration. Christensen and Alexander (2020) reported on preparing for challenges, such as a pandemic. During COVID-19 “almost all K-12 schools closed” (Christensen & Alexander, p. 264). School leaders faced challenges with the closure of schools due to the pandemic because there was no preparation for such large nationwide mandated lockdowns (Christensen & Alexander, p. 264). Christensen and Alexander stated that school leaders should be prepared by considering “what would happen to teaching and learning in the event of a large-scale pandemic causing the buildings to be closed” (p. 267). Student achievement influenced the decision of all participants to apply their leadership practices with technology integration “into the curriculum for students to improve their academic skills” using online databases. In conclusion, school leaders should apply leadership practices to use educational technologies.

School leaders should apply leadership practices when facing challenges to support teachers regarding technology. Gomez et al. (2021) revealed, “teachers had a fair

level of confidence in both using and integrating technology" (p. 7). According to Bryant et al. (2020), schools should be "technology-enhanced learning environments" (p. 2). During the pandemic, teachers used emergency teaching modes, such as asynchronous or synchronous learning to help students (Bryant et al.). Bryant et al. reported "numerous digital technologies have supported" educators (p. 3). Huck and Zhang (2021) used the term "remote learning in a K-12 context" (p. 55) to describe the challenges during the pandemic. Therefore, the participants applied leadership practices to deal with technology challenges in schools. In conclusion, all participants facilitated student achievement and overcame learning challenges, such as low state test scores.

Funding for Technology Use in Schools

All participants used funding to purchase hardware and software program. For example, P1 used school's budget "concerning ITC." According to P1, funding was needed to purchase computer hardware and reading programs for "students to improve their state test scores in reading." P2 received funding for computers and educational programs "for students to improve state test scores in mathematics." Funding helped P2 to integrate mathematical educational technologies into the curriculum. Similar to P1 and P2, P3 received funding for technology integration into the literacy and mathematics curricula. Explicitly, P3 purchased educational programs for students in literacy and mathematics to improve their state test scores. Also, P4 approached the local educational community to receive "funding for software program" to facilitate student achievement in core academic subjects. Like P1 to P4, P5 received funding from the local state to "integrate technology into the curriculum" because of low students' state test scores in

literacy, mathematics, and social sciences. According to P6, fundings was a contributing factor to facilitate student academic achievement by purchasing "educational technologies for students to improve their reading, writing, and mathematical skills." As a school principal and advocate for student learning, P7 worked with community stakeholders to receive educational software for students to use in the classrooms to "improve proficiency on state tests." Because the school budget was limited, P8 approached community stakeholders for fundings of software programs for "the integration of educational technologies into the curriculum." Similar to P1 to P8, P9 also received funding for the "integration of educational technologies into the curriculum for students to improve proficiency in reading and mathematics." Finally, P10 said that because of funding for "educational technologies, students increased their proficiency in reading and writing." In conclusion, the participants used funding for educational software to be used in the schools.

Theme #3 is supported by current literature. Funding is needed to purchase hardware and software for the learning environment. Funding was used by school administrators to purchase educational technologies to integrate them into the curriculum. The participants used funding for ITC. P1 said funding was allocated to the school's budget "by the school district administrators concerning ITC." Specifically, P1 worked "with senior district administrators" concerning funding for purchasing computer hardware and software programs because students had poor reading achievement on state tests. Also, P1 emphasized that they integrated educational technology into the literacy curriculum "for students to improve their reading skills." Funding was necessary to help

students to increase the low state test scores in literacy. According to P1, because students had access to educational technologies their literacy skills improved as evident by the increase in state test scores in literacy. According to Jackson (2018), school principals should show a willingness to integrate technology; however, funding is needed to attain adequate technology integration in the classroom.

P2 said funding was needed concerning ITC, and they received funding to purchase computers and educational programs because "students' state test scores in mathematics were below state average." P2 integrated mathematical educational technologies into the curriculum was "for students to improving their state test scores." According to P2, academic achievement in mathematics improved by "integrating educational programs into the mathematics curriculum." Bowman et al. (2020) refereed to the quality of instructional technology use. According to Deschaine and Jankens (2017), school leaders need support to create successful and sustainable educational experiences.

P3 said that the successful technology integration into the literacy and mathematics curricula was the result of funding for computers and software. For example, P3 received funding from the local community to purchase educational programs for the school for students in literacy and mathematics classes to work on literacy and mathematics concepts. According to P3, students needed educational programs in literacy and mathematics to "improve state test scores." The reason P3 used funding to purchase educational programs was because state test scores had to be improved in literacy and mathematics. According to P3, after the integration of

"educational technologies into the literacy and mathematics curricula" literacy and mathematics state test scores improved. P3 concluded achievement in literacy and mathematics increased because of ITC. Dexter and Richardson (2020) said that the leadership of technology affects technology integration. P10 reported that funding was "absolutely necessary to facilitate academic achievement at the school." Because state test scores were low, P10 purchased educational programs for students to use in the classrooms to "improve proficiency." P10 facilitated learning "by receiving funding to purchase software programs to help students to improve their state test scores." Principals should not fail to visualize the importance of technology integration (Bowman et al., 2020; Deschaine, & Jankens, 2017; Dexter & Richardson, 2020).

Scholars reported school principals encounter challenges when introducing technology in their schools. P4 received funding from the local educational community to purchase software programs to facilitate positive student achievement in core subjects. One of the reasons that P4 received funding to purchase software programs was because they were challenged with the low state test scores in core subjects that were below state average. The challenge P4 had was to increase state test scores in the core subjects. To achieve that goal, P4 said "software educational programs were used in the classes to help students improve their literacy, mathematics, and science skills." The challenge P4 had was to find a way to increase state test scores. Thus, for P4 to overcome this challenge, educational software was purchased for students to use in the classroom to "help students to improve their proficiency on state tests." For instance, Vogel (2018) wrote school principals face many challenges when integrating technology into the

curriculum. Additionally, Gürfidan and Koç (2016) said challenges could hinder technology use in the classroom.

Scholars have also reported school principals face challenges contributing to ITC because of funding. P5 received funding from the local state to ITC. P5 was challenged with students' low state test scores in literacy, mathematics, and social sciences. The funding P5 received was used to purchase software programs in literacy, mathematics, and social sciences to assist students in improving their state test scores in the core subjects. According to P5, leadership practices were applied to receive "funding for technology integration into the curriculum" resulted in facilitating positive learning for students. Also, according to P5, because technology was integrated into the literacy, mathematics, and social sciences curriculum, state test scores increased in these core subjects. P9 brought to the school reading and mathematics programs "for students to improve their proficiency in reading and mathematics." P9 implied they facilitated positive student achievement by having students use reading and mathematics programs for learning in the classrooms. Johnson and James (2018) reported funding is a barrier in ITC. For instance, initial stages of purchasing equipment, software, and hardware components can be a challenge to school leaders (Johnson & James).

P6 was challenged with low state scores. P5 received funding to facilitate higher academic achievement as measured by state tests. The funding P6 received was used to purchase "educational technologies" for the classes at the school. By purchasing educational technologies for core classes, P6 facilitated student higher academic achievement. Moreover, P6 applied leadership practices to receive funding. According to

P6, funding affected student higher academic achievement. The explanation P6 provided was that because technology was integrated into the curriculum, students improved their reading, writing, and mathematical skills. P6 emphasized that because they were responsible for student academic achievement, they worked with community stakeholders to receive funding to "integrate technology into the curriculum." P8 received funding for the integration of educational technologies, such as reading and mathematics programs into the curriculum. According to P8, "technology was integrated into the curriculum to facilitate positive student achievement." P8 reported because technology was used in the school, students increased state test scores students due to the use of the reading and mathematics programs in the classrooms. According to Wyatt (2017), funding is a challenge principals experience when integrating technology in their school's curriculum. Jackson (2018) said the main challenge principals face is how they can collect support for funding from various sources. Therefore, funding is a challenge contributing to technology integration in schools.

Principals experience funding challenges. Like P1 to P6, P7 reported that funding affected student academic achievement. P7 applied leadership practices concerning technology integration into the curriculum. For example, P7 said "technology was integrated into the curriculum for students to improve their state test scores." One leadership practice applied by P7 was to work with community stakeholders who donated educational software to the school for students to use in the classrooms. Community stakeholders contributed to technology integration into the curriculum by providing funding to the school where P7 was the principal. According to P7, technology was used

in the classrooms. Higher academic achievement was possible "with technology integration into the curriculum for students to increase proficiency as measured by state tests." P7 concluded that because they were a technology leader and supported technology, "technology integration into the curriculum was necessary for the academic benefit of students." Johnson and James (2018) said realizing technology integration demands that stakeholders understand that principals experience challenges when seeking financial support and resource allocation. For example, Johnson and James noted principals have limited time to create and submit grant applications. For instance, integrating technology requires budgetary allocation to maintain technology and hire experts to run the information technology issues within the school, further raising the costs. According to Johnson and James, school principals need to be progressive, creating expectations and needs, remaining committed and compliant, being modeled and visible among teachers, and being comprehensive. Thus, school principals need support to overcome the barriers, such as finding, affecting their perceptions concerning technology use in schools.

Defining or Revising the School Mission

Participants defined or revise the school mission. This theme is in line with the findings of scholars. All participants defined or revised the school mission to include ITC. For instance, P1 said the school mission did not include ITC. Because state test scores in reading were below state average at the school where P1 was the principal, P1 applied "leadership practices to include in the school mission ITC for students to improve their reading state test scores." According to P1, school principals have the responsibility

"to support teachers to help students improve their reading skills by using educational technologies in the classrooms." P1 facilitated positive student achievement by including in the school mission ITC. According to Jackson (2018), principals develop school mission, and direct staff to work towards the realization of the school mission. For instance, the school mission should be implemented to help students with the curriculum using educational technologies (Boyce & Bowers, 2018).

P2 applied practices to "revise the school mission to include the integration of technology into the mathematics curriculum." For example, P2 applied leadership practices to revise the school mission with the support of teachers. The revised school mission focused on technology integration "for students to improve their mathematical skills," according to P2. Technology should be available in the schools (Callaway, 2017).

The school missions was revised to include "technology integration into the literacy and mathematics curricula," according to P3. As P1 and P2 revised the school mission, P3 worked with teachers to include in the school mission a paragraph concerning technology integration into the literacy and mathematics curricula. P3 revised the school mission to "integrate technology" into the literacy and mathematics curricula. By revising and implementing the school mission, P3 applied skills for the academic benefit of the students who used educational technologies in the classrooms to "improve their proficiency on state tests." Technology should be available in the schools to create technology-driven classrooms for the academic benefit of students (Wyatt, 2017).

The participants revised the school mission. P4 reported because the state test scores were below state average in core academic subjects, they decided to revise the

school mission. The school council members met with P4 to find solutions to increase the state test scores. During the school councils, P4 redefined "the school mission to include educational technologies into the core curriculum for students to increase their proficiency in the core subjects." P4 applied leadership practices and revised the school mission to include educational technologies into the core subjects. By redefining the school mission, P4 helped teachers with the use of educational technologies, and as a result "students improved proficiency on state tests." According to P4, "By including ITC in the school mission, teachers better supported students." P4 implemented their leadership practices to define a school mission to help students to "improve their state test scores by integrating technology into the curriculum." Technology should be available in the schools because emerging technologies could help students develop new academic skills (Levin & Bradley, 2019).

The school mission should focus on technology use in the schools. P5 worked with teachers and staff on the school mission for teachers to focus instruction on teaching with educational technologies. According to P5, because the state test scores needed improvement in the past 5 years , they revised the school mission. P5 reported that they applied their leadership practices to revise the school mission to "include the use of technology in the curriculum." According to P5, because the school mission was redefined and they supported the teachers, students improved their state test scores." P5 facilitated positive student achievement by redefining the school mission that included "technology integration into the curriculum." For instance, Jackson (2018) wrote principals should develop the school vision to include technology.

Moreover, principals should apply practices to successfully use technology in schools. According to P6, instructional leadership was applied to define the school mission to include academic achievement with ITC. Because state and district test scores were below average, P6 revised the school mission to focus on how to facilitate student higher academic achievement. Moreover, principals should apply practices to successfully use technology in schools by involving all education stakeholders (Johnson & James, 2018; Wyatt, 2017). Principals should support teachers to learn about educational technologies (Bowman et al., 2020; Dexter & Richardson, 2020).

The school mission should focus on using educational technologies to facilitate student learning. Web-based technologies and software could help students not only during a pandemic but also in normal teaching environments. P7 met with school council members to identify strategies to "improve state test scores" and applied instructional leadership skills to define the school mission to promote ITC. Specifically, P7 worked with school council members and defined the school mission to include technology integration to facilitate higher academic achievement. P7 reported after the revision of the school mission and their support to teachers as an instructional leader to "integrate technology into the curriculum," state test scores began to improve. Educational technology tools could facilitate student learning (Kormos & Wisdom, 2021).

P8 said student achievement was a challenge in the low performing school they served as a school principal. After numerous staff meetings and school council meetings, P8 included in the school mission "technology integration into the curriculum as a strategy to increase state test scores." P8 included "in the school mission technology

integration into the core curriculum for teachers to help students to improve state test scores." P9 said state test scores where below state average the first 2 years of their principalship. As a strategy to "improve state test scores," P9 worked closely with teachers to support them to use educational technologies in the classrooms. Leadership practices and technology expertise were applied by P9 to define the school mission to include "technology integration into the curriculum." Teachers worked with P9 to define the school mission to focus on strategies to "help students to improve their low state test scores." Members of the school council and members of the school improvement plan also worked with P9 to define the school mission. Therefore, P9 implemented their leadership practices to help members of the school council and school improvement plan to include in the school mission strategies to help students improve their state test scores by integrating technology into the curriculum. Because P9 applied their leadership practices and technology expertise to define the school mission to "include technology integration into the curriculum" at the school, "state test scores began to improve." Because P9 defined the school mission to include ITC "students improved state test scores in the last 2 academic years." P10 served as a school leader in a low performing school. The school mission was revised to include ITC as stated by P10. The school council members with expertise in educational technologies worked with P10 to revise the school mission. The school council supported P10 to revise the school mission "for teachers to use educational technologies in the classroom." Therefore, P10 implemented their leadership practices to define the school mission to include "technology integration into the curriculum for students to improve their state test scores." In conclusion, P10

facilitated positive student achievement with the inclusion in the school mission of "technology integration into the curriculum." Students could use software for learning purposes (Alkis & Taskaya-Temizel, 2018; Lemoine et al., 2020).

Both P1 and P2 focused on technology integration to help students improve state test scores. Analogous to P1, P2, and P3, P4 was a principal in a low performing school and the state test scores were below state average in core academic subjects. P4 included "in the school mission the use of educational technologies into the core curriculum for students to increase their proficiency in the core subjects." According to P6, the school mission was revised to include academic achievement "with the integration of educational technologies into the curriculum because state and district test scores were below average." Comparable to P4 and P5, P7 was a school principal at a low performing school where the state test scores were low, and P7 applied their instructional leadership skills to define the school mission to use technology to teach the curriculum. Similar to P4, P5, and P7, P8 was a principal in a low performing school and applied their leadership practices to revise the school mission to include technology integration into the curriculum. As P1 to P8 revised the school mission, P9 applied leadership practices and their technology expertise to define the school mission to include "technology integration into the curriculum." P4, P5, P7, P8, and P10 served as school leaders in a low performing school and applied their leadership practices to define the school mission to include technology integration into the curriculum. In summary, all participants defined or revised the school mission to include ITC. The participants facilitated positive student achievement. Zuger (2020) recommended "students to engage in collaborative,

cross-disciplinary experiences with cutting-edge technology" (p. 20). For instance, Zuger stated cutting-edge technology could be adapted for K-12 classrooms. Zuger explained cutting-edge technology can be used to support students interested in digital art.

School leaders should implement school mission to include pedagogical approaches. Sproule and Mombourquette (2020) collected data via semistructured interviews to examine the implementation of competencies-based curriculum. The findings included school vision for school principals to include pedagogical approaches. School leaders should have a technology vision and development the school mission. In conclusion, the findings are in line with current literature review concerning leadership practices for ITC.

Limitations of the Study

The first limitation was the methodology. I used a basic qualitative research design. The second limitation was the sample size, which was 10 participants. Although the study population was 85 K-12 principals, 10 agreed to participate in the study. This study was limited to the number of K-12 principals who provided their perceptions related to ITC. A larger sample could have yielded more robust interview data. I met the limitations of sample size concerns and established access to participants by setting up Zoom meetings. When I invited the participants to the study, I shared with them a copy of the research problem and purpose statements for the participants to reflect on the significance of this study.

The third limitation was the participants were from one public school district intentionally selected regarding a central phenomenon, which was ICT. This study was

limited to the geographic boundaries within the school district. The fourth limitation was I was the data collection instrument. I developed the interview questions, interviewed 10 participants, collected data via Zoom because of the pandemic, and did not meet with the participants in a natural setting. The participants could have been reluctance to provide honest responses. The fifth limitation was the participants may have had limited experiences with ITC. The sixth limitation was I did not interview school teachers or staff. I interviewed the participants concerning credibility and for data triangulation. Should I had interviewed participants from other school districts, the themes could have yielded different findings. Should I had reviewed policies concerning ITC, the policies could have provided further insight into the research phenomenon.

Limitations cannot "be controlled by the researcher, and that may influence the credibility of the study" (Creswell & Creswell, 2017, p. 173). I used a data collection process and assured interview excerpts represented the perceptions of the participants from elementary, middle, and high schools. The perceptions of each participant were included in the findings. By asking the same interview questions and applying ethical procedures, I achieved dependability. I interviewed elementary, middle, and high school principals for triangulation. I used member checks, kept field and reflective bracketing notes, and used member checking. These limitations were potential weaknesses of this research; however, I established dependability using interviews, member checks, triangulation, and data audit. I established transferability because I interviewed multiple participants. The findings may be transferable to similar school districts.

Recommendations

Based on the findings, school leaders should implement educational technologies. School leaders should apply leadership practices concerning ITC and the definition or redefinition of school mission. School leaders should coordinate not only school curriculum but also manage instructional programs, monitor students' progress, frame and communicate school goals to educational stakeholders. School leaders should receive funding to purchase computer hardware and software programs in literacy, mathematics, and science for students to use in the classroom to improve their skills in the core academic subjects. School leaders should define or redefine the school mission to include technology in schools. The focus of the school mission should be on technology integration into the curriculum. Thus, school leaders should apply leadership practices to include in the school mission technology. Future researchers should interview teachers and members of school councils. Also, future researchers should interview school district administrators and community leaders. Researchers may interview educational stakeholder from more public school districts for the benefit of the local county.

Implications

Findings revealed that school leaders apply leadership practices to coordinate the school curriculum, integrate technology into the curriculum, manage instructional programs, monitor students' progress, and frame and communicate school goals to educational stakeholders. School leaders can use the findings to receive funding for the local educational communities and state government to integration technology into the curriculum to purchase computer hardware and software programs in literacy,

mathematics, and science for students to use in the classroom to improve their skills in the core academic subjects. School leaders can use the findings to define or redefine the school vision to facilitate positive student achievement and to overcome learning challenges. Moreover, school leaders can facilitate positive student achievement and overcome learning challenges by applying for funding and by defining or redefining the school mission to include technology. Positive social change may result from these recommendations that may assist K-12 school principals to address ITC for students to pass state testes and graduate from school.

Conclusion

The first theme was the participants implemented leadership practices for ITC. The second theme was the participants facilitated positive student achievement and overcame learning challenges. The third theme was the participants used funding for ITC. The fourth theme was the participants defined or revised the school mission to include ITC.

School leaders can apply leadership practices regarding ITC to improve student learning. Moreover, school leaders can coordinate the school curriculum and integrate technology into the curriculum via management of instructional programs and by monitoring students' progress. Furthermore, school leaders can integrate technology into the curriculum to facilitate positive student achievement and to overcome challenges in literacy, mathematics, and science with technology integration into the curriculum. Moreover, school leaders can receive funding for ITC to purchase computer hardware and software programs in literacy, mathematics, and science for students to use in the

classroom to improve their skills in the core academic subjects. Finally, school leaders can define and redefine the school mission to include ITC regrading positive student achievement to help students to improve state test scores. In conclusion, school leaders can apply leadership practices to include in the school mission ITC for students to pass state tests and graduate from school.

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Appendix A: Interview Protocol

Interview Questions:

Q1. What are your perceptions of instructional leadership practices concerning ITC?

Q2. How do you implement instructional leadership practices concerning ITC?

Q3. How do you integrate technology into the curriculum?

Q4. How do you communicate the school's goals concerning ITC?

Q5. How do you define the school's vision concerning ITC?

Q6. How do you define the school's mission concerning ITC?

Q7. How do you manage instructional programs at the school concerning ITC?

Q8. How do you coordinate the curriculum by using technology?

Q9. How do you supervise ITC?

Q10. How do you develop leadership skills concerning ITC?